



MAZDA MOTOSPORTS EDITION



## THE GREAT TEAMS ISSUE

### STAY ON TARGET

25 years of Target Chip Ganassi Racing

### THE DOMINATORS

Racing's ultimate powerhouses

### + ROADSTER REVOLUTION

25 years of the Mazda Miata

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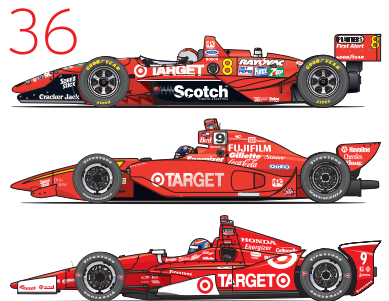
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25 years of Target Chip Ganassi Racing was marked by silver cars at the Indy 500 and Coke 600 on Memorial Day weekend.  
Illustration:  
**Ricardo Santos**



Chris Owens/IMS



Paul Lagette



Richard S. James

**“Thanks to everyone in the M3 program, it felt like we got 102 percent from it. That now continues with the Z4”**

**JENS MARQUARDT, BMW**



Ebrey/LAT

**R**  
**RACER**  
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A great team for a long time, Michael Schumacher and Ferrari reset most of F1's records at the start of this millennium.







## **R** FREEZE FRAME

The Clean Diesel-powered Mazda SKYACTIV-D Prototype racing in the TUDOR United SportsCar Championship is demonstrating the efficiency and durability of Smart Diesel engine technology.

**WHERE** Long Beach, Calif.

**WHEN** 04/11/14

**PHOTOGRAPHER** Phillip Abbott/LAT



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S. Landy

ATLANTA

MAZDASPEED

HOOVER SPEED



**R** FREEZE FRAME

Mazda MX-5 Cup action at Mazda Raceway Laguna Seca. Sebastian Landy leads a squabbling train that includes leading rookies Kenton Koch and Lucas Catania.

**WHERE** Monterey, Calif.

**WHEN** 05/02/14

**PHOTOGRAPHER** Sean Rice



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## **R** FREEZE FRAME

Tom Long and Marine Staff Sgt. Liam Dwyer, who lost his left leg in an IED blast in Afghanistan and races with a prosthesis, won the Continental Tire SportsCar Challenge's Street Tuner class at Lime Rock in their Freedom Autosport Mazda MX-5.

**WHERE** Lime Rock Park, Conn.

**WHEN** 05/24/14

**PHOTOGRAPHER** Scott R LePage/LAT

**Editorial Business Office**  
 Racer Media & Marketing, Inc.  
 17030 Red Hill Avenue  
 Irvine, CA 92614  
 (949) 417-6700 Fax (949) 417-6116

**Editor** David Malsher  
**Editor-in-Chief** Laurence Foster  
**Executive Editor** Andrew Crask  
**Editor-at-Large** Gil de Ferran  
**Art Director** Rob French  
**Columnists** Helio Castroneves, Tony Stewart  
**Founding NASCAR Editor** Gerald Martin (1943-1999)

**We remember** Michael C. Brown, *RACER* founding photographer and one of the good guys

**Senior Writers** Peter Brock, Adam Cooper, David Evans, Jen Horsey, Mark Hughes, Richard S. James, Eric Johnson, Tom Jensen, Robin Miller, Jonathan Noble, Jeff Olson, David Phillips, Marshall Pruett, Jeremy Shaw, Edd Straw, Todd Veney, Gary Watkins

**Photo Services** LAT Photographic  
**Senior Photographers** Phillip Abbott, Tony Di Zinno, Marc Gewertz, Rick Graves, Nigel Kinrade, Sean Klingelhofer, Brian Konoske, Michael Levitt, Lesley Ann Miller, Steve Swope, Camden Thrasher, Paul Webb

**Digital Artist** Ree Tucker  
**Illustrations** Paul Laguette

**RACER.com Columnists** Marco Andretti, Peter Cunningham, Conor Daly, Scott Dixon, Mike Hull, Ryan Hunter-Reay, Pippa Mann, Muscle Milk Racing, Will Power, Bobby Rahal, Oriol Servia, Zach Veach, Justin Wilson

**Pre-press/Image Manipulation** Miguel Vega

**Associate Publishers** Wen Lai, Steve Bottom  
**Global Sales Director** John Chambers  
**Sales Manager** Sophia Lopez  
**Advertising Operations** Victor Uribe  
**Accounting Manager** Sandra Carboni-Alexander

**Founder, CEO & Executive Publisher** Paul Pfanner  
**Co-founder, COO & Publisher** Bill Sparks  
**Co-founder & Editorial Advisor** Jeff Zwart

**Toll-Free Advertising Line** (800) 722-7140  
**Outside the U.S. and Canada** (949) 417-6700  
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**RACER REPRINTS**  
 Contact Nick Iademarco at  
 Wrights Media. Tel: (281) 419-5725  
 nlademarco@wrightsmedia.com

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David Malsher  
 EDITOR

“Think how many titles have been lost by one pitlane mishap, one poor strategy, one driver error, one piece of bad luck”

Probably the greatest basketball player of all time, Michael Jordan succinctly conveyed the hard work and hardline attitude it takes to succeed in any sport. “I’ve missed more than 9,000 shots in my career,” he said. “I’ve lost almost 300 games. Twenty-six times, I’ve been trusted to take the game-winning shot and missed. I’ve failed over and over and over again in my life. And that is why I succeed.”

Almost all the greatest teams in the history of auto racing could relate to that. Following Jody Scheckter’s 1979 Formula 1 World Championship, it took Ferrari until 2000 to clinch another drivers’ title, Michael Schumacher’s fifth season with the team. From the formation of Target Chip Ganassi Racing in 1990, it took four years to score the first victory, and two more years to make a serious run at the CART Indy car title – which was successful. And how about John Force Racing? We think of Force’s 16 Funny Car titles and JFR’s 18 as a team – but it took eight years from his NHRA debut until his first win (in 1987) and a further three years before he became champion for the first time.

There are many ways to define a great team, and one of them surely is the ability to disprove the theory that it’s harder to



LAT archive

stay on top than to get there. Then there’s the cliché that’s also a truism – a chain is only as strong as its weakest link. As Red Bull Racing – undeniably a great team – is proving right now, great drivers, great cars and great strategies aren’t enough to overcome the deficit of a down-on-power engine. And think how many titles have been lost by one pitlane mishap, one poor strategy, one driver error, one piece of bad luck.

A great team has to collectively do what a great driver individually does: repeatedly go faster than anyone else, while minimizing the number of errors and minimizing the effect of those errors. Or to quote the sage Mr. Jordan once more: “Talent wins games, but teamwork and intelligence wins championships.” ■  
**editor@racer.com**

**CONTRIBUTOR**



Drew Gibson/LAT

Tom Kristensen, nine-time Le Mans winner, told *RACER* some of the things he does to maximize his chances of making it 10. Take note, TK wannabes...

**STORYBOARD**



Richard Dole

We want the red one! Kia Motors America let us put its *Pirelli World Challenge Optima* on its assembly line in Georgia before Richard Dole started our *In Focus* shoot. It seemed appropriate: that’s where the GTS race-winner started life.

***MORE MAZDAS ARE ROAD RACED ON ANY GIVEN WEEKEND THAN ANY OTHER BRAND\****



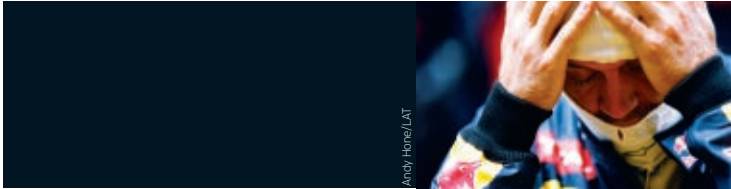
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\*Based on SCCA data as of April 1, 2013

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Having his F1 domination usurped by that of Merc's drivers was bad enough, but world champ Sebastian Vettel wasn't even on top at Red Bull, getting out-performed by new teammate Daniel Ricciardo out of the gate.

Lewis Hamilton delivered a long string of victories to Mercedes, but it's hardly been cruise-and-collect for the driven Brit.

## SILVER SURFERS

Five grands prix, five crushing Mercedes-Benz team wins. Is a season domination of historic proportions ahead?

> While it was clear from Formula 1's pre-season testing that the predominance of Red Bull Racing and Sebastian Vettel was unlikely to continue into 2014, few would have guessed how completely the new top dogs from Mercedes-Benz would assert themselves. After five grands prix in which the margin of superiority enjoyed by its drivers Lewis Hamilton and Nico Rosberg has not only been maintained, but actually widened, it's starting to look like 1988's F1 high-watermark campaign of 15 wins from 16 races for McLaren-Honda might be in jeopardy.

Rivals had maintained a brave front ahead of the start of the European season in Spain, suggesting that their



### CAN'T TOUCH THIS

As Hamilton and Rosberg pushed each other to greater and greater heights, they left the rest that much further in arrears. Kimi Raikkonen had an excellent view of the late-race battle for the lead in Spain, but only because his Ferrari was a lap down...

ongoing developments would close the gap; but either their progress was insufficient or Mercedes' was greater, because Hamilton and Rosberg actually increased the gap in Barcelona (see graph at right). After narrowly avoiding being lapped on home turf while coming home sixth, Fernando Alonso dispensed with the usual upbeat post-race take by conceding that his Ferrari team's title aspirations were already over. Red Bull's surprising pacesetter Daniel Ricciardo, too, admitted third place was the best he could hope for, at least for now.

Meanwhile, the occupants of the Silver Arrows are keeping their personal duel clean, but intense. After a mechanical failure robbed him in Australia, Hamilton bested Rosberg the next four times out, but the margins were tiny and the intra-team tension already into the red zone. Hamilton pointedly questioned every aspect of his crew's strategic calls in Barcelona with Rosberg breathing down his neck, while Rosberg admitted frustration at his string of near-misses and vowed to reverse them.

While a repeat of the Prost-Senna contretemps that spiced the '88 steamroller season seems unlikely, it's clear neither Mercedes man will accept anything less than victory. Which gives us plenty of drama to watch for, even if the metallic Mercedes W05s gleam at us from parc ferme after every race this season.

### A GROWING CHASM?

The margin between the winning Mercedes and the first non-Merc was big if relatively stable for the flyaway races, but in Spain it doubled! Back to the keyboard, rival teams.

AUSTRALIA	26.777sec
MALAYSIA	24.535sec
BAHRAIN	24.067sec
CHINA	23.604sec
SPAIN	49.014sec

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**RACER.com**

The Battle of Champions at Ferrari has been muted by the disappointing form of the Scuderia generally and Kimi Raikkonen specifically, but the Finn pushed Fernando Alonso hard in Spain, so it could yet heat up.



Andy Hume/LAT



Gem Dunbar/LAT



Scott R. LePage/LAT

After their aborted start, the IndyCar field showed what road racing should be about.

## WORTH A SECOND LOOK

The GP of Indy started ugly, but got prettier

> The idea of adding a road race to the Month of May at Indianapolis was always going to be hard to get used to, and the inaugural GP of Indy gave old-timers plenty to blanch at, from running in the rain in practice, to a standing-start-that-wasn't (BELOW) on race day. But there was also reason for optimism that foundations for a new tradition were being laid.

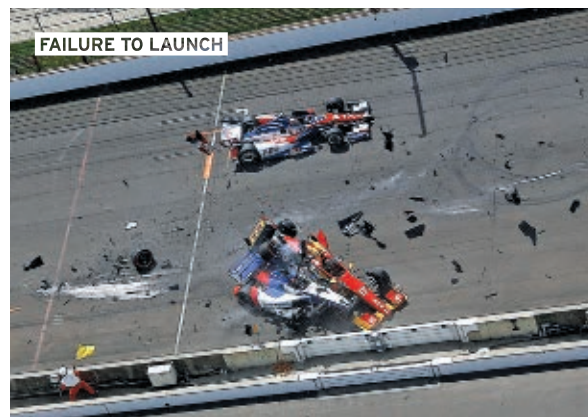
After the race finally got going, it quickly showed the huge potential for passing on Indy's revised road course, as new boy Jack Hawksworth

strutted his stuff up front before a national network TV audience on ABC. While Hawksworth's performance was eventually squandered by



tactical missteps in a race determined by fuel strategy, the will-they-or-won't-they-pit fuel drama surrounding the leaders in the closing stages lent a suitable degree of drama to the proceedings

before Simon Pagenaud salted away the win. And whichever estimate of the crowd you preferred, it far exceeded that seen for Indy 500 practice days in recent years.



Michael Lewis/LAT

Sebastien Saavedra's surprise GP of Indy pole served only to demonstrate the high safety standard of Dallara's DW12 when he stalled at the lights and was slammed from behind, without injury.



Jim Nabors, who first sang "(Back Home Again in) Indiana" as part of the Indy 500's race day ceremony in 1972, has decided this year will be his last. The 83-year-old, who lives in Hawaii, is actually from Alabama!



**LEARNING EVERY LAP**

Kurt Busch builds his data bank and is up to speed in an Indy car

Busch seemed to gain race sim smarts and speed each time he stepped into Andretti's fifth car.

> After breezing through the three-stage Rookie Orientation Program for the Indianapolis 500 with a 220mph lap, former NASCAR champion Kurt Busch had his eyes opened wide by the experience of driving Indianapolis Motor Speedway in dirty air.

"It's like my parents when I was a kid - Andretti Autosport sent me out to play in the traffic," grinned Busch after Opening Day. "Following behind my teammate, Ryan Hunter-Reay, a champion, was really good. But at 220mph, you have to remember

each moment you had were from the lap before. Then you take on more information to digest for the next lap, and so on."

The Stewart-Haas Racing NASCAR driver is no stranger to IMS, having taken part in 13 Brickyard 400s, nor is he surprised by the effect of the draft, but he was intrigued by the stock car/Indy car comparison.

"The draft in an IndyCar is 10 times what you feel in a stock car; I could easily catch the guy in front of me. The flip side is that these cars have less horsepower than a Cup car, so if you ease off the gas,

you really lose your momentum and so you can't disguise your mistakes."

Busch also pointed out that his "doing the double" of Indy 500 and Coca-Cola 600 in the same day was being welcomed by competitors on both sides of the fence.

"There's been a warm reception here at Indy," he said, "and a legend to me, Gil de Ferran, stopped by to wish me good luck. But there's also been a lot of camaraderie from the NASCAR drivers. Jeff Gordon, Carl Edwards and Marcos Ambrose, they were all interested in how I was doing."



Villeneuve's return to Indy cars is with Schmidt Peterson Motorsport.

**JACQUES BE QUICK...EVENTUALLY**

> Kurt Busch has garnered huge publicity for racing NASCAR and IndyCar in the same weekend, and Juan Pablo Montoya's pace in his full-time IndyCar Series comeback is already proving this was more than just a publicity stunt.

But there's a former Indy 500 winner whose IMS return has been under the radar. Jacques Villeneuve, 1995 victor at the world's most famous race and '97 F1 World Champion, admitted reacquainting to Indy car speeds was a bit of a shock.



**ODD FACT**  
JV remains the only driver in history to have to complete 505 miles for his Indy 500 win...

"It took a while to get there," said Villeneuve following his refresher course. "The first few laps were quite surprising because it felt like I was going fast and I looked and it was 180. I thought, 'There's still a long way to go...'"

"But after another 10 laps, I started getting in the rhythm and once you start going flat all around, it becomes easy."

Villeneuve, who will race a third Schmidt Peterson Motorsports car, ended Opening Day with a 220.070mph lap.



**BUSCH'S BOSS GETS IT**

Stewart-Haas co-owner Tony Stewart understands the allure of going for the Indy 500 / Coke 600 double on Memorial Day weekends. Back in 2001, he led 13 laps and finished the "500" in the wheel tracks of Ganassi teammates Jimmy Vasser and Bruno Junqueira in sixth. He then flew to Charlotte and, with less than 30mins to spare, was forced to start 43rd and last. But he came through the pack and finished third.





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Thanks for 25 great years together, and cheers to the road ahead.



Dan Boyd/LAT



For seven-time 24 Hours of Le Mans GT class winners Corvette Racing, its last victory in 2011 seems a long time ago... But GT Le Mans class wins in the final two TUDOR Championship outings before heading to France bode well for its all-new C7.R making it eight.

# TOYOTA SENDS A MESSAGE

## Heading to Le Mans, TS040 has a 100 percent 2014 WEC win record

> Toyota heads to the 24 Hours of Le Mans as the pre-race favorite, following an unbeaten start for its TS040 HYBRID in the FIA World Endurance Championship.

Toyota trio Anthony Davidson, Nicolas Lapierre and Sebastien Buemi led a TS040 1-2 at the Silverstone opener, and followed it up with a win in the Six Hours of Spa-Francorchamps, the final guide to form before Le Mans itself.

The Toyota, which combines a gasoline, normally-aspirated, 3.7-liter V8 engine with front- and rear-axle energy retrieval systems, puts out 1,000hp, while using 25 percent less fuel than its TS030 predecessor.

Opposition for the TS040 in the fight for the overall win comes from 12-time winner Audi and LMP1 newcomer Porsche.

Porsche's 919, which augments a gasoline, 2-liter turbo V4 with a single-axle

ERS and an exhaust-driven heat energy system, put a marker down with a podium at Silverstone and pole at Spa, but heads to Le Mans unsure of its form over 24 hours.

Meanwhile, Audi's diesel-hybrid R18 e-tron quattro has a best finish of second at Spa, but its legendary reliability could be its ace against the flying Toyotas at Le Mans.

● **Turn to page 82 for nine-time winner Tom Kristensen's keys to Le Mans.**

Toyota made it two wins from two 2014 starts for its TS040 at the Six Hours of Spa-Francorchamps.

Jakob Erenyi/LAT



### WEBBER'S BACK

Porsche team leader Mark Webber (ABOVE) will race at Le Mans for the first time since 1999, when he non-started after his Mercedes GT1 flipped twice on the Mulsanne Straight during practice and the race warm-up.

All the latest sports car news at **RACER.com**

## NISSAN ZEOD TARGETS ALL-ELECTRIC LE MANS LAP

> Nissan is confident that its ZEOD RC racer will hit all of its objectives at the 24 Hours of Le Mans, including the first all-electric lap of the 8.47-mile Circuit de la Sarthe.

Following its first prolonged test at France's Paul Ricard track in April, the ZEOD is on target to complete a full racing lap purely on energy retrieved from its hybrid system, hitting 185mph on the Mulsanne Straight in the process.

The ZEOD races in the June 14-15 enduro as the "Garage 56" entry, a spot

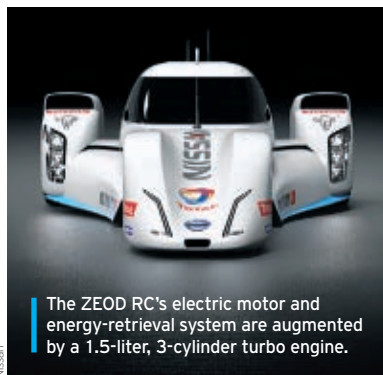
reserved for cars showcasing innovative technologies. Its electric motor and energy retrieval system is supplemented by a turbocharged, direct-injection gasoline engine, which develops 400hp.

Powered by the conventional engine, Nissan believes the ZEOD will lap slightly quicker than an LMP2 prototype - around 3m40s - with a lap under four minutes the target in its all-electric guise.

Lucas Ordonez, Wolfgang Reip and Satoshi Motoyama will drive at Le Mans.

### RECORD NEXT?

Post-Le Mans, Nissan has hinted that the next challenge for its ZEOD RC could be an attempt on the all-electric world land speed record, which currently stands at 205.139mph.



The ZEOD RC's electric motor and energy-retrieval system are augmented by a 1.5-liter, 3-cylinder turbo engine.

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 **BorgWarner**



This year marks the 60th anniversary of Bell Helmets. Turn to page 96 for the history of this legendary brand. Then check out RACER.com for a series of fascinating Dan Gurney (LEFT) videos presented by Bell.

# INDIANAPOLIS 700

SVRA's Brickyard Vintage Racing Invitational will be awash with legendary cars and drivers



In June, the Brickyard will once more echo to the sounds of racecars from its 100-year past.

LAT archive

## Q&A

### TONY PARELLA of SVRA

#### What are the oldest and newest cars you have attending?

A 1908 Locomotive that won a sprint race at Indy in 1910 and took part in the first "500" in 1911, and a 2008 Daytona Prototype. So we have a century of racing covered!

#### I assume it's been oversubscribed...

Yes, we had over 1,200 requests, but we've drawn the line at around 700.

#### Who are some of the stars there?

Al Unser Jr., Bobby Unser – driving his 1981 Indy-winning Penske! – Robby Unser, Scott Goodyear, Willy T. Ribbs, Johnny Parsons Jr., Geoff Brabham, Lyn St. James, Rocky Moran, Eliseo Salazar, Dick Simon, Spike Gehlhausen, Alex Lloyd, Mark Dismore, Rick Treadway, and more.

#### What's been your coolest coup?

Parnelli Jones is grand marshal for the Pro-Am race, and he'll give the command, "Racers, start your engines!" from the driving seat of the pace car – his 1969 BOSS Mustang!



> Following hot on the heels of IndyCar's inaugural Grand Prix of Indianapolis and the 98th running of the Indy 500 will be the first Sportscar Vintage Road Racing Association event at Indianapolis Motor Speedway, June 6-8.

SVRA President and CEO Tony Parella said, "We're confident that the incredible heritage and location of the Speedway will make the Brickyard Vintage Racing Invitational the largest vintage event ever held in the United States."

Parella first contacted the Speedway

#### TICKET INFO

Tickets are exceptional value, with three-day general admission at \$40, and individual days at \$15/\$20/\$25 for Fri./Sat./Sun.

Children under 12 get in free. Tickets can be ordered from [www.ims.com/tickets](http://www.ims.com/tickets)

with the idea in June 2012, three months before he closed the deal to buy the SVRA.

"I don't think anything could beat Goodwood in terms of how they produce their events," said Parella, "but there was one place that could put on an American version, and that's the Speedway. It has the right history and prestige."

The event will feature an oval track reunion and exhibition, as well as racing on the 2.439-mile Indy road course. Fans will have "open access to the paddock, racecars and drivers."



## IN THE NEXT RACER THE GT ISSUE

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# GIL DE FERRAN

**TWO-TIME CART INDY CAR CHAMPION  
2003 INDIANAPOLIS 500 WINNER**



It's no secret that I love racing, but I do often think, "Why do I love racing?"

It's kind of a pointless exercise, really. Going around in circles, trying to beat each other, burning tires, fuel...risking your life, others risking their lives. Springs, dampers...

Really?! Who cares? What's the point?

Well... I know there are millions around the world who feel the same way as me, but I guess I can only really speak for myself.

There are many things that appeal to me about racing. First, stating the obvious, I love cars and all things mechanical. I love the creative process and I'm fascinated by what humans can create. Second, I enjoy exploring and pushing boundaries. In racing, as in any sport, any competition, if

sport, it takes many many people to accomplish this - a race team. Therefore, we're really talking about a hyper-intense competition between teams, every two weeks or so, with clear winners.

Having been around the block a few times, I believe that racing, in many respects, exaggerates the positives or negatives of a team's performance. There's nowhere to hide deficiencies; the numbers will show them and your competition will exploit them. A race weekend will show very clearly your shortcomings as a team, so it's the perfect laboratory to judge the performance of collective human endeavors. Bad organization, you lose. Poor management, you lose. Not enough knowledge, you lose.

**“Having been around the block a few times, I believe racing exaggerates the positives or negatives of a team's performance”**

limits aren't explored, no success will come.

Lastly, it's the intensity and certainty of racing. Thankfully, I've never been to war, *real* war that is, but the cycle of a racing season feels like a war, where races are battles culminating in a championship. With clear winners, it's not subjective - performance is empirical. It feels like life compressed, accelerated. Yes, it's a lot of pressure, but there's no parallel I know of for the excitement of being in the heat of "battle."

Sure, I'm looking at it from a driver's perspective. But, regardless of how good the driver is, he's *driving* something - that something usually being a car. That car has to be designed, manufactured, developed, maintained and optimized, as well as being well driven. In the higher echelons of our

Perhaps you work at a successful company, or even run one. Or maybe you're still at school. Regardless, it's likely you're part of a team, like 99.9 percent of the planet, and you're wondering what makes a good race team? Well, without further ado...

Every good race team I've ever come across has had a strong leader. By strong, I don't mean dictatorial; I mean a person who is visible, communicative, inspiring, and embodies everything the team stands for. This person sets the tone and culture for the whole company and leaves no one in any doubt what the company's all about, what it's doing and where it's going. They live, act and breathe everything the team stands for, making the vision very clear.

Further, at a lower level, other "leaders"



**SEEN BOTH SIDES**

Beyond just driving, Gil de Ferran's experience of team dynamics derives from his owner/driver role with his own de Ferran Motorsports ALMS team (LEFT), and as sporting director at the BAR-Honda Formula 1 team.

## THERE'S ONLY "I" IN TEAM

"Every good race team I've ever come across has a strong leader," says Gil de Ferran. Driving for Roger Penske for four years in CART and the IndyCar Series (RIGHT), he got to observe one of the best in the business up close.



Paul Mounce/LAT

carry the same message and behave in the same way as the head honcho. Problems usually occur when there's a disconnect between these influential people, and the messages start to conflict.

Adam Smith (an 18th century Scot who kind of invented economics) postulated that humans are driven by self interest, and I agree. But the best teams are able to align those personal interests with team interest.

Take fear, for example. Some pressure to perform, which comes naturally in racing, is good; it keeps the mind sharp and alert. But fear of losing your job at every juncture chokes a team. Everyone goes into survival mode, becomes more concerned about looking good at every opportunity; the team is no longer the primary concern, survival is...

This next one seems obvious, but maybe it isn't? A clear understanding by each individual of how their personal contribution will affect a team and, similarly, understanding what everyone else is doing can totally affect team performance. It needs to be clear to all: Where are we going? What

are we doing? How and when are we doing it? And who's doing what? Forget slogans and speeches, it's day-to-day, face-to-face conversations and actions that count.

Like in the military (I think), the chain of command has to be clearly defined, with clarity on who makes which decision. In contrast to a top-down organization, where orders roll down the chain, the best race teams give room and a clear understanding of when and how individuals can contribute with their own ideas. It should be clear when it's the time to chat and brainstorm, and when it's time for heads-down action.

Yes, you must document things carefully, but the *real* knowledge and know-how of a team is usually contained within a few members, the "elders." Lose them and it's a completely different organization: accumulated knowledge and processes are gone; continuity and learning suffer, and performance suffers. Overlap the careers of brilliant elders, let them groom younger members, and a team continues to evolve.

Race teams suffer from the same issues

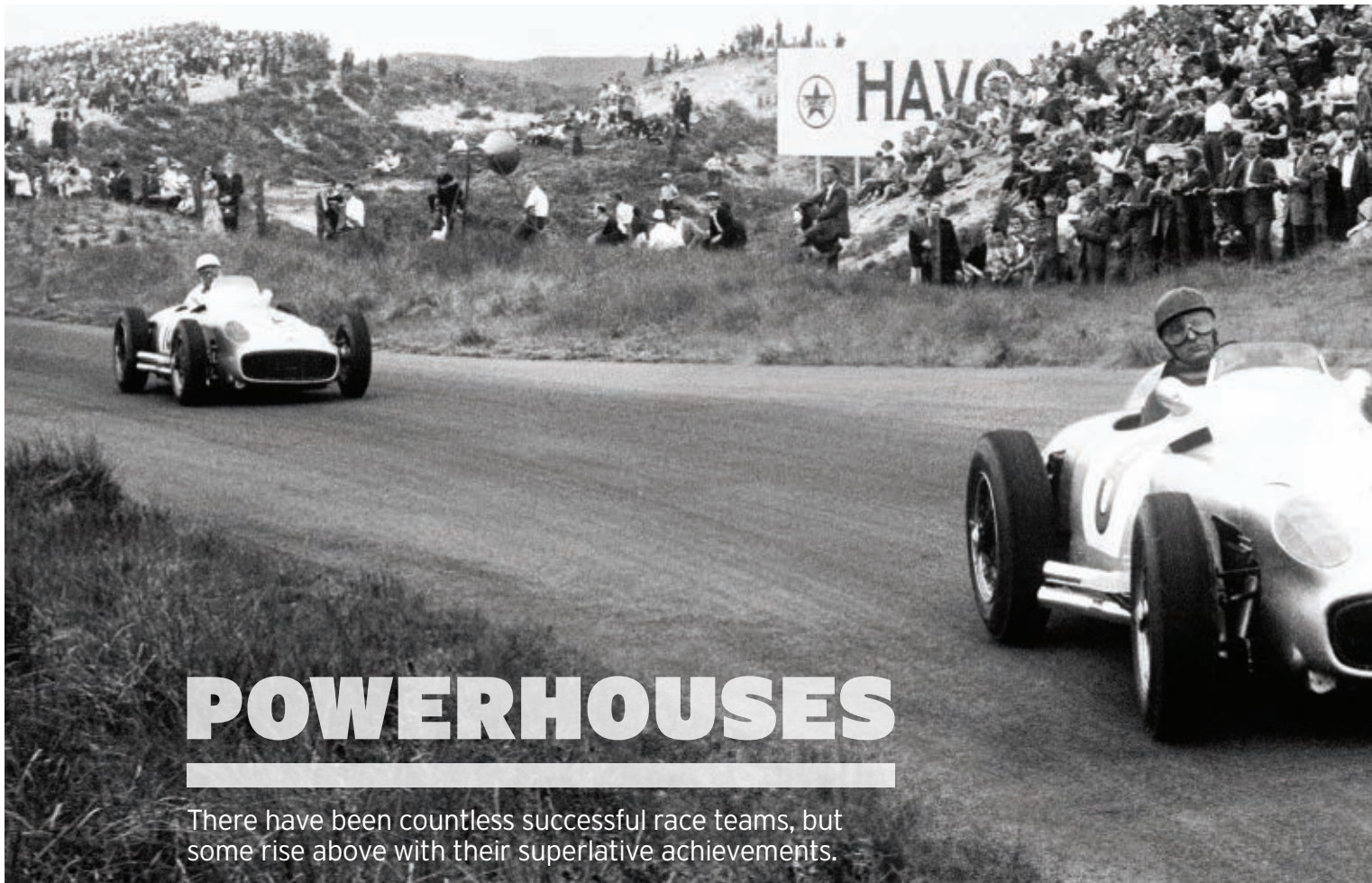
that every leading edge company has: Where's the next big idea coming from and who's generating it? A brilliant individual? A group effort? Where's that touch of genius?

There's no easy answer. I've seen success massively influenced by a single individual, and by well-tuned teams of people. Picking one thing which I believe is a critical common factor in all successful, creative initiatives, I'd say it's understanding the problem. You can't come up with a cool solution if you don't have the clear understanding of what you're trying to solve.

I promise I'll stop soon...

At the end of the day, it's simple: if every "I" is performing at a high level, you're good. Respect, motivation, engagement, attitude and energy is what counts on an individual level. If you don't have these, it's no go. But if you do have them throughout the team at a high level, you're off to the races. Or, better still, off to drink some of that creamy, non-alcoholic beverage they serve at a certain Midwestern town on Memorial Day.

And if you're wondering, it's served cold. ■



# POWERHOUSES

There have been countless successful race teams, but some rise above with their superlative achievements.

**P**owerhouse. The *RACER* office dictionary defines it as a group of people or an organization that has a lot of power, energy, strength and skill. Which is pretty much all successful race teams, really...

We wanted to narrow it down a little more and, while highly subjective, to look at successful teams in the context of who they beat, how long they were successful, and how they adapted to change and circumstance thrust upon them. From that, we determined a shortlist - our "powerhouse powerhouses," as it were - then argued some more and came up with our ultimate powerhouse.

Looking at the rest of the shortlist, it's an intriguing mixture of short-term dominators, long-term benchmarks and era-defining organizations that, due to fate or circumstance, come with a "What if?"

The Mercedes-Benz Formula 1 team of 1954-'55 is a short-term dominator that perfectly fits the "What if?" category. Running a partial season in '54, its W196 won four of six grands prix entered - not a bad warmup. All came for Juan Manuel Fangio, who'd started the year winning two GPs with Maserati. Cumulatively, it was

more than enough to give the Argentine ace his second F1 World Championship.

The '55 season was the one Mercedes had targeted to get *really* serious and, had Fangio and new signing Stirling Moss not suffered uncharacteristic transmission and engine failures while running 1-2 in Monaco, it would have swept all six GPs contested. Fangio duly collected his third F1 crown, thanks to four wins and one second-place.

**"The Mercedes F1 team of 1954-'55 is a short-term dominator that perfectly fits the 'What if?' category"**

With the German factory taking F1 racing to new levels with its technologically-advanced, near-bulletproof racecars, stellar driver lineup and deep-pockets approach to budgets and logistics, it certainly meets our powerhouse criteria. But following the '55 Le Mans disaster, Mercedes announced it would pull out of all racing at the end of the year, meaning we never got a chance to find out what heights the Silver Arrows might have reached in subsequent seasons. >



Marc Cowertz

**JOHN FORCE RACING**  
NHRA Funny Car  
1990-present

It took John Force a long time to become an overnight success. He made his first NHRA Funny Car final-round appearance in 1979, took a first win in '87, and unlocked his first championship in '90. Then the flood gates opened... Since then, only six titles *haven't* been won by John Force Racing drivers. JFR's current haul is 16 for Force (including 2013) and one apiece for Robert Hight and Tony Pedregon. And, of course, JFR led the 2014 points as we closed for press...



(MAIN) Juan Manuel Fangio leads Stirling Moss at the 1955 Dutch Grand Prix, the second of four consecutive 1-2 finishes for the Mercedes-Benz team that season.



**MERCEDES-BENZ**

Formula 1 World Championship  
1954-'55

Mercedes-Benz, the titans of pre-war grand prix racing, made a return to top-level open-wheel racing in the '54 Formula 1 World Championship (ABOVE). In just two seasons, the Silver Arrows won nine of 12 grands prix contested, with team leader Juan Manuel Fangio taking the 1954 and '55 Drivers' Championships. Its whole approach, from design and build, to driver choice, to logistics, and even marketing, became the blueprint for how a modern F1 team operates.



**J.W. AUTOMOTIVE**

World Sports car Championship  
1968-'71

John Weyer's J.W. Automotive Engineering existed before and after 1968-'71, but it was those four years when JWA earned its greatest successes and defined the team/manufacturer/sponsor model of going racing that still holds in much of top-line motorsports today. Gulf was the sponsor, Ford, then Porsche the manufacturer. Two Le Mans wins for JWA Ford GT40s in 1968-'69 were followed by numerous victories for Gulf Porsche 917s (although not Le Mans) as JWA raised the bar.



**McLAREN CARS**

Can-Am Challenge Cup  
1967-'71

Five consecutive Can-Am championships (Bruce McLaren, 1967, '69; Denny Hulme, 1968, '70; Peter Revson, 1971) only hint at the domination of the no-holds-barred Can-Am series by U.K.-based McLaren Cars. In that five-year period, it won an incredible 37 out of 43 races. After McLaren's death in mid 1970, the team's focus became compromised by commercial considerations (something Bruce would never allow), but still the mango-colored monsters delivered.



**TEAM PENSKE**

Indianapolis 500  
1972-present

Yes, multi-faceted Team Penske has earned multiple U.S. open-wheel, Trans-Am and Can-Am championships, as well as a NASCAR Sprint Cup title. It's even won a Formula 1 World Championship grand prix. But the heart and soul of this motorsports monolith is the Indianapolis 500. Its 15 wins there between 1972 and 2009 still make it the team to beat when it unloads for the Month of May. Four years winless at the Brickyard just makes Roger Penske's boys even hungrier.



**HENDRICK MOTORSPORTS**

NASCAR Sprint Cup Series  
1995-present

When Rick Hendrick dipped a toe in NASCAR in 1984, the sport was the domain of single-car teams. In '86, fielding two entries for Geoff Bodine and Tim Richmond, he embarked on a course that's since turned Cup racing into the domain of multi-car fleets. Jeff Gordon's '95 title was the beginning of HMS's ongoing domination, and 10 others have followed, including three more for Gordon and six in the last eight years for Jimmie Johnson.



McLaren's near-perfect winning record in 1988 came down to a great car/engine in the Honda-powered MP4/4 (ABOVE) and two incredible drivers in Ayrton Senna and Alain Prost (ABOVE RIGHT).



**McLAREN-HONDA**

Formula 1 World Championship 1988-'91

When Ayrton Senna joined McLaren in 1988, Honda came, too. The period of success that followed included the single-most dominant season in F1 history, when Senna and Prost won 15 of 16 grands prix between them. The move from turbo to normally-aspirated engines in '89 didn't faze the alliance, with Drivers' Championships for Senna in '88, '90 and '91 and Prost in '89. Four consecutive Constructors' crowns for McLaren merely confirmed the overwhelming level of dominance.



**ANSTED-THOMPSON RACING/A.J. FOYT**  
USAC Championship Car 1964

In a departure from the multi-season domination of many of our other contenders for the ultimate racing powerhouse, we nominate Ansted-Thompson Racing and driver A.J. Foyt for a stellar '64 USAC Championship. To win 10 of 13 races, on a mix of paved and dirt ovals, switching between a Watson roadster and Meskowski dirt car, was a huge achievement, capped by Foyt's second Indy 500 win (ABOVE) - the last by a roadster.

As long-term benchmarks, it's hard to argue against organizations such as John Force Racing in NHRA Funny Car drag racing and Team Penske at the Indy 500. Longevity in itself is no grounds for being called a powerhouse, but longevity *and* a high level of ongoing, frequent success. For JFR, that equates to 18 Funny Car titles in the last 24 years and, for Penske, 15 "500" wins since taking its first with Mark Donohue in 1972.

Yes, each has endured fallow periods - and, in the case of Team Penske, been forced to sit out several Indy 500s due to the schism in U.S. open-wheel racing that began in 1996 - yet each was able to bounce back and re-establish supremacy before a blip became a trend.

As noted, there's no science involved in choosing these powerhouse teams, and we'd be amazed if our list coincided with yours. Why not let us know the teams you feel are racing's ultimate powerhouses.

Let the heated debate begin... ■

**FOR OUR ULTIMATE POWERHOUSE SEE PAGE 26**

**JUDGED BY THE COMPANY YOU KEEP...**

Sure, it's subjective, but to be called a true powerhouse, it's as much about who you beat as what you achieve, *per se*.

Nine straight World Rally Championship titles between 2004-'12 for Citroen's Sebastien Loeb is a mind-blowing feat, but gets an asterisk because of what Loeb had to beat for most of those seasons - not a whole lot.

Had it occurred in the WRC's 1980s-'90s golden era, well...



**TARGET CHIP GANASSI RACING**

CART Indy car racing 1996-'99

Plenty of other championships have been earned by the various strands of Chip Ganassi's racing empire, but four straight CART titles by TCGR, 1996-'99, remains an astonishing sequence of success made even more so because they were earned by three different drivers, and all in an era when the depth of competition in the series was unequalled. Read more about the first 25 years of Target Chip Ganassi Racing, beginning page 36.

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# THE RED

When Ferrari reached a competitive nadir in 1992, plans were put in place that would eventually transform it into the most dominant team in Formula 1 history.

**WORDS** Adam Cooper | **MAIN IMAGE** LAT archive



**ULTIMATE POWERHOUSE**  
**FERRARI FORMULA 1, 1996-2006**  
THE SCHUMACHER/BRAWN/BYRNE/TODT ERA



Ferrari takes a 1-2 at the 2002 Italian Grand Prix. Michael Schumacher won five times at Monza, but this was one of two that Rubens Barrichello earned for the Scuderia, his two-stop strategy besting Schuey's one-stopper.



**2004: THE ULTIMATE YEAR**

Michael Schumacher's 13 grand prix victories in 2004 broke the record he'd set in '02 of 11 wins. Sebastian Vettel matched the feat in 2013, albeit with one more race to achieve it (19 to 18). The Rory Byrne-designed Ferrari F2004 is generally acknowledged to be the fastest F1 car ever made, with several of its lap records still unbroken.

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The recent departure of erstwhile Ferrari Formula 1 team boss Stefano Domenicali marked the end of an era, for he was the last key member of the “dream team” that achieved so much success with Michael Schumacher. Designer Rory Byrne remains linked to Maranello as a consultant, but otherwise all the major players have gone.

The Scuderia of the first half of the 2000s remains one of the most powerful machines that auto racing has ever seen. Indeed, it's hard to believe that its huge success grew out of an organization that had hit rock bottom just a few years previously.

The low point was in 1992, when Jean Alesi and Ivan Capelli struggled with the ungainly F92A. The Scuderia finished fourth in that year's World Championship with just 21 points, compared with the 164 of champion Williams. Time for a rethink...

The man charged with turning things around was the Scuderia's 1970s F1 team manager Luca di Montezemolo, who'd

been brought back to the Ferrari fold by Fiat boss Gianni Agnelli in 1991. At the time, the road car division was struggling and addressing that was his main focus.

But given the kudos it bestows on the whole Ferrari brand, the F1 operation was his other key challenge, and in an attempt to recreate an earlier “dream team” he briefly brought back his old pal Niki Lauda in a consultancy role. However, the crucial move was finding a new team principal.

Jean Todt made his name running Peugeot's rally efforts, and latterly its sports car program. The FIA canned the World Sportscar Championship in '93, leaving Le Mans as Peugeot's sole target. Todt was unable to convince the board to pursue a works F1 project, so when Ferrari came calling, he readily accepted. He arrived at Maranello in July '93, immediately after securing a second Le Mans win for Peugeot.

Meanwhile, in an attempt to jump start the moribund technical department, John



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**JEREZ 1997**

Leading by a single point heading in to the Jerez finale, Schumacher's cynical attempt to secure the '97 title by taking out rival Jacques Villeneuve in the race backfired. The Ferrari retired on the spot; the Williams driver finished third and took the title, and Schumacher was disqualified from the '97 championship - although his season-long results, including five victories, were allowed to stand.

Barnard was brought back as technical director after three years away. As with his previous tenure he was allowed to open a “satellite” design office in Surrey, England.

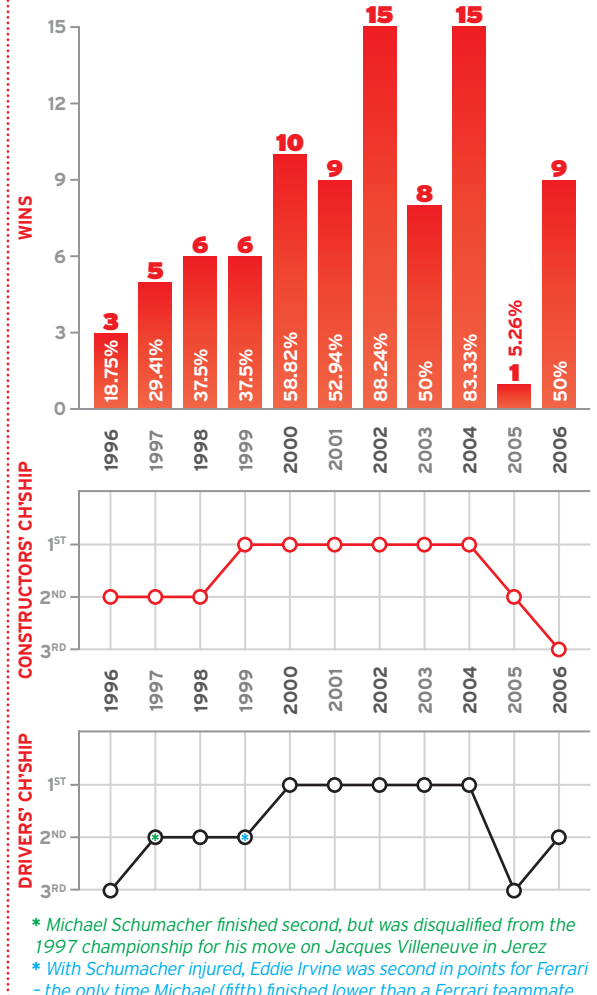
As Todt settled in, the team again finished a distant fourth in the '93 points. Keen to hire the best driver available, Todt made overtures to Ayrton Senna - as previous Ferrari bosses had also done. Indeed, Montezemolo recently stated that Senna would indeed have ended his F1 career with Ferrari, but any



(TOP) The '96 Belgian GP was the second of Schumacher's three wins that year. (ABOVE) An F1 Drivers' Championship delivered at last: Schumacher and Todt celebrate in 2000.

**THE YEARS OF THE HORSE**

Momentum was building in the transitional years of 1996 and '97, but it was the introduction of the first Brawn/Byrne Ferrari in 1998 that truly started the team's "golden age."



fledgling plans to lure the Brazilian to the Prancing Horse ended on May 1, 1994.

In that '94 season, Gerhard Berger scored a fortunate win in Germany and Ferrari finished third in the points, albeit some way behind Benetton and Williams.

At that point, some key figures who'd play an important role in the future were already on board, including chief mechanic Nigel Stepney, an ex-Lotus/Benetton man whose brief was to introduce "British" thinking to the shop floor. Sadly, Stepney died in a road traffic accident just days before this issue of RACER went to press.

Always loyal to trusted pals, Todt had also hired former Peugeot engine chief Gilles Simon to work on a new V10, which would be mandatory for the '96 season.

Additionally, a savvy business graduate called Stefano Domenicali had quickly been moved from the road car dept. to the race team, where he was put in charge of human resources and sponsor liaison.

**"I said a key element would be to get Rory [Byrne] on board and Ferrari said, 'We've already done that!'"**

**ROSS BRAWN**

But in the summer of 1995 Todt made the move that would transform Ferrari's fortunes. He'd been on nodding terms with '94 World Champion Michael Schumacher since their sports car days, when the German drove for Mercedes. The chance to join Ferrari was too good to turn down, and Michael signed up for 1996 and beyond. Alesi was dropped, while the plan was for Berger to stay, providing valuable continuity. However, the Austrian didn't want to be a supporting act, and duly jumped ship, joining Alesi at Benetton. Todt had to cast around for a driver who could work alongside Michael without rocking

the boat, and he settled on Eddie Irvine.

By the time he arrived at Ferrari, Schumacher was a double F1 World Champion, and many wondered why he would leave Benetton to join an organization that had underperformed for so long and seemed destined to be permanently in a state of political turmoil.

The skeptics appeared to be proved right when Barnard's F310 disappointed at the start of 1996, plagued with reliability problems. Crucially, Schumacher earned a brilliant wet win in the seventh race of the season in Barcelona, which took the pressure off everyone, including Barnard.

At the previous race in Monaco, Todt had set the wheels in motion for the next major step. Having hired Schumacher he now wanted the other men who'd made Benetton so successful - technical director Ross Brawn and chief designer Rory Byrne.

"I'd had a tentative approach from Michael, but nothing serious," says Brawn. >



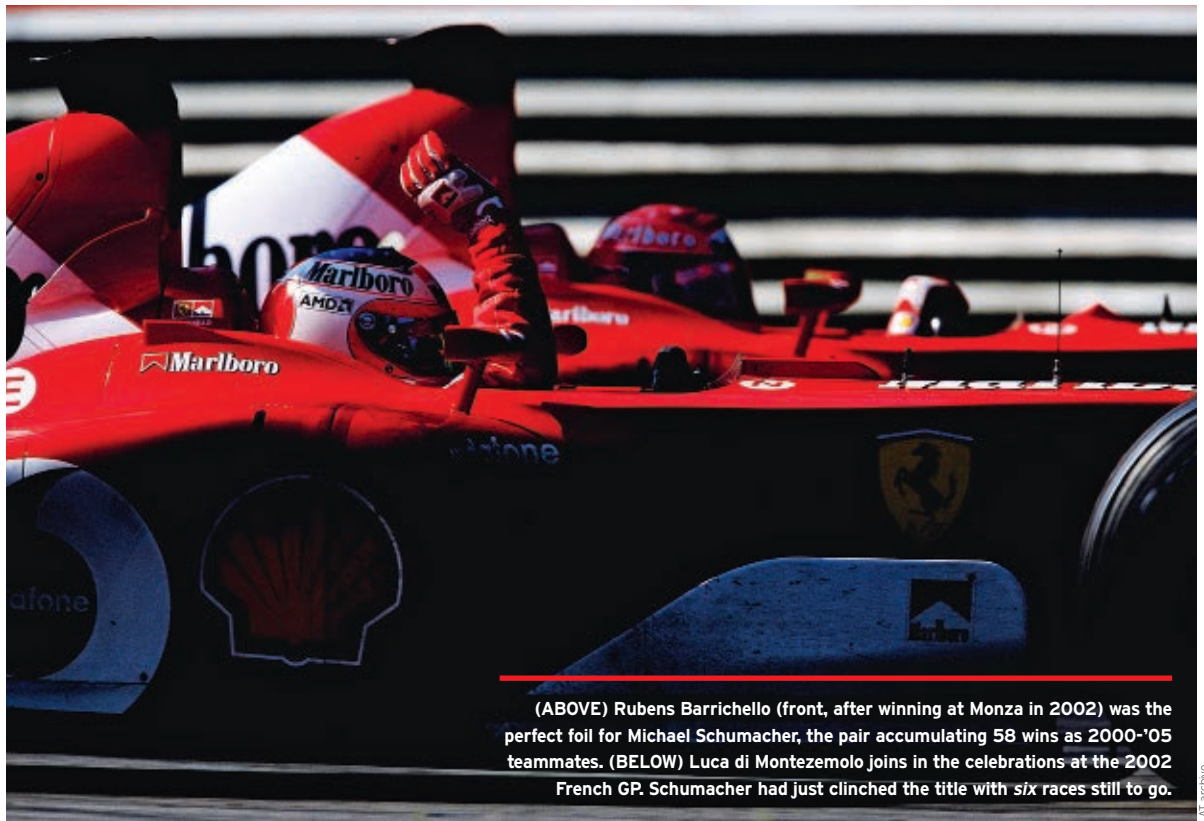
**ROSS BRAWN**  
 As technical director of Benetton, Ross Brawn was a key player in Michael Schumacher's first two World Championships in 1994 and '95, as well as the five earned at Ferrari.



Steve Etherington/LAT

**JEAN TODT**

After resigning from the Ferrari board in March 2009, Todt became the FIA President the following October. Unopposed, the Frenchman was voted in for a second term in December 2013.



(ABOVE) Rubens Barrichello (front, after winning at Monza in 2002) was the perfect foil for Michael Schumacher, the pair accumulating 58 wins as 2000-'05 teammates. (BELOW) Luca di Montezemolo joins in the celebrations at the 2002 French GP. Schumacher had just clinched the title with six races still to go.

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**EDDIE IRVINE GOES CLOSE IN 1999**

When Michael Schumacher broke his leg in the 1999 British Grand Prix, the pressure was on his Ferrari teammate Eddie Irvine to step up and deliver.

Three wins from seven races put him four points ahead of McLaren's Mika Hakkinen going into the Suzuka finale.

But Irvine could manage only third in Japan, behind winner Hakkinen and the freshly-returned Schumacher, missing out on Ferrari's first Drivers' Championship since 1979 by just two points...



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"At that stage, I think Michael was keen to pursue a relationship with John Barnard. But after working with him, he concluded that they didn't quite see things the same way. He had a lot of respect for John, but it wasn't the way he wanted to do things.

"I was approached just before Monaco '96, and then I met with Jean at Monaco, and started to put the deal together. I said one of the key elements would be to get Rory on board and Ferrari said, 'We've already done that!' I went back to Benetton, spoke to Rory and he said, 'Yeah, I've been approached, and if you do it I'm doing it...'"

Although only 52, Byrne had been on the verge of retiring for a life of scuba diving in Thailand, but the challenge of Ferrari was irresistible. He and Brawn duly arrived at Maranello at the end of '96, just as Barnard's F310B was being completed.

Barnard had briefly overlapped with Brawn and Byrne at Benetton, and would do so again at Ferrari. But it was always going to be a temporary arrangement, and when he left in early 1997 he gained ownership of the UK design office. Todt had always hated the idea of having a British base. It had never really worked, although it did provide visiting Italian engineers with a valuable education.

Things began to come together in '97, as Ross 'n' Rory settled in and Schumacher's tenacity drove everything forward.

Demicali became team manager and, in effect, Todt's right-hand man, while Stepney



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**"Just before I joined in 1996, there was almost a lynching party for Jean [Todt]. I think Michael did protect him"**

**ROSS BRAWN**

was a catalyst for bullet-proof reliability.

Schumacher very nearly won that year's World Championship, missing out after his controversial collision with Jacques Villeneuve in the Jerez finale.

It was a difficult time, but Todt and Schumacher stuck together, as they would the next season, when Ferrari narrowly lost a straight fight with Mika Hakkinen and McLaren. The pressure from above on Todt was huge, but the star driver urged patience.

"Just before I joined in 1996, there was almost a lynching party for Jean," says Brawn. "I think Michael did protect him. He said the only way this is going to work is if

Jean's in charge. If Michael hadn't been strong, or had changed his opinion, Jean could have suffered. It was fortunate that Michael had the resolve to stick by Jean and make sure that he did stay."

But for a crash at Silverstone in which he broke a leg, Schumacher would have taken the '99 crown. Irvine took up the reins and came close, while the constructors' title provided some compensation. The Jaguar-bound Irvine was then replaced by Rubens Barrichello for 2000.

Schumacher won the first three races of 2000, and this time there were no stumbles. At the fifth attempt, he and Ferrari finally secured a drivers' title for the Prancing Horse for the first time since 1979. It would be followed by four more in quick succession. In 2002 and '04, the team was utterly dominant, winning 15 races in each season (see page 27).

One key factor was the close bond the team forged with tire company Bridgestone. They first hooked up in '99, when the Japanese company was briefly F1's sole supplier. A burgeoning relationship paid dividends when Michelin arrived in 2001 and an intense tire war began. Bridgestone loved Ferrari and worshipped Schumacher, so in the days of unregulated testing at Fiorano and Mugello, the sky was the limit. Other main customers jumped ship one by one, eventually leaving mighty Bridgestone working solely for Ferrari, as well as >



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**RORY BYRNE**

Having designed Toleman's Formula 1 cars, Byrne remained with the team as it transitioned into Benetton. Like Ross Brawn, the South African is a key player in all seven of Michael Schumacher's F1 World Championships, leading the design team on the two title-winning Benettons and five Ferraris. He remains a Ferrari consultant.



(ABOVE) Thanks to Nigel Stepney, off-track performance - bullet-proof reliability and super-quick pit stops - was a major factor in Ferrari's golden era. (BELOW) Schumacher and Ross Brawn confer.

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**BARRICHELLO: THE ULTIMATE NUMBER TWO?**

Remove Michael Schumacher from the results during Rubens Barrichello's 2000-'05 tenure as his Ferrari teammate and the Brazilian would have 19 more grands prix wins and a couple of F1 World Championships (2002 and '04).

As it is, Rubens' nine victories, 46 other podiums and two runner-up points finishes is testimony to the dominance of Ferrari in that early noughties sweet spot. In the same period, Schumacher took 49 GP wins and five championships.



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supplying a couple of backmarker teams. It all went wrong in 2005 when, for one year only, F1 tires had to do a whole race distance. Ferrari struggled, winning only at Indianapolis after the Michelin runners pulled out. But it kept faith with Bridgestone. In '06 it was almost business as usual, as Schumacher came within an ace of beating Renault's Fernando Alonso to the title.

But that was the beginning of the end of the dream team. Sensing Ferrari's top brass was targeting McLaren's Kimi Raikkonen as his successor, Schumacher pre-empted any Machiavellian moves by retiring at the end of the season and moving into a loosely defined consultancy role; Brawn went into temporary retirement and, for '07, Todt took a more senior role at Ferrari. That year the team was rocked by the "Spygate" scandal, which revolved around Stepney and accusations that he'd supplied a dossier of confidential data to McLaren.

Meanwhile, under new boss Domenicali, Ferrari still had some winning momentum, even after the tire war ended and Bridgestone had to supply every team once again. Raikkonen took a drivers' title in 2007 by the narrowest of margins, and Felipe Massa very nearly emulated him in '08. Then things took a turn for the worse, and despite the arrival of Fernando Alonso in 2010 - a decade after the Spaniard spurned an offer from Todt to become the team's protégé - Ferrari has been



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**"Money wasn't an issue, so Jean could go after whatever Michael wanted to make the car faster"**

**RUBENS BARRICHELLO**

struggling to find its mojo ever since. "It was a special time," says Brawn of the golden era. "It was the chemistry of a number of people who did genuinely look after each other and worked together for the greater interest. There was a group of five or six like-minded people who just formed a very strong bond and supported each other in what was required and needed. It's not very often you get that. I think one of the difficulties for Stefano was he never really had that group, that depth and strength around him that Jean had. He was fighting a battle somewhat by himself, whereas we were fighting a battle

together. It made it that much easier." Barrichello drove for Ferrari until the end of 2005, witnessing the "red machine" at the peak of its potency. Although the Brazilian won nine Grands Prix with the Scuderia and twice finished runner-up in the final points, he doesn't deny that it was a team built around the Todt-Schumacher axis.

"Jean and Michael created a strong relationship. In the end, that created some problems and jealousy on the team, but it was what made us so strong. Money wasn't an issue, so Jean could go after whatever Michael wanted to make the car faster. It was easier for me to convince Michael that we needed this or that instead of telling Jean directly, because he was easier to get!

"In Jean we had a good leader - let's forget about the fact that sometimes there was just one direction that the team went in to win! He was excellent at delegating. Same with Ross, who was able to say, 'I know aerodynamics and the mechanical stuff, but I'm not going to be able to do my job if I do everything, so I'm going to contract this guy to do this and do that.'

"In Michael and I, you had two drivers who could do two things really well, and the division was good," he adds. "I was always on the case with testing tires, and he was always on the case with electronics.

"Sure, I wish I'd won more, but in terms of working with those people, Ferrari was still one of the best times I had in my life." ■



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**THINK SMART. ACT FAST. FLEX YOUR BUSINESS.**

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Global IT Innovator

It's a jungle out there, as Jacques Villeneuve discovered at BAR. Even the Honda engine supply acquired from 2000 wasn't enough to make the team into winners.



# OVERAMBITIOUS UNDERACHIEVERS

In 1999, British American Racing appeared to have all that was necessary for F1 glory. Then the season started...

To be fair, there were some ingredients in the BAR mix that had potential. Driver Jacques Villeneuve had won the 1997 World Championship at Williams; the BAR001 was designed and built by Reynard, and the funding was huge, thanks to British American Tobacco.

But the potential to win a grand prix in its debut season, as trumpeted by the principals Craig Pollock, Adrian Reynard and Rick Gorne? Nope... Not when the team had been built from the embers of Tyrrell and the car was powered by a two-year-old Renault engine run by Supertec. The season ended with McLaren and



**SPLIT PERSONALITY**  
When the FIA refused to allow different cigarette brands' liveries on BAR's two cars, this was the memorable "solution."

Ferrari having scored 128 and 124 points respectively while BAR earned zero. The car was reasonably quick - several times Villeneuve qualified in the top 10 - but rarely finished. Jacques and teammates Ricardo Zonta/Mika Salo saw the checkered flag just 11 times in 32 combined starts.

Results improved in 2000 following a switch to Honda engines and, in '01, JV finished on the podium twice. But as the pace dwindled again in '02, Pollock was replaced by David Richards of Prodrive. In '04, BAR finished a distant second in the Constructors' Championship, but at the end of '05 the team was bought by Honda.

## NOT EVEN A GOOD IDEA AT THE TIME

The "palace coup" at Ferrari at the end of 1961 saw several key people leave, and meant World Champion Phil Hill's Ferrari 156 went undeveloped in '62. So he left to join his former colleagues at their Automobili Turismo e Sport (ATS) team the



following year. Unfortunately, Tipo 100 (ABOVE) was unreliable and very, very slow. Cue the end of ATS in F1.

Mind you, at least the team lasted for a season. Mastercard Lola (BELOW) didn't even complete a race weekend. The Ford-powered T97/30s qualified more than 11sec off the pace in the 1997 opener. They weren't seen again.



## IMPROVED, BUT...

The team's debut was Monza in 1985, where Jones qualified 10sec off pole. At the same venue a year later, the gap was down to four seconds, but by then the team was short of dollars.



## THE LAST U.S. TEAM IN F1 PAIN IN THE HAAS

Carl Haas's attempted expansion into F1 failed within two years, despite funding from Beatrice Foods, power (eventually) by Ford, cars designed by Neil Oatley and engineered by Ross Brawn, and "unretired" 1980 champ Alan Jones at the wheel.

The car, the THL1, was meant to debut at the start of 1985, but didn't appear until round 12...and the Ford engine *still* wasn't ready, necessitating the use of a Hart unit. With the Ford V6 turbo in the THL2s, the team made progress in '86, but by the time Jones and Patrick Tambay had finished fourth and fifth in the Austrian GP, the Beatrice money had dried up. The team folded at year's end.



**CONGRATULATIONS TO  
TARGET CHIP GANASSI RACING  
FOR 25 YEARS.**

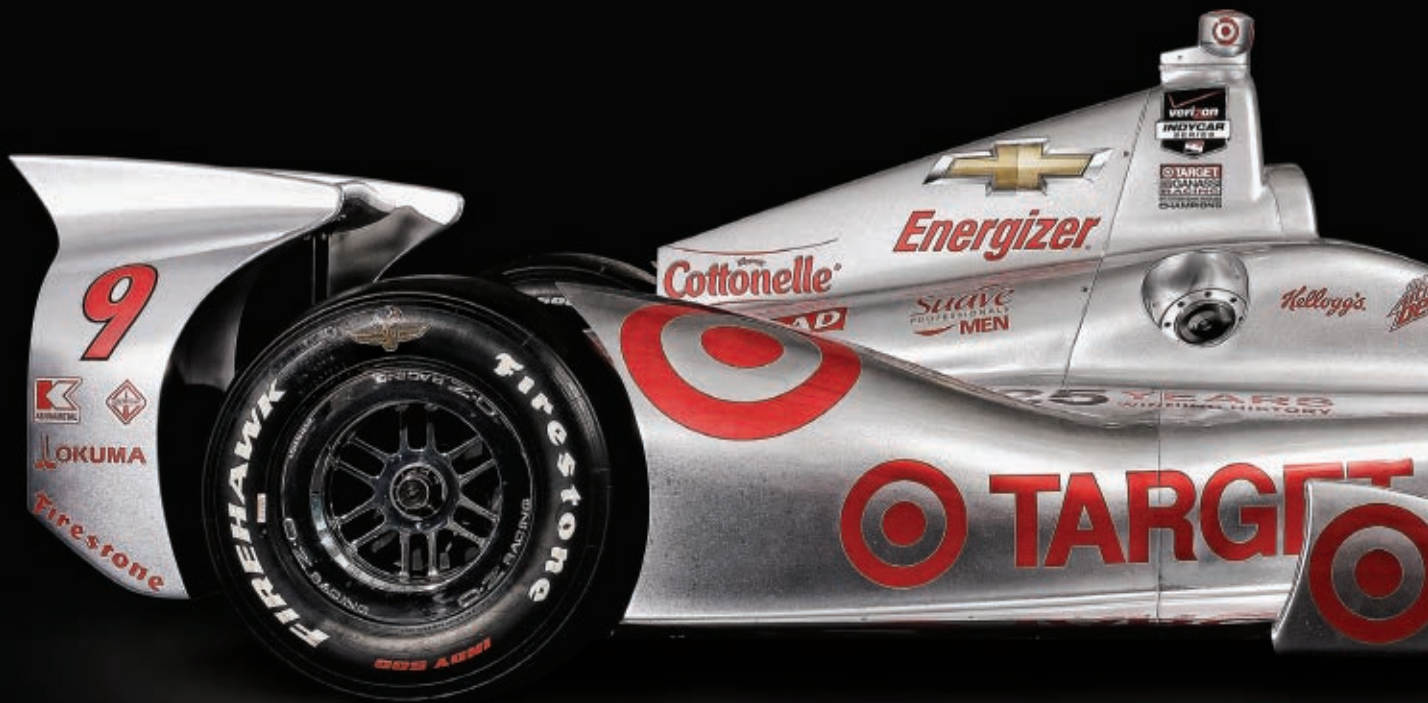
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TARGET

# SILVER & GOALS

TARGET  
CHIP GANASSI  
RACING  
2013 INDYCAR SERIES  
CHAMPIONS  
25  
YEARS  
WINNING HISTORY



Scott Dixon and Tony Kanaan swap red for silver when they race in the 98th Indianapolis 500 on May 25. Later that day, NASCAR Sprint Cup rookie Kyle Larson also gets the metallic treatment for the Coca-Cola 600 in Charlotte. And it's all to celebrate 25 years of Target Chip Ganassi Racing.

Given the transient nature of sports sponsorships, particularly in racing, it's remarkable that the Target-Ganassi relationship has endured for so long. Or maybe it isn't so remarkable... From the outset in 1990, as Ganassi built his team into the powerhouse it's become, theirs was always a true partnership, and remains so.

Michael Andretti, who scored TCGR's first victory in 1994, and whose team now competes against his former employer, says: "Even back then, I could see signs that Chip was building a championship-winning team. He took it very seriously, made a lot of good decisions and he had that racer's attitude. He was never a guy who'd be content with the occasional win. I'd say Chip was always going to be part of the racing elite."

**WORDS** David Malsher | **IMAGE** Michael Levitt/LAT

#### SILVER ANNIVERSARY

It's going to take a bit of getting used to, seeing Target Chip Ganassi Racing's pair of Dallara-Chevrolet DW12s running in silver on Memorial Day weekend. But with 2008 Indy 500 winner Scott Dixon and last year's victor Tony Kanaan in the cockpits, expect to see silver going for gold.





**MICHAEL ANDRETTI**

**At Target Chip Ganassi Racing for just one year, 1994, but scored its (and Reynard's) first two victories.**

**BEGINNING WINNING**

I've got to thank Chip, because I was coming back from the toughest year of my career, with my morale almost destroyed in F1, and he gave me an opportunity to rebuild my confidence. Winning in our first race together, and giving Reynard a victory in its first Indy car race, was a proud moment.

Thereafter, reality set in - we were quick at some places and completely out to lunch at other times. But it was a brand new chassis design, so there were no data sheets from previous years to work off and I think struggling in practice was to be expected. The important thing was that the team itself was really strong: they'd make good changes overnight so we always made progress in the races.

It was tough to up and leave after just one year; Chip wanted me to stay, and I was tempted. If I could have persuaded my old engineer Pete Gibbons to leave Newman/Haas and join Ganassi, I might have stayed...



Curb-hopping in qualifying and bouncing off a wall in its debut, Michael proved the Reynard 941's strength in every sense.



**FRESH START**

Michael Andretti took Target Chip Ganassi Racing's first win at Surfers Paradise, Australia, in 1994. Mid-season in Toronto, he added a second.

If you want to break down Target Chip Ganassi Racing's winning ethos to its smallest verbal component, it's the word "we" that defines many of the greatest teams. Some racers use "we" when they mean "I" but when TCGR long-timer Scott Dixon hits Victory Lane and says, "We took the decision to..." that's exactly what he means: a *team* effort won the race.

That sounds like a tiny detail, but it's important: Chip Ganassi has never stood for any team member implying they had a bigger role to play in success than anyone else. This TCGR culture, handed down from on high, promotes and nurtures team pride over any individual ego.

Dixon, reigning IndyCar champion, is a modest man, a natural fit for this kind of

**"It's Chip, the management and the engineers who've allowed me to do what I love up at the front of the field"**

**SCOTT DIXON**

environment, and he agrees it's important that everyone's effort is acknowledged.

"I love my job," he says, "but it's Chip, the management and the engineers who've allowed me to do what I love doing up at the front of the field. Occasionally I've had to carry a bad car to a good result, but there are times when I've made a mistake and thrown a good car in the wall. We all depend on each other to do a good job

**TCGR TIMELINE**

**A FIRST QUARTER CENTURY**

It doesn't feel like only yesterday that Target Chip Ganassi Racing first hit the track...but it doesn't seem like 25 years ago, either. The team's success in that time frame has been something other teams might only dream of, and it still shows no signs of slowing down...

Images **LAT**  
Illustrations **Paul Laguette**

**1990**

Owner Chip Ganassi partners with Target to launch a one-car CART team. Driver **Eddie Cheever** earns podiums in Detroit and Toronto and finishes eighth in the Indy 500.



**1993**

Target Chip Ganassi Racing's **Arie Luyendyk** takes the Indy 500 pole and finishes second in the race. Two more podiums help the Dutchman to eighth in the final CART points.





AP Photo/Mark Duncan



David Taylor/Alseport

Pascal Ronckau/Getty Images

or we're not going to win. So if we do win, everyone deserves the credit."

Dixon, of course, has only seen TCGR in its current form, long after it became a title-winning machine, but there were some inevitable early struggles. Yet one of those was emphatically not sponsorship: Chip convinced a non-racing brand that what was effectively a start-up team had the potential to be a winner. It's probably too complicated to explain the deal that followed Ganassi's decision to set up his own team after successful years at Patrick Racing, but the result was that his car for 1990 was already fully funded...

"So I was able to go to Target and offer branding on our car for free," explains Ganassi, "but I told them I'd need to know

by June 1 whether they were in for another year. Well, they came to the Indianapolis 500, loved it, and signed up."

Over TCGR's first three seasons, ex-Formula 1 racer Eddie Cheever scored some podiums and finished each year in the top 10 in final points. But Chip was aware his team needed to make the next step.

"Cheever was a road racer, primarily," he says, "and we needed someone good on ovals, too. We got Arie Luyendyk, and at Indy in '93 we took pole and finished second. But the other thing holding us back was running one car: you can't make real progress with only one set of data coming in.

"So when we hired Michael Andretti, we also hired Mauricio Gugelmin. And bang! Michael won right out of the box, despite >



Tim/LAT

**JIMMY VASSER**

Scored Ganassi's first Indy car title in '96. Took nine wins and 16 other podiums in six years at TCGR.

**THE FIRST CHAMPION**

When Chip switched to Honda and Firestone, suddenly he had The Package; I won four of the first six races in '96, and that fast start was what my championship was built on.

I won a few races after my title year, but not as many as my teammates. Once Zanardi was on a roll, I got pummelled for two-and-a-half years, and when he went off to F1, I thought, "Thank God; I'm never gonna have another teammate like that..." Then Chip hired some snot-nosed Colombian who was probably even faster! Tough few years there...

Chip was OK through my difficult times, but when Juan left for F1, I was let go at the same time and we were replaced by rookies, which didn't work out. One day I remember Chip growled to me: "I really hate to admit this, but I should have kept you and just brought in one rookie..."



Michael Leitz/LAT

Vasser had ups and downs, but Chip was loyal to his first champion and he's TCGR's second longest-serving driver.

**1994**

On his TCGR debut, **Michael Andretti** delivers the team's first race victory, leading from lights to flag in the CART season opener in Surfers Paradise, Australia. Andretti wins again on the streets of Toronto and finishes fourth in the final points.

TCGR gave Reynard a debut CART win with its 94I (BELOW) and would take four CART titles with Reynard-built cars (1996-'99).



**1996**

**Jimmy Vasser** earns TCGR its first CART championship. Rookie **Alex Zanardi** is third in the final points.



**1997**

TCGR takes a second consecutive CART title, courtesy of five-time race winner **Alex Zanardi**. Defending champ **Jimmy Vasser** finishes third overall.





Ann Miler Carr/AP/Getty Images

it being the first Indy car race for Reynard. We were sorry to lose Michael at the end of the year; it left us having to rebuild."

But he did so. Jimmy Vasser and Bryan Herta were the drivers in 1995, but already Ganassi was looking further down the road regarding equipment; at season's end, he swapped Ford engines for Hondas, and Goodyear tires for Firestone. This far-sightedness has been a recurring theme in Target Chip Ganassi Racing history.

"I wouldn't particularly call it far-sighted," says Chip of his moves to put together the combination that dominated the late '90s CART scene. "We'd switched from Lola to Reynard because I felt we'd never get the latest, greatest parts from Lola when Carl Haas - a major rival on track - was Lola's U.S. importer. That was just logic.

"The Firestone deal was gut instinct - with its rich heritage in Indy car racing, it would only be a matter of time before it was at least a match for Goodyear. And Honda...well, look at its success in Formula 1 with Williams and then McLaren. Honda doesn't enter any series just to be



LAT archive

(ABOVE) Montoya and TCGR dominated the 2000 Indy 500, despite unfamiliarity with the IndyCar Series. (LEFT) Zanardi sprays the bubbly at a future Ganassi star, Dario Franchitti.

part of the scenery. So again, that move just seemed a logical one."

And hiring Alex Zanardi to partner Vasser? "That was on the recommendation of Malcolm Oastler, Reynard designer at the time," says Chip. "He was telling me about the Formula 3000 race at Pau [in 1991] when there was only 20 minutes of practice before they went straight into qualifying, and this Zanardi guy who'd never seen the place before went and got pole. I thought, 'That's my kind of guy!'"

By logic, inspiration and advice, Target Chip Ganassi Racing hit the big time with four straight championships: Vasser ->



Getty Images

## ALEX ZANARDI

Won the 1997 and '98 CART Indy car titles, and scored 15 wins across his three seasons at TCGR.

### CHIP'S CHARGER

It was all about being in the right place at the right time. I was looking for a job, Chip was looking for a driver and his organization had everything in place to perform. I got the best car in the field without knowing it beforehand! And having Morris Nunn as my race engineer was fantastic, plus I had the best pit crew. It was the perfect situation.

I also couldn't have asked for a better teammate than Jimmy [Vasser]. He always told me the truth and helped me so much on ovals. It takes time to learn oval racing; you have to use your head and not your heart, and at first it's hard to imagine sustaining those speeds, but once you have some confidence, it's fun.

Morris taught me so much. We never got tired of talking about the car and how to make it better. It was an amazing feeling being part of such a great team like Ganassi.



Michael Levin/LAT

Odd stat: in his second title year, 1998, AZ scored zero poles, yet led more laps than anyone else and won seven races!

### 1998

Alex Zanardi does it again, delivering TCGR a third consecutive CART title with his seven-win season. Three wins for Jimmy Vasser give the team a 1-2 in the final points.



### 1999

Rookie Juan Pablo Montoya earns TCGR's fourth consecutive title. He finishes tied on points with future TCGR star Dario Franchitti, but takes it with more wins (seven to three).



### 2000

In addition to CART, TCGR adds the IndyCar Series' flagship race, the Indianapolis 500, to its 2000 schedule. Juan Pablo Montoya starts second and leads 167 of the 200 laps to earn a dominant victory. He's the first rookie winner since Graham Hill in 1966.



Montoya's rookie Indy 500 win (LEFT) came at the wheel of a G-Force-Oldsmobile (BELOW). His teammate, Jimmy Vasser, finished seventh.



# 25 Years Strong



It's been a quarter of a century since Chip Ganassi Racing was started. Target has been a sponsor ever since. We're proud to be in such great company, with a lasting legacy of collaboration and innovation. Thanks for showing the power of working together.



Beechcraft

Hawker



**TEXTRON**



**JUAN PABLO MONTOYA**

Won 11 races for Ganassi in two years, scooping the 1999 CART title and the 2000 Indy 500.

**THE SUPER ROOKIE**

I was a huge fan of Alex Zanardi, so when I took over from him I knew what to expect and what was expected of me. It was big pressure, but I was thrilled to drive the car. The next good feeling was when I felt I was living up to Chip's expectation of me.

It was a strong team. Ganassi had a lot of experience and data with the Reynard chassis and so the car already drove pretty well. At first the engineers were asking me, "Do you need this, do you need that?" and I was like, "Meah, it's fine, I'll drive it."

I had a good working relationship with Chip where we could both say what we thought, good or bad, and maybe that's why it continued after I went to F1: we'd speak three or four times a year. When I called him that summer in 2006, it was just to say "Hi," and within that conversation he offered me a chance in NASCAR.



Montoya went one better than Alex Zanardi, nailing the CART Indy car title in his rookie season of 1999.



**EIGHT-YEAR WAIT**

The gap between Ganassi's first and second Indy wins was long. But following Dixon's triumph (ABOVE) in 2008, it added two more in four years.

Zanardi-Zanardi-Juan Pablo Montoya. Another major switch from Reynard-Honda to Lola-Toyota for 2000 ended the title run - although the combo was quick and Montoya led the most laps by far that year - but the high point was the trip to Indianapolis Motor Speedway. A CART team running to IRL IndyCar Series rules with a totally different chassis/engine combo could have been made to look foolish; instead, it looked dominant.

At season's end, it was Montoya's turn to head off to Formula 1, and Ganassi was also casting his net beyond U.S. open-wheel, buying an 80 percent stake in Felix Sabates' NASCAR team. Later, sports cars would be added to the Chip Ganassi Racing portfolio, too - with phenomenal success.

**"Entering different series was to ensure our livelihoods would be in racing - my passion, my only business"**

**CHIP GANASSI**



**2002**

Partnering with Felix Sabates, Target Chip Ganassi Racing enters the NASCAR Sprint Cup Series. Driver **Jimmy Spencer** takes two top-5 finishes in the team's debut campaign.



**2003**

**Scott Dixon** wins TCGR's first IndyCar Series title. Highlight of his season is leading all 206 laps at Richmond International Raceway (BELOW).

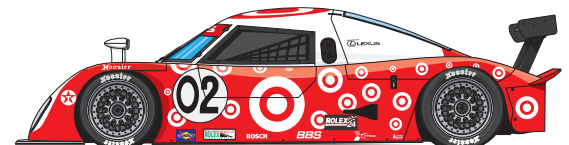


**2006**

**Scott Dixon, Dan Wheldon** and **Casey Mears** give TCGR a first victory in the Rolex 24 at Daytona, one of sports car racing's marquee events.



TCGR's winning Riley-Lexus MkX1 (BELOW) notched up 2,613.38 miles on Daytona's 3.56-mile road course.





Brian Cochran/LAT

**HEAD TO HEAD: TARGET CHIP**

**GANASSI RACING vs. TEAM PENSKE**

Since Ganassi's debut in 1990, it has had a clear edge in terms of Indy car titles earned, but Team Penske has outscored TCGR in the Indianapolis 500.

**OPEN-WHEEL CH'SHIPS**

**10** (4 CART; 6 IndyCar)

**4** (3 CART; 1 IndyCar)

**INDY 500 WINS**

**4**

**8**

"Well, ever since I started in Indy cars in 1982, there were people running around saying it's on shaky ground, that its future is tenuous. And occasionally it did seem that way. So entering different series was a way of ensuring our livelihoods would be in racing - my passion, but also my only business; this is all I do."

And so, detecting which way the wind was blowing in the U.S. open-wheel war, TCGR left CART for the IRL's IndyCar Series, taking with it Scott Dixon. The quiet New Zealander, a road racer by heritage, thus joined an all-oval series, yet promptly won the title at his first attempt! Following the 2008 U.S. open-wheel racing merger, which resulted in a single IndyCar Series, both his original and more recently acquired skill >



Walt Kuhn/LAT

**SCOTT DIXON**

**Three-time champ ('03, '08, '13) and '08 Indy 500 winner. Now in his 13th season with Ganassi.**

**GANASSI'S GOLDEN BOY**

I like Chip's attitude as a racer. As you go through categories, you sometimes encounter team owners who don't seem to have enough fight in them or the determination. But Chip cares; one bad practice session and he wants an explanation!

I know that sounds as if he's a tough boss, but actually I love that: I want to drive for someone whose will to win is the same as mine. And you only need to look at the team's record - championships, Indy 500s, Daytona 500s, Rolex 24s - to realize that Chip's way of doing things is definitely the right way if you want to be a consistent winner.

Well, I want to be part of that and I think we've achieved a lot together... although when we've had bad years, like in 2004 and '05, I was glad we had a contract that got me through! Despite all the winning Chip's done already, the desire to do more and stay on top just hasn't diminished.



Walt Kuhn/LAT

Three wins and five runner-up finishes brought Dixon his first Indy car title in 2003, using a G-Force Panoz-Toyota.

**2008**

**Scott Dixon** delivers TCGR its first Indy 500/IndyCar Series title double. The Kiwi's teammate, **Dan Wheldon**, finishes fourth in the final points standings.



**2009**

**Dario Franchitti** joins TCGR's IndyCar Series lineup and immediately delivers its seventh open-wheel championship.



**2010**

In a success-packed season even by the standards of Target and Chip Ganassi Racing, **Dario Franchitti** earns an Indy 500 (BELOW LEFT)/IndyCar Series title double, **Juan Pablo Montoya** gives Target a first win in NASCAR with victory at the Watkins Glen road course, and **Chip Ganassi** becomes the first owner to win the Indy 500 and the Daytona 500 (courtesy of **Jamie McMurray**) in the same year.



After success in open-wheel, Montoya showed his versatility when he took his Chevy Impala (BELOW) to a Sprint Cup win.





Michael Levitz/LAT

sets have been called on, and he's excelled. The last polishing his driving needed - just to improve his consistency - was learned in the five years spent with Dario Franchitti as his teammate: the Scot won the IndyCar title in Target colors for three straight years. Last year, Dixon provided the team with its fifth championship in six seasons. TCGR seems to disprove the theory that it's harder to stay on top than it is to get there.

"That's true," grins Dixon, "but I'm not sure there's a secret to it. I'd say one of the key things is that people are happy here. No one at Ganassi has a 'don't care' attitude. Management hires people with the right attitude - self-motivated, not self-promoting. Then these people realize they're working with others who share that work ethic and outlook, and so the team spirit builds. No one wastes energy getting upset with each other or being political: that's counter-productive when all we want to do is win."

And how about those apparently visionary qualities that appear to provide Chip Ganassi with 20-20 foresight that matches other people's hindsight? His first



Michael Levitz/LAT

(TOP) Dario Franchitti's third Indy win came on the 50th anniversary of Target, hence the unique firesuit logo. (LEFT) Last year, Scott Dixon became IndyCar Series champion for the third time.

champion, Vasser, has a theory about that. "Because racing is Chip's only business, he doesn't have the other distractions that some of racing's elite do," he says, "and that makes a difference in how he works. He's got the right guys and right tools in place and, in Target, he's got the most solid sponsor any Indy car team has ever had. So everything's lined up in the short term; that means Chip can focus on medium- and long-term plans and, like I say, they're entirely about racing. "I suppose you'd say that's something he's had going for him right from the start; it's been about racing all the way for Chip. And it's paid off for him, hasn't it?" ■



Walt Kuhn/LAT

## DARIO FRANCHITTI

Won three straight IndyCar Series titles (2009 through '11) and the 2010 and '12 Indy 500s for TCGR.

### THE DELIVERY DRIVER

This team is simply brilliant. During practice for my first IndyCar race with them, I remember thinking, "No wonder they were so difficult to beat all those years." The way they went racing, the people they had, the attitude they had and the facilities they had - mind blowing.

Chip has a will to succeed like you wouldn't believe. If he wins the race on Sunday, on Monday it's, "What have we done to make sure we win the next one, too?" And he's surrounded himself with people who share that outlook. They're never satisfied.

Another thing about Chip: he's the man to have in your corner when times are tough. After my Houston crash last year, when he said, "I'd love you to continue being part of the team," that was exactly what I needed to hear. That's something I'll always appreciate.



Perry Nelson/LAT

On his return to the IndyCar Series, Franchitti grabbed 13 wins with Ganassi, including two at the Indianapolis 500.

### 2011

**Dario Franchitti** won his third consecutive IndyCar Series - the first TCGR driver to achieve such a feat.



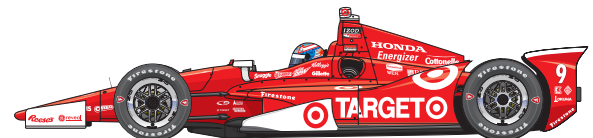
### 2012

**Dario Franchitti** earned TCGR its fourth Indianapolis 500 victory, racing with the No. 50 instead of his usual No. 10 to celebrate Target's 50th anniversary.



### 2013

On the way to his third IndyCar Series title and TCGR's 10th open-wheel championship, **Scott Dixon** takes the 100th race win for TCGR at Pocono, Pennsylvania - Chip Ganassi's home state. The Dallara DW12 (BELOW) raced by all IndyCar Series teams is named in honor of a former TCGR driver, the late Dan Wheldon.





# Celebrating a partnership that's always on Target.

Congratulations to Target Chip Ganassi Racing from your friends and partners at Kennametal. As America's Super Team celebrates its silver anniversary, rest assured that our tooling, precision surface treatments and advanced materials solutions are always ready to perform in your most demanding environments. From the shop floor to the finish line, what sets us apart also sets your partnership firmly on the pole, week after week. And on the podium for a quarter of a century.

When it comes to winning, **Different Thinking is Better Thinking.**  
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# 25 Years



# STAY ON TARGET

Chip Ganassi doesn't live in the past: his long-term strategizing is all about keeping the Target cars running at the front.

To objective observers, it's supremely appropriate that the team everyone is aiming at has bullseyes adorning its fire suits. Not since 2005 has Target Chip Ganassi Racing gone into an IndyCar Series season finale without one of its drivers having a mathematical chance of the title.

That kind of statistic is what keeps the relationship with Target so energized, even after 25 years. Dan Griffis, Director of Strategic Partnerships & Lifestyle Marketing at Target Corporation, says: "We adopted the racecar as a metaphor to go with our catchphrases of 'Fast, Fun and Friendly' and 'Speed is Life.' But I won't deny that it's nice to be associated with winners.

"The race program has a lot of interest among our employees: every market we go to, we bring Target staff members to the race, give them grandstand tickets, take them to hospitality, give them a chance to



meet the drivers. It's Target's longest standing marketing program. We aren't just sponsors; we're partners, we're embedded within the team."

Which in turn allows the boss, Chip Ganassi, to simply focus on making the most informed racing decisions. If Target, Scott Dixon and guys like managing director Mike Hull, or team managers Barry Wanser and Scott Harner, are proof of Chip's desire for continuity once he finds the right people, so he's shown that he isn't afraid to make changes when necessary - and sometimes when it appears to the outside world entirely unnecessary. As ever, he plays down compliments.

"Well...yeah, I do think we've made some good calls down the years, be it about drivers or engines or chassis," he admits, "but there have also been times when we've taken gambles - educated



Nigel Kenrade/LAT



Brian Cleary/LAT

gambles, but still gambles - that turned out right, so that we looked like geniuses!"

His champion-in-residence, Dixon, is no less intrigued by the contrast between Chip's desire for continuity in personnel and his willingness to change suppliers.

"Maybe that shows Chip's roots," he theorizes. "Obviously he's a smart racing businessman, but there are times when I think he also follows the old racecar driver's instinct - always looking for the next big thing. That's why, for example, he switched from BMW to Ford engines in sports cars, and why he went from Honda to Chevrolet in IndyCar. That's why he signed Kyle Larson to the NASCAR program, why he's got Sage Karam on his books.

"The important thing is that he does his research beforehand. He's methodical. When he was considering the switch to >

(TOP) Kyle Larson has started his rookie NASCAR Sprint Cup season with a bang, while Tony Kanaan and Scott Dixon (ABOVE) each have a strong chance of driving a silver TCCR car (LEFT) into Victory Lane at the Indianapolis 500.



Brian Cleary/LAT

## TONY KANAAN

Joined Ganassi for 2014 after a long courtship. Winner of the '04 IndyCar title and 2013 Indy 500.

### THE VETERAN NEWBIE

When I put the Target suit on, I'm like, "Whoa, that's intimidating." This team is a reference point. Before I joined, if I started a race 15th, if I was ahead of one Ganassi car, I'd say, "Wow, those guys are having a bad weekend!" That's how people look at Target Chip Ganassi Racing.

So there's definitely more pressure because of the expectation. If we do good, then whatever - that's what we do. When we don't, then it looks bad.

Chip is awesome. I've always respected him a lot because he's a racer. All he wants to do is win championships and the "500." So he hires people who he believes can get the job done. He could have been stubborn and not hired me because of me turning him down in 2008, but he believed in me and what I could bring to the team.

But what I like most about Chip is that he's straightforward: if he wants to say something, he'll just say it.



Dan Boyd/LAT

It's been a tough start to 2014 for the No.10 car, but T.K. heads to the Indy 500 as one of the favorites for victory.



**LARSON HAS LANDED**

The NASCAR Nationwide Series' 2013 Rookie of the Year, NNS race winner this year, and he already has a runner-up finish in Sprint Cup: Kyle Larson is Chip Ganassi's latest stock car prodigy.

Nigel Kinrade/LAT

Chevy this year, he sat down with engineers and mechanics to ask about the differences in engine installation, and he asked us drivers what we'd heard about the differences in the drivability of the two engines, and so on. And you've got to say, his approach works. Look at the Ford program in sports cars - a win in only its second race, and it's a big one, the Sebring 12 Hours. That's impressive."

One change forced on TCGR by circumstance was the occupancy of the No. 10 Target car for 2014, following Dario Franchitti's career-ending accident in Houston last year. Having already got Tony Kanaan under contract, Chip moved the '13 Indy 500 winner into his old friend's seat, then slotted Ryan Briscoe into the No. 8, T.K.'s original destination. He wasn't slow, either, in retaining Dario's expertise.

"After a guy wins you three series championships and two Indy 500s, you want him to continue to be an integral part of the team," says Ganassi. "We'll always be happy to have Dario. Whatever



Reynold Dore/LAT

**"Scott [Dixon] is a guy who we hope will always be involved with us. I think he's the best out there"**

**CHIP GANASSI**

capacity he wants to serve the team, I think we'll get a lot of dividend from him.

"Scott's another guy who obviously we hope will always be involved with us in some way," he continues. "I think he's the consummate IndyCar driver - the best

out there, to be honest - and I think he's a real pro off the track, too."

So much for TCGR's veterans. As Dixon alluded to, Ganassi already has his eye on the longer-term future, with his hiring of potential NASCAR superstar Larson and standout road-racing prospect Karam, the 2013 Indy Lights champ. Karam drives a fifth Ganassi entry when he makes his IndyCar debut in the "500" this month.

Over the past 25 years, Target Chip Ganassi Racing has made a couple of decisions that didn't work out, but they're far outnumbered by the smart choices.

"Did Chip give you all that B.S. about just being lucky?" grins Dixon. "Yeah, don't listen to it, man - the guy just can't handle praise. He's smart and very focused, and if it's not something that will make the team more successful, he won't waste money on it. Obviously, this is one of the better-funded teams, but Chip spends the dollars in the right areas. His partnership with Target has lasted 25 years for a very good reason; it's there in the results." ■

(ABOVE) Present and future - Kyle Larson shows huge promise in Ganassi's NASCAR team. (LEFT) Dixon has won three IndyCar titles for TCGR and has ample time to increase that tally.

**CHIP'S BIGGER PICTURE**

Not all of Ganassi Racing's cars run the familiar Target livery. Here are some of the other star performers from Chip's IndyCar, NASCAR and sports car racing stables.



Brian Clear/LAT

**Charlie Kimball**  
In his fourth year at Ganassi. Scored his first IndyCar victory last year at Mid-Ohio.



Paul Webb/LAT

**Ryan Briscoe**  
Returned to Ganassi this year after a nine-year absence. Expected to run for wins in '14.



Ben Boyd/LAT

**Prototype program**  
Seven Rolex Series titles; five Rolex 24 at Daytona wins. Added a first 12 Hrs of Sebring win this year.



Nigel Kinrade/LAT

**Jamie McMurray**  
Won his second ever NASCAR Sprint Cup start with Ganassi in '02. Won the 2010 Daytona 500.



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(MAIN) This wouldn't happen now, would it? Lotus founder Colin Chapman and his driver Jim Clark check out a Ferrari 156 at the 1962 German GP. (RIGHT) Clark flies in the Lotus-Ford 49 at the '67 German GP, his last full season with Chapman and Lotus.

WORDS David Tremayne | IMAGES LAT archive

## GREATER THAN THE PARTS

At the heart of so many great teams is the dynamic of an exceptional driver and his mentor. Jim Clark with Colin Chapman is perhaps the ultimate such pairing.

When you look back on what Jim Clark and Lotus founder Colin Chapman achieved together - 25 grand prix victories, 33 poles, 32 podiums, 28 fastest laps and two World Championships from just 72 starts, plus an Indianapolis 500 win, just to skim the surface - it's ironic that neither was particularly impressed when they first met.

The start of what would become one of Formula 1's defining driver/team boss relationships began in 1958, at a time when only the Border Reivers team in Scotland truly realized just what potential the quiet Scot possessed. The team had raced a Lotus 11 and its founder, Jock McBain, was keen to see the new front-engined 12 Formula 2 car, arranging for Clark to test it at Brands Hatch. Clark distinguished himself with a fast run in the new Lotus Elite which his friend Ian Scott Watson eventually bought for him to race, but Chapman was less enthused about him driving the F2 car as he'd yet to handle an open-wheel racecar; Clark

wasn't impressed, either, when Graham Hill crashed the 12 after losing a wheel...

Chapman and colleague Mike Costin entered their Elites for a race at Brands' traditional post-Christmas meeting; Scott Watson entered his car, too, and Clark overheard Chapman and Costin scheming which of the two of them would win. Incensed, he resolved to beat them and for laps he and Chapman ran side by side until Clark took the advantage. He would have won, but for a backmarker getting in his way while he held off Chapman; eventually he followed the winning company founder across the line.

By then Chapman knew just how well Clark could drive, and after runaway success for Team Lotus in Formula Junior together, their relationship quickly blossomed into an F1 ride from the 1960 Dutch GP.

Why did it work so sublimely?

First, there was Chapman's genius, his ability not necessarily to innovate, but to interpret somebody else's innovation and apply it successfully. The Lotus 25, which >





**THE FIRST VICTORY**

Spa-Francorchamps, 1962: Jim Clark eases his Lotus 25 across the finish line for his first grand prix victory. Arms aloft, a triumphant Colin Chapman celebrates the first of many.



(ABOVE) Jim Clark at the 1963 South African GP at the East London circuit, the venue for a seventh and final victory in his first championship-winning season with Lotus and Chapman.

introduced the fully-stressed monocoque chassis into F1, was a case in point. Monocoque construction wasn't a new concept, but Chapman's application of it to the 25 in 1962 not only brought Jim Clark 14 grand prix wins and the '63 World Championship, but revolutionized the sport.

The list goes on. The Lotus 49 of 1967 wasn't the first F1 car to use the engine as a stressed member; the Lancia D50, BRM P83 and Lotus 43 predated it, but the 49 was in the vanguard of the integrated packaging that is so crucial in F1 today. Jim Hall really made wings work on racecars, but Chapman brought them successfully to F1, together with Ron Tauranac and Mauro Forghieri. Hall also harnessed ground effects; Chapman made them work in F1.

Clark, meanwhile, was peerless, the standout driver of his generation and, for

**“They had implicit trust in each other and that was the secret to their astonishingly successful relationship”**

many, the greatest ever. He could drive anything, anywhere, and his fluid style and ability to subconsciously adapt to differing situations enabled him to get the best from anything Chapman gave him to drive. His outstanding sensitivity at the wheel also made him the perfect nursemaid - witness his victories in the 1966 U.S. GP with the fragile BRM H16-engined Lotus 43 and again in '67 with a broken 49.

Chapman would give him the equipment, Clark would drive it and relay his impressions accurately and concisely

to him so that Chapman could improve it where necessary. They had implicit trust in each other and that was the secret to their astonishingly successful relationship, along with strong mutual respect.

Chapman regarded Clark as a brother. His death at Hockenheim, April 7, 1968, all but destroyed the Lotus founder. He hadn't been in Germany, but was on a family skiing vacation in St. Moritz. He didn't attend the non-championship International Trophy race at Silverstone either, where there was a minute's silence on the grid, nor the Spanish GP where Hill, in the single Team Lotus entry, scored an historic triumph. But when Hill won at Monaco, where Chapman wanted to oversee the debut of the Lotus 49B, his enthusiasm was gradually rekindled.

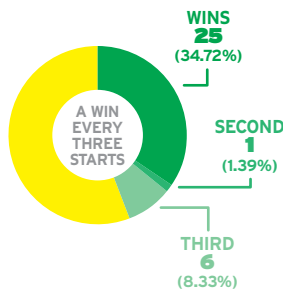
Chapman hired Jochen Rindt as Clark's true replacement, but in 1969 theirs was a >

**CLARK & CHAPMAN BY THE NUMBERS**

Jim Clark's entire Formula 1 career was spent with Team Lotus. His first F1 World Championship start was a DNF in the 1960 Dutch Grand Prix, and his 72nd and final one was victory in the '68 South African GP, a little over three months before his death.

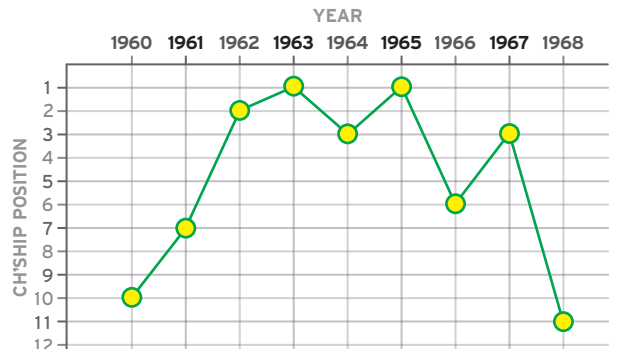
**F1 HIT RATE**

As well as 25 wins from 72 F1 World Championship starts, it's obligatory to mention that Jim Clark was second only once - the '63 German GP, when his Climax V8 lost a cylinder and Ferrari's John Surtees was there to pounce.



**WORLD CH'SHIP RECORD**

Statistically, 1963, the first of Jim Clark's two World Championships with Lotus, was his most dominant, with seven wins from 10 starts. But for his second in '65, the Scot won the first six races he started (Lotus skipped Monaco for the Indy 500, which Clark won), then didn't score a point in the final three.





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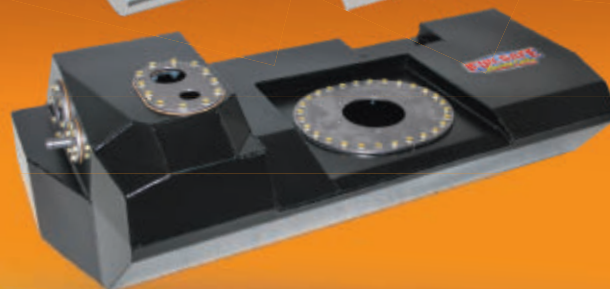
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**CHAMPIONSHIP DELIVERED**

Clark's victory at the 1963 Italian GP sealed a first Formula 1 World Championship both for himself and his mentor, Lotus founder Colin Chapman.



**WINNING DOWN UNDER: CLARK'S TASMAN RECORD**

Held in Australia and New Zealand over the European winter, the Tasman Series was a great way for drivers to earn money and top up their tan during the F1 off-season.

Tasman Series cars used 2.5-liter engines in F1 chassis, so it was also a good way of staying sharp for many of the grand prix racing elite.

Jim Clark raced in Tasman from 1965 (BELOW) to '68, taking the title three times for Lotus and winning 12 points-paying races from 29 started.



very different relationship. Rindt wasn't prepared to accept Chapman's judgment on technical things, especially after his massive accident when the rear wing broke on his 49B in the Spanish GP at Montjuich Park. He even wrote to magazines condemning wings. Chapman went ballistic. The following year, Rindt refused initially to drive the Lotus 72.

When Mario Andretti returned to Chapman's fold in the 1970s, they were initially hugely successful. But that relationship, too, could be fractious. "Working with Colin was no trip to Paris, you know?" Mario says. "He and I had monumental arguments. He was getting more and more downforce out of the car, but he'd do nothing about its stiffness."

When Andretti staged a demonstration of the shortcoming in Spain in 1980, Chapman went ballistic again. "He hit the ceiling! He just did not accept the driver having any kind of an engineering input."

Perhaps that's another reason it worked so well with Clark; he wasn't overly technical, as Jack Brabham and John Surtees will confirm, but accepted Chapman's authority.

In a report quoted widely by Graham Gauld in the second edition of his book, *Jim Clark Remembered*, Peter Jowitt

made some interesting observations. Chapman had initiated an enquiry into Clark's crash and asked Jowitt, the senior engineer specializing in military prototype airplane accidents at the UK's Experimental Aircraft Department, to carry it out.

"The accident investigation left a greater impression upon me than any other that I have ever done," Jowitt wrote. "There are not too many men of the caliber of Jimmy Clark. I had to revise my view of Colin Chapman. He knew that he could expect nothing but the unvarnished result of the investigation, but was absolutely determined to have the truth, no matter how hurtful. I felt that he was being tortured (not a word I would use very frequently) by the thought

that he had in some way contributed to the death of a man who was to him very much more than his team leader.

"After Jimmy's accident I saw a Chapman I think very few people saw, or even suspected existed."

Jackie Stewart saw a great deal of Chapman's relationship with Clark - and it was one reason why he had not accepted the former's invitation to join the team. He drove a Lotus 33 in the Rand Grand Prix at Kyalami in late 1964, replacing Clark after the older Scot had slipped a disc during a snowball fight at the launch of a revised Ford Cortina, and had won the second heat after a DNF in the first. But he was canny enough to know that there was room for



**New Year's Eve, 1967, at the Kyalami Ranch. Clark (RIGHT) and Chapman carry out a pincer attack on Jack Brabham. The next day, Clark would take his 25th and final F1 World Championship race win in the 1968 South African GP.**



(LEFT) Jim Clark's Lotus 49 leads the 1967 British GP on route to his final home win. (BELOW) Victory in the 1965 Indy 500 cemented Clark's reputation beyond Formula 1.



## “What might have happened had Clark not died at Hockenheim will remain forever academic”

only one star in Chapman's orbit.

“Chapman had protected Jimmy from almost everything,” Jackie says. “He could depend on Colin to do everything for him, fix his racing cars, do his travel, because Lotus did that. When Jimmy moved to Paris he had [journalist] Jabby Crombac and a guy called Michel Fanquel. Jabby was his racing and Chapman link, but Michel was a totally different animal, more social. He opened the world to Jimmy, who was suddenly not the border farmer depending on Colin Chapman; he was living in Paris, the most sophisticated city in the world.”

And Stewart believes that would have created tensions that had not hitherto existed in Clark's relationship with Chapman.

“I saw the change,” he says. “I mean, Jimmy was a different man. And we had spent a lot of time together. In 1964 we had shared John Whitmore's flat in London's Mayfair. But the man I would go to Paris to see when I was on business

there with Elf was just totally different.

“He was more independent, more vocal about what he wanted. And I think Colin was going to have more and more trouble with him, if you know what I mean. Because until then Jimmy asked Colin about everything, and Colin told Jimmy how it was going to be because Jimmy needed that leadership, he needed that figure there. But he was changing...”

What might have happened had Clark not died at Hockenheim will forever remain academic, but it's interesting that the 1960 split with his friend Ian Scott Watson, the man who probably did the most to promote his talent in his formative years, may have come because Scott Watson committed the cardinal sin of pushing him too hard - something for which Chapman was well known. Whether their mutual trust would have been sufficient to weather the occasional storms that Stewart foresaw is something else we'll never know.

Perhaps Chapman would have accommodated his star, for whom he had such great fondness. When he hired Emerson Fittipaldi in 1970, he told the Brazilian: “No offence Emerson, but I don't want to get too close to you. After Jimmy I just can't allow that.” ■



## RACING'S TOP DOUBLE ACTS

### POTENT PARTNERSHIPS

Coincidentally, the relationship between Jackie Stewart and Ken Tyrrell (ABOVE) also yielded 25 grand prix victories. And arguably it was even stronger than Clark and Chapman's. .

“Ken was always focused and never looked back,” Stewart says. “We never lost the depth of our friendship. I had trust in him when I joined in '68. The Ford engine was so simple, and in F2 the Matra chassis was seamless silk. I knew Ken had the right people. I knew going with him was the right decision.”

Most of the time they got along well, although Tyrrell admitted that the warm-up for the '68 German GP on the foggy Nurburgring was the only time he forced a driver to run. “I thought it was unsafe,” says Stewart. “The fog was ridiculous and the rain really heavy. I never did a lap of the Nurburgring that I didn't have to do, but Ken said: ‘No, you've got to go out so you'll know where the water is.’ And he was absolutely right. He convinced me it was the right thing to do.”

That trust was crucial. Stewart won by four minutes.

“Ken was quite a bully,” says Stewart. “We had terrible arguments. There were no

subtleties.” The “Tyrrell froth-job,” as it was known, was like a hurricane, yet brewed over as quickly as it brewed, and afterwards there was an endearing lack of animosity.

“Ken was an absolutely straight shooter, that was his greatest strength,” Stewart smiles. “He and I never needed a contract for F1. We had a handshake. He was a beacon of integrity.”



Petty (LEFT) and Inman grew up together at the race track, then formed a legendary partnership.

To find similar chemistry in U.S. racing, perhaps the long and successful relationship between NASCAR legend Richard Petty and his cousin/crew chief is the best example.

After Dale Inman joined Petty Enterprises full time in 1963, the pair won 180 races as driver/crew chief, plus all seven of Petty's championships. Inman left the team in 1981, but later returned as a consultant.



Six of Dale Earnhardt's seven NASCAR titles were earned with team owner Richard Childress.



The modern benchmark is Chad Knaus/Jimmie Johnson, with six titles for the duo...and counting.

With this many people diving on Daniel Ricciardo's Red Bull RB10 to replace a damaged wing, the team might look overstaffed. But at a grand prix, operational personnel are restricted to "just" 60.



# POPULATION EXPLOSION

Far from allowing Formula 1 teams to operate competitively on a smaller scale, the ever-increasing technology at their disposal has increased overall staffing levels - massively.

WORDS Edd Straw | MAIN IMAGE Steven Tee/LAT



When Williams Grand Prix Engineering started in Formula 1 in 1977, the company headcount was 17. By 1997, the last of its glory years, it employed 240 people. Today, the renamed Williams F1 has around 650.

During Tyrrell's heyday with Jackie Stewart in the early 1970s, the team peaked at 19. But in its final, declining years before being sold to become British American Racing in 1998, it employed around 120.

The Mercedes F1 team of the mid-1950s, which dwarfed most of its rivals, had around 200 people making everything from the engines to the exquisitely upholstered seats, whereas today's Silver Arrows incarnation, if you take into account all those at its chassis and engine facilities, numbers more than 1,000.

You get the idea. F1 teams have gotten bigger - way, way bigger.

The challenge remains unchanged; to design, build and successfully run a couple of grand prix cars. So why the exponential growth? The answer can be found with a close examination of the front of a car.

Although Renault's current power deficit conceals the fact over a whole lap, the Red Bull RB10 is the best of the 2014 cars aerodynamically. Look at its front wing in comparison to that of the McLaren MP4/5, which dominated in 1989. In both cases, the wing exists to generate downforce to make the car faster through the turns. But the latest wings are creations of irreducible complexity comprising 80-plus "tools," designed not just to create downforce, but to set up airflow structures that make that downforce more consistent and allow the whole car to work.

A "barn door" main plane, a couple of flaps and some endplates - five effective parts - is child's play compared to the hugely elaborate designs of today.

Twenty-five years ago, the front wing was a modular part, whereas today it's integral to the performance of everything behind it, part of an elaborate airflow system that you need a supercomputer to understand. When you change a modern front wing, it's not just a question of whether it makes the wing produce more downforce, but how it influences airflow under the floor, around the sidepods, through the rear diffuser or over the rear wing. This complexity is replicated throughout the car. A grand prix car is orders of magnitude more complicated than the best that the late 1980s had to offer, even though the regulations are more restrictive.

The reason for this growth is simple; F1's become big business. While teams aren't as well paid as perhaps they should be, sharing just 60 percent of the sport's commercial revenues, the biggest have big money.

F1 became fat on the cash of tobacco companies, then banks, energy drinks, and so on, and so the teams have expanded.

"The standards of design are so high now that you end up working niche areas," explains Christian Horner, team principal >

## DOUBLE DIGITS STAFF? NO...

Before founding Williams Grand Prix Engineering in '77, Frank Williams struggled with projects such as the '73 Iso-Marlboro. Back then his staff numbered just seven.



of Red Bull Racing, F1's most successful squad of the decade. "If you go back 20 years, the size of an aero department or design office would have been less than half of what it is now, and probably a quarter. The key to success is exploring all aspects and leaving no stone unturned through performance, reliability, the way you operate, the pit-stop performance. Even the freight and logistics is massively important."

Glance at adverts for F1 job vacancies and you can see the extent of this specialization. Whereas once, the team would largely comprise "mechanics" who would both run and build the car, the portfolio of job titles has diversified. Take the NDT officer as an example. It stands for non-destructive testing, and the job is to examine parts to ensure any imminent failures are picked up using specialized test and analysis equipment. Once, parts



LAT archive

**THEN AND NOW**

In 1968, Robin Herd (ABOVE, left) designed McLarens with a couple of draughtsmen. Now, the team's technical staff is numbered in hundreds (BELOW).



Lorenzo Bellacani/LAT

were "lified," but now they are inspected in minute detail. This is one of the reasons why F1 cars have become so reliable.

Ever-more advanced equipment requires people to operate it. As Horner puts it, "in any business, people are your biggest cost center" and this is an area where Red Bull has invested heavily. The team still exists on the same modest U.K. business park that it did when created as Stewart Grand Prix for the 1997 season, but since Red Bull took it over, it has added two additional buildings to house the vast array of equipment now needed to produce the cars.

During the past 15 years, the technology has accelerated particularly fast. James Key is in a unique position to judge the rate of development in this period as, since joining Jordan in 1998, he has gone on to act as technical director for an unprecedented three teams - Force India,

Sauber and now Scuderia Toro Rosso.

"Everything is constantly becoming more technical," he explains. "When I first started with Jordan in '98, we had a 40 percent scale wind tunnel running only during the week and CFD was just beginning to be useful. By the time I left the team as Force India [in early 2010], it was 24/7 in the wind tunnel at 50 percent, and for most other teams 60 percent, with pneumatic tires on the models. The CFD clusters were absolutely enormous, the level of modeling detailing you were applying was extensive. Then you had driver-in-the-loop simulators and computing power had increased massively, too. The feeling, the way people work, is similar, but the tools at your disposal are far more advanced, and because of that you need to employ more people."

And it's not just about having people to crunch numbers, build wind tunnel models >



Steve Etherington/LAT

Mercedes' at-race personnel celebrate Lewis Hamilton's Malaysian Grand Prix win. As well as the permitted 60 operational staff, the numbers are swelled by marketing, hospitality and PR people.

**COMPACT MARUSSIA**

**F1'S SMALLEST TEAM**

Marussia, which entered Formula 1 as Virgin Racing in 2010, is the minnow of the paddock. With an annual budget of \$110 million and approximately 200 staff, it designs, produces and runs a car that is about four seconds off the ultimate pace. It's a well-drilled operation and, pound-for-pound, very effective. The price it pays for not being one of the huge, staff-heavy teams is that it shares the record, along with Caterham, for most starts without scoring a point.

There are modest plans for growth, but with F1's economic

future uncertain and the team receiving little (\$10 million) from the sport's central cash pot, the focus is on survival. But it's on a completely different level to traditional F1 stragglers. For example, when Minardi made its F1 debut as a one-car operation in 1985, it had just 13 staff, including driver Pierluigi Martini.

Marussia takes the maximum allowed 60 operational personnel to every race (RIGHT), but loses out on the aerodynamic side back at base.

"We have similar amounts in stores and R&D and inspection as

the big boys," says team principal John Booth. "But what we don't have is the same number in the aero department. We have only 25-30 in our aero department, and the bigger teams have over 100."



Andy Hone/LAT

Marussia's in-house operation is augmented by a power unit/gearbox supply deal from Ferrari. The team has expanded since coming into F1 in 2010, increasing its budget by around 50 percent and head count by 80, but a technical linkup with McLaren, which replaced original chassis partner Wirth Research, ensures that Marussia is a paragon of efficiency - albeit a relatively unsuccessful one so far.

As Booth puts it, "I'd have no idea how to distribute 800 people around a factory to build an F1 car."

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Charles Coates/LAT

The big teams are at pains to play down how large they are (a hangover of F1's failed resource restriction agreement). But people in the know in the big teams will invariably claim that their biggest rivals have a headcount of around 800. This is larger than any of them officially claim, and the waters can be muddied by the use of contractors.

While there are diminishing returns to throwing more people at a problem, teams *always* want more performance. The regulations are tight, meaning that it's necessary to exhaustively explore narrow avenues to find tiny steps. But while some argue that freeing up the rules would allow more creativity and large chunks of performance to be found cheaper, the big teams will inevitably spend what they can to find the crumbs, too. Red Bull is often cast as the villain, spending-wise, yet its *official* staff number is 650. The reality is that Ferrari,

**More sophisticated methods of design and manufacturer, such as autoclaves for carbon fiber (TOP LEFT, at Toro Rosso) don't reduce head count. (LEFT) Don't be fooled by the air of inactivity - each of Ferrari's at-track operational personnel has an intense and specialized role to carry out.**

and work with the design tools. With all of this come other personnel needs, too, like HR departments, IT specialists, security, cleaners, canteen staff...all the trappings you would expect of companies employing 200-800 people. While you might assume automated manufacturing techniques would keep head counts low, people still need to operate the machinery.

And the old, labor-intensive techniques are still needed. Those teams that make their own exhausts and radiators do so exquisitely by hand. While it was once possible for a technical director to know every nut and bolt, things are different now. As Williams chief technical officer Pat Symonds, now in his fourth decade in F1 puts it, "it's now about being the conductor of the orchestra."

F1 regulations limit teams to 60 operational personnel at races (i.e., those involved with running the car). But as few as 14 might actually touch the car. The rest will be engineering, analyzing, monitoring electronic systems etc. On top of that, all teams have some kind of factory-based support during race weekends.

**"A team will spend all it has got and maybe 10 percent more striving to be competitive"**

**CHRISTIAN HORNER**

Mercedes, McLaren and Red Bull are all throwing serious cash and staff at F1.

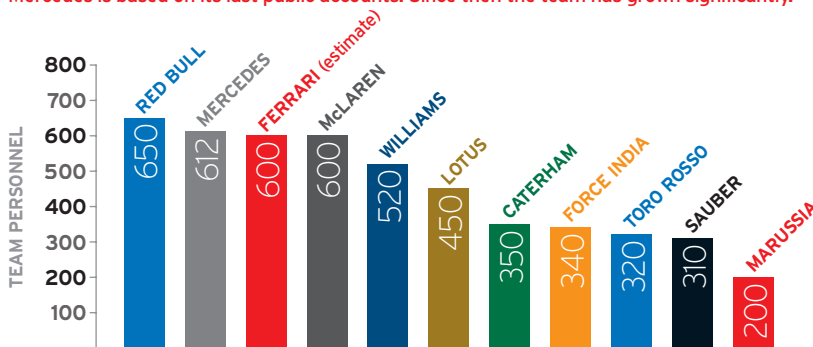
"A team in any form of motorsport will spend all it has got and maybe 10 percent more striving to be competitive," says Horner. "It's like a balloon; you squeeze one end and it goes to another area. Teams will spend what they have at their disposal."

That's the essential truth of motorsport. Whether you're an amateur racer splashing out on a fresh set of tires, or a giant F1 team investing in cutting-edge machinery, it's all about finding the "unfair advantage."

And while there's a romance about the days of a small band of people racing and improvising their way around the world, there's also a fascinating beauty in the sheer scale of grand prix racing today. ■

**2014 FORMULA 1 TEAM SIZES**

This is based on the official figures offered by the 11 F1 teams on their current size. Inevitably, it's difficult to pin down accurate numbers as some, such as Ferrari, also include an engine department and decline to give out numbers. The figure offered by Mercedes is based on its last public accounts. Since then the team has grown significantly.



**BEYOND THE TEAMS**

**F1'S CAST OF THOUSANDS**

Beyond the 11 teams, which take 60 operational personnel to each grand prix, with marketing/hospitality on top, vast numbers travel to the races. And that's before you even take into account all those involved who remain at base.

Every aspect of the engineering side has grown dramatically. The introduction of the 1.6-liter turbocharged, hybrid V6 power units has put massive demands on the three manufacturers. Like the teams, engine building has become a hugely complicated exercise. When Renault Sport F1 was first developing its groundbreaking turbocharged F1 engine in the mid-1970s (BELOW), it was a tiny operation.

"I'd recently completed the Le Mans project, Francois Castaing was the



LAT archive

technical director and Jean-Pierre Boudy was F1 project leader," says Bernard Dudot, the key figure in the development of the engine. "Only eight people were involved in the F1 project. A small team."

By contrast, Renault now embeds eight personnel with each of its four teams (Red Bull, Lotus, Caterham and Toro Rosso), with a total headcount at its Viry base believed to be in excess of 300.

Then there's the fuel suppliers. Shell, which supplies Ferrari and customer outfits Sauber and Marussia claims to have "more than 50" dedicated F1 staff around the world. And, uncountable, there are hundreds of companies dotted around the world doing work for F1 teams, employing thousands of people specializing in everything from electronics to hospitality and catering. As for F1's sole tire manufacturer, Pirelli, it takes 55 people to each GP, from a total of 480 directly involved in its F1 program.



Andy Hone/LAT

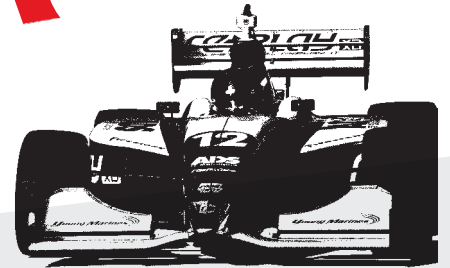
**At each grand prix, Formula 1's sole tire supplier Pirelli's engineers (ABOVE), tire fitters and support staff number 55.**



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**CHAMPIONS WEAR BELL**



Paul Weibull/LAT

**BRYAN HERTA AUTOSPORT  
DAN WELL DONE**

Bryan Herta Autosport, led by Herta and co-owner Steve Newey, had made its IndyCar debut in the 2010 Indy 500 with a rookie. Its second race in the series was the 2011 "500." But this time it came back with a former winner, Dan Wheldon, who'd found himself out of a full-time ride at the end of the previous season.

Wheldon and engineer Todd Malloy focused purely on race setup in the Month of May, but Dan also gave pep talks to the 12-strong team of part-timers working on his car.

Come the race, Wheldon ran top six all day, and when bigger teams' fuel strategies were thrown out of line when the last 35 laps went green, suddenly only JR Hildebrand's Panther Racing car stood between Wheldon and victory lane. The rookie wavered under the veteran's pressure and an unnecessary lapping maneuver turned into a final-lap, final-turn wreck. Dan had nailed his second Indy win.

Tragically, just five months later in Las Vegas, this great underdog story became racing's most poignant tale of the 21st century.

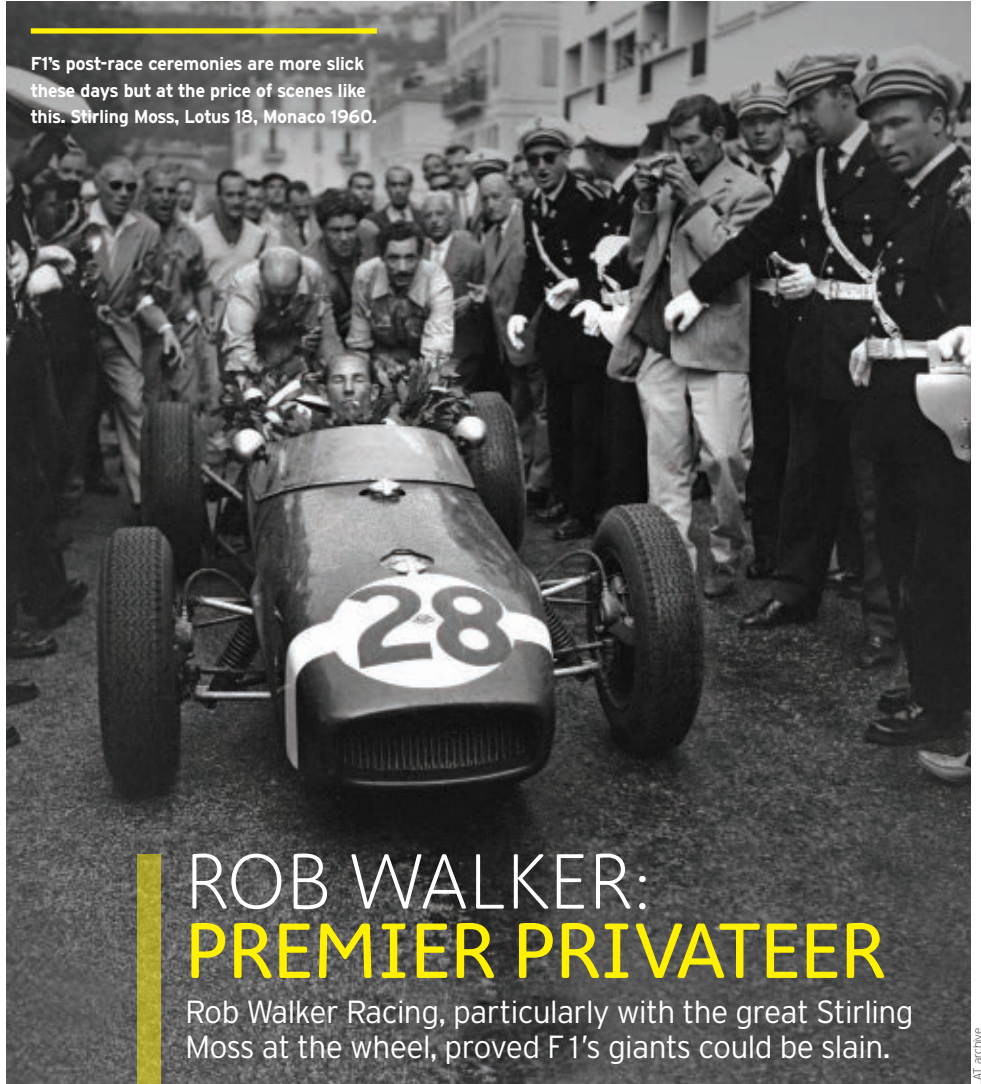


Michael Leavitt/LAT

**POST-"500" DISBELIEF**

Bryan Herta's interview after victory was TV gold. "Can you believe that?" he blurted. "We came here to win and all month we kept saying, 'We're here to win,' but...we actually won!"

F1's post-race ceremonies are more slick these days but at the price of scenes like this. Stirling Moss, Lotus 18, Monaco 1960.



LAT archive

**ROB WALKER:  
PREMIER PRIVATEER**

Rob Walker Racing, particularly with the great Stirling Moss at the wheel, proved F1's giants could be slain.

Rob Walker, heir to the Johnnie Walker Scotch whisky firm, was born into wealth, but the funds directed toward his race team were spent with great shrewdness. Mr. Walker emphatically was not in the sport just to be part of the scene.

Thus, when he quit club racing to focus on Formula 1, he hired proven grand prix winners - the steady Maurice Trintignant

and the brilliant Stirling Moss (these days, Sir Stirling) - and purchased rear-engined Cooper-Climaxes, the British cars that were changing the face of junior formula racing.

Walker started a similar revolution in F1 when Moss won the 1958 Argentine GP as his Cooper didn't require the tire changes necessary for the more powerful front-engined cars. Then Trintignant won in Monaco. Rob Walker's little squad had thus scored the first rear-engined wins of the World Championship (which started in 1950) and also the first two GP wins for Cooper. The factory team would sweep the Drivers' and Constructors' titles in '59 and '60.

For '60, Walker switched to the new Lotus 18 chassis and, amazingly, again he and Moss reached victory lane before the official team did so, racking up two wins that first year, and two more in '61.

Moss's retirement left RWR without an ace for several years, but Jo Siffert's perfect drive at Brands Hatch in 1968 brought Walker his ninth and final grand prix win.



LAT archive

**ROB'S REIGN IN THE PRINCIPALITY**

Rob Walker Racing won Monaco three times in four years. Pictured (ABOVE and TOP) is Moss's 1960 triumph in a Lotus 18.



Long Beach was one race that got away for Wolf, but three didn't...

LAT archive

**WALTER WOLF RACING**  
**FANG-TASTIC FIRST YEAR**

A business partnership with struggling Frank Williams had brought Walter Wolf little in the way of Formula 1 results so, as controlling partner, the Austrian-born Canadian brought in Peter Warr to replace Williams as team manager for 1977.

The latter went off to form a squad of his own with Patrick Head as designer, and in time it would become one of the greatest teams F1 has ever seen. Yet it was Wolf who would find victory lane sooner.

Race engineer Harvey Postlethwaite became Wolf's designer and Jody Scheckter was hired as driver. Over the previous three

years at Tyrrell, Scheckter had become a driver who knew exactly when to push and when to consolidate what he had. However, even he was surprised when he won his first ever race with Wolf, the WR1 surviving in the insane heat of Argentina.

Backing this up with two more wins (Monaco and Canada) and six other podiums, Scheckter finished second in the championship. But, like Mario Andretti at Lotus, Jody suffered seven DNFs, handing the title on a plate to Ferrari's Niki Lauda. Still, one-car Wolf Racing had astounded its more famous rivals in its debut year.



LAT archive

**CORNERSTONES**  
Scheckter and Postlethwaite - the men who made Wolf a fleetingly brilliant team.

**ALAN KULWICKI**  
**HE DID IT HIS WAY**

A perfectionist and an engineer by trade, what Alan Kulwicki achieved in 1992 to win NASCAR's Winston Cup may never be replicated. OK, so he scored only two race wins that year, but the manner in which he made his little team into contenders on every type of track was testament to his skills both in and out of the racecar. He'd never been lured to a big team because he felt sure his Davids could take on and beat the multi-car Goliaths of the sport. In his final year on earth, he was proven right.



Getty Images

**BETTER THAN AWESOME**  
Beating a great like "Awesome Bill from Dawsonville" Elliot gilded Kulwicki's title. The points race was close - 4078-4068!



That Kulwicki reached his goal before a plane crash took him from us is some consolation.

RacingOne/Getty Images



Philip Abbott/LAT

**DALE COYNE RACING**  
**END OF A 25-YEAR WAIT**

After Newman/Haas Racing lost half its sponsorship and cut down to one car for 2009, Justin Wilson was out of a ride but when he heard ace engineer Bill Pappas was joining Dale Coyne Racing, JWil phoned the team owner who was still winless after a quarter century running Indy cars.

This unlikely triumvirate almost won their first race together in St. Petersburg, but Watkins Glen saw their latent promise fulfilled. Wilson qualified on the front row, and led 49 laps on his way to victory.

"The great thing about our first win was that it wasn't a lucky deal at all," recalls Coyne. "A lot of teams' first victories owe a bit to other people's problems. But we dominated that day; the next three cars behind us belonged to Penske and Ganassi!"



LAT archive

**JEAN RONDEAU**  
**FRENCH RESISTANCE**

Three straight Le Mans *victoires* for Matra in the early 1970s had brought pride to French hearts, and the third-time-lucky win for the Renault works team in '78 had interrupted a potential blitz of the LM24 results sheets by Porsche. But it was the plucky Jean Rondeau who became a sensational hero when he drove a car bearing his name to victory in 1980. To this day he remains the only team owner/driver to accomplish this feat.

Sharing driving duties with Jean-Pierre Jaussaud, who'd co-driven with Didier Pironi in the Renault victory two years earlier, Rondeau's Cosworth-powered M379B finished two laps ahead of the Porsche of Jacky Ickx/Reinhold Joest.



Pulling double duty... For Mike Kranz, chief mechanic on the No. 56 BMW Z4 GTE in the TUDOR Championship's GT Le Mans class, going over the wall with a fresh Michelin and a tire gun is just another aspect of his race weekend.

# COLLECTIVE STRENGTH

The most essential person on a race team's roster? That would be all of them, as the guys from BMW Team RLL's TUDOR Championship GT Le Mans program explain.

WORDS Richard S. James | MAIN IMAGE Richard Dole/LAT

TUDOR United SportsCar Championship GT Le Mans cars aren't quite as complex as Formula 1 machines, granted. But over a typical race weekend, they still need to be prepared, set up, serviced and repaired on a pretty much constant basis. Obviously, your average two-car GTLM team roster is way smaller than the hordes an F1 team brings to each grand prix, so the real skill is to optimize the resources available - do more with less, as it were.

BMW Team RLL is one of those teams doing more with less. Fielding two BMW Z4 GTEs in GTLM, typically for Dirk Muller/John Edwards and Bill Auberlen/Andy Priaulx, it was leading the TUDOR Championship GTLM standings with Auberlen/Priaulx after four rounds.

Compact it may be, but BMW Team RLL has a couple of tricks up its sleeve to make it appear larger - kind of like covering a wall in mirrors to make a room

seem bigger, only much more effective. First, the RLL stands for Rahal Letterman Lanigan, and the GT team has access to much of the might of the Verizon IndyCar Series team that fields Graham Rahal and part-season driver Oriol Servia. Second, it has the full support of BMW Motorsport.

"It's important to have this strong and direct link and to really feel it is a partnership," says Jens Marquardt, head of BMW Motorsport. "If you just hand a car to someone and tell them to run it, the amount of potential they might extract from a setup like that is probably close to only 80 percent.

"If you look at the last couple of years of the M3 GT car, clearly it should have exhausted its potential. But collectively, thanks to *everybody* involved in the program - the team, engineers, tire people, our guys back in Munich, the drivers - it felt like we were getting 102 percent out of that package. That now continues with the Z4."

As the old saying goes, it's not the size of the dog in the fight, it's the size of the fight in the dog. Or, in the case of BMW Team RLL, it's not the number of people in the team, it's their collective skill and experience - which is considerable. It starts with Bobby Rahal, team principal and often race strategist for the No. 56 Muller/Edwards Z4. Rahal accumulated almost 20 years of experience as an Indy car driver, and now has more than two decades as a team owner. His successes includes three CART titles and Indy 500 victories both as a driver and an owner. And comparable levels of experience run deep in the team.

"Whether it's [team manager] Jim Prescott, Bobby, myself, [race engineer]



Chris Bro/LAT

#### JENS MARQUARDT, BMW MOTORSPORT

Marquardt joined BMW Motorsport at the start of 2011. His responsibilities include overseeing BMW's U.S.-based Z4 GTLM and its eight-car, four-team M4 attack in DTM.

Chris Yanchar, or whoever, we've all been through hundreds of races," says Jay O'Connell, RLL's vice president of technology - but whose role runs much deeper. "When you have a small team, you need each guy to have as much experience as possible, so you can effectively act like a larger team without all those people."

The other component is utilizing the resources wisely; that means, like most race teams, almost everyone does more than one job, usually defined by whether the car is in the shop, the paddock, or on the track.

Every person is essential; it's like a matrix where the sum is greater than the parts, with each team member carrying out their own role while seamlessly interacting with those around them. While some play a more high profile role than others, the BMW Z4s don't make it to the podium without each team member delivering. Here, then, are five guys who help make up the matrix. >



Camden Thrasher

#### BOBBY RAHAL, OWNER

He's best known for his open-wheel exploits, but Rahal's sports car résumé includes wins at the 1981 24 Hours of Daytona and '87 12 Hours of Sebring.



Richard S. James

**SPEED DIALING**

For BMW Team RLL's Jay O'Connell (LEFT) and BMW Motorsport engineer Jürgen Gnamm, swift and effective lines of communication between the Ohio-based RLL squad and BMW Motorsport's Munich HQ are essential.

**JAY O'CONNELL**

Liaison/strategist

Ignore O'Connell's fancy title; what he really does when the car isn't on track is serve as the liaison between the team and BMW Motorsport in Munich.

"I make sure we're focusing on the right areas and we are addressing every issue that comes up. I'm thinking about the future and trying to make sure we're competitive," he says. The race engineers and assistant engineers are reporting to him, and he's putting their ideas together to deliver to Munich. He's using his experience as a race engineer, an OEM engineer and even a driver to make sure the others are thinking about all the different outcomes, pushing them in the direction he thinks will produce the most success.

His past as an OEM engineer helps him understand the culture at BMW

Motorsport - lots of resources, but many meetings, too. There's a lot of consensus building before anything happens, he notes. But in his small team, he has to talk to only two or three people to get something moving.

"You've got to have a bridge between the small empowered race team and the larger company and all its resources," he says. O'Connell is that bridge.

Once the green flag falls, though, he's on the pit box calling the strategy for the No. 55 car. "The strategy part of it is not so much the engineering, but more of the competitive drive inside me and all of us. It's a chess game, and you're using the cars and drivers and tires in all these different moves...how do you play them against each other?"



F. Perce/Williams/LAT

In its restricted GT Le Mans class form, BMW's Z4 GTE produces approx. 480hp from its 4.4-liter V8 engine.

**2013: A RAPID START FOR THE BMW Z4 GTE**

Making its race debut in the then-American Le Mans Series GT class in 2013, the BMW Z4 GTE recorded its first win in only its second event, the Grand Prix of Long Beach. Bill Auberlen (BELOW) and Maxime Martine headed home Dirk Muller and Joey Hand in a 1-2 for BMW Team RLL's M3 replacement. Sharing with John Edwards, GT title contender Muller delivered a second win for the new Z4 at Lime Rock Park, Conn.



Dan Boyer/LAT

**JÜRGEN GNAMM**

BMW Motorsport engineer

O'Connell's counterpart on the BMW Motorsport side is Jürgen Gnamm. He's making the connection to BMW Team RLL on the technical side - development, competition, tires and regulations - and he's also serving as a liaison to the series regarding regulations.

"You need to have strong parties established," says Gnamm. "We have a good team here, and I was lucky to be there from day one. We are pretty comfortable with the relationship so far. If you look at all the records and results over the years, I think this is very clear evidence of a good relationship."

The relationship goes both ways. RLL team members traveled to Munich when the first Z4 GTE was coming together and were involved in it from the beginning; BMW sends three to five engineers to each race, depending on the event, covering the engine, electronics and suspension engineering.

"Strategy-wise, this was one of the major goals, which really gave us a good start and we're up to speed," notes Gnamm. "We were [at Long Beach] last April, second race, and we finished one-two. Even the biggest optimist didn't expect this. But at the end of the day this is an important part of the success - proper preparation." >



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March 28 - 30:  
St. Petersburg  
GT/GT-A/GTS  
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April 11 - 13:  
Long Beach  
GT/GT-A/GTS  
TV: April 20 - 5:30pm

April 25 - 27:  
Barber Motorsports Park  
GT/GT-A/GTS/TC/TCA/TCB  
TV: May 10 - 4pm

May 16 - 18:  
Canadian Tire Motorsport Park  
TC/TCA/TCB  
TV: June 15 - 2:30pm

May 30 - June 1:  
Chevrolet Detroit Belle Isle  
GT/GT-A/GTS  
TV: June 15 - 2:30pm

May 30 - June 1:  
New Jersey Motorsports Park  
TC/TCA/TCB  
TV: June 15 - 2:30pm

June 19 - 21:  
Road America  
GT/GT-A/GTS/TC/TCA/TCB  
TV: July 4 - 6:30pm

July 18 - 20:  
Streets of Toronto  
GT/GT-A/GTS  
TV: August 10 - 1:30pm

August 1 - 3:  
Mid-Ohio Sports Car Course  
GT/GT-A/GTS/TC/TCA/TCB  
TV: August 10 - 1:30pm

August 22 - 24:  
Sonoma Raceway  
GT/GT-A/GTS  
TV: August 30 - 1pm

August 30 - 31:  
Brainerd International Raceway  
TC/TCA/TCB  
TV: September 28 - 2:30pm

September 12 - 13:  
Miller Motorsports Park  
GT/GT-A/GTS/TC/TCA/TCB  
TV: September 28 - 2:30pm

## 2014 Schedule

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Richard S. James

**PRESSURE JOBS**

At the race track, truck driver Doug Hoerig (FAR LEFT) ensures the team's tires are mounted, correctly inflated and correctly assigned. Chief mechanic Mike Kranz is one of the guys fitting those tires at pit stops.

**MIKE KRANZ**

Chief mechanic, No. 56

"Mostly I'm in charge of the car being built as per the specifications from the engineers," explains Mike Kranz, who serves as the chief mechanic for the No. 56 Muller/Edwards Z4. "I do a lot of work on the car, but I also liaise with other people who are doing subassemblies, gearboxes - the timing of when we get things, and making sure that it all comes together when it has to. It's more time management than anything else.

"I directly respond to Chris Yanchar [engineer for the No. 56]. He gets information from Germany and all of us on both cars work as a group. We each start with the same setup, and then we go our own way once we get to the track, depending on if our drivers want something different. I get a sheet with a

whole bunch of numbers and I'm supposed to hit those numbers," he continues.

If things go according to plan, Kranz and the rest of BMW Team RLL pride themselves on being last in and first out of the track. Preparation at the shop is the key, so that once at an event, there's not much that has to be done to the car.

Like most of the crew, when the track is hot, Kranz's role changes. He's the outside tire gun guy, putting on the right front tire and hitting the nut with the tire gun on both.

"Once the race starts, that's the easy part for me," he says. "All I've got to do is make sure my tire is tight once I go over the wall. Once the race starts, it's out of my hands. If I did my job right, everything stays on the car."

**(RIGHT) Mike Kranz swaps team shirt for fireproof suit come race time. The action gets a little more frenetic, but it still all boils down to making zero mistakes.**



Richard S. James



**BMW M3 GT: A TOUGH ACT TO FOLLOW**

BMW Team RLL gave the M3 GT its debut in 2009. The best result from a tough development season was second in class at the season-closing Petit Le Mans.

The following season, the M3 scored a first win at Road America and racked up enough points to take the GT Team Championship. In 2011, a 1-2 in the season-opening 12 Hours of Sebring launched a campaign that landed two more wins and earned Team and Manufacturer Championships, plus a Drivers' Championship for Dirk Muller and Joey Hand.

**DOUG HOERIG**

Truck driver and tire guy for No. 56

It's one thing to say that every piece of a race team is essential, but to truly understand it, think about a race team at the track with no cars. Or if they had cars, no tires. That's where Doug Hoerig comes in, on both counts.

Hoerig is one of BMW Team RLL's truck drivers, piloting the car transporter with another driver. Once on site and given the go signal from IMSA officials, he unloads and sets up the paddock space. Then it's time to switch to tires, taking the wheels over to Michelin to get the rubber for the event, and then making sure the pressures are correct as the weekend progresses.

"Chris [Yanchar] gives me a tire sheet for the pressures and goes over what he wants on which sets for practice and qualifying," Hoerig explains. "For qualifying, I have to get a set of tires stamped. I make sure we have all the right tires, all the right pressures."

The routine is repeated for the race. Hoerig's also the guy holding the fire bottle during pit stops, as required by IMSA rules. Then, when the race is done, he packs up the transporter, hits the highway and heads back to the shop in Hilliard, Ohio, to let the team prep the cars for the next race. >

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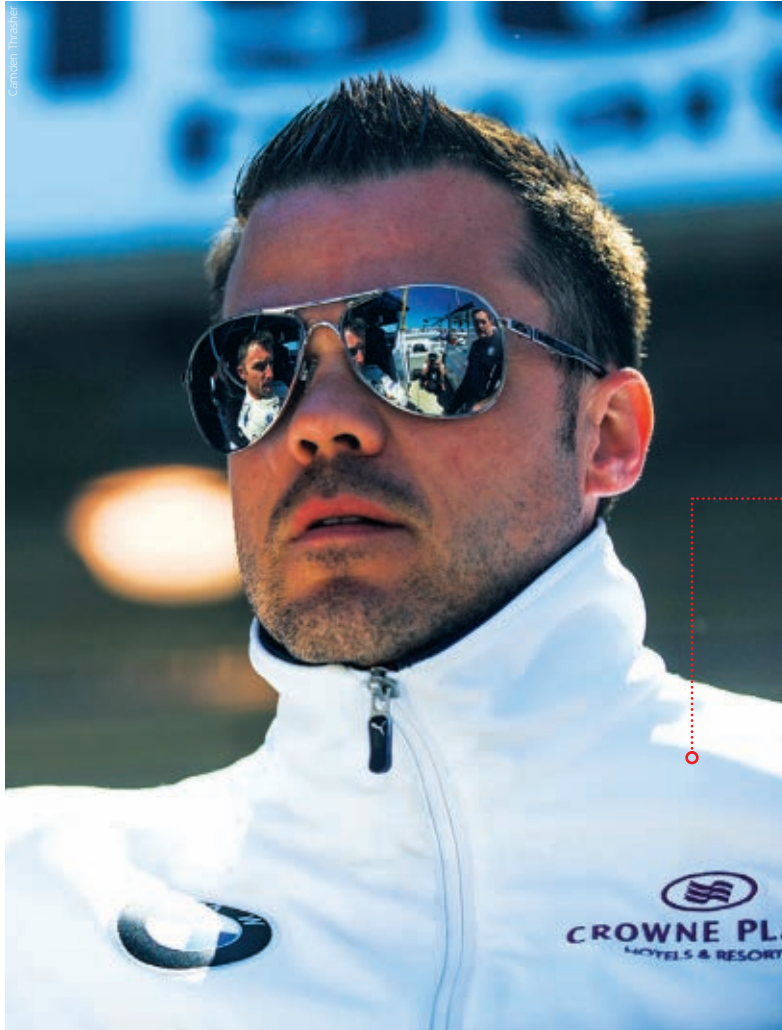


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**DIRK MÜLLER**

Driver, No. 56

Dirk Müller gets all the glory, hoisting the trophy over his head on the podium; but as any driver will, he admits that all the hard work of the crew enables him to be there. While it may appear his job begins and ends when the car goes on track and comes off, it's one that never stops and often pulls him in several different directions at once.

"You have several discussions before the event with your engineer; the engineer and driver are very closely linked together," says Müller. "It's an ongoing communication. They already have ideas of how they want to set up the car, based on experience of past years, so they're pretty good at getting the car to the sweet spot to start with."

The relationship and discussions intensify as a race weekend approaches.

"You run through the practices, who's starting, who's doing which job, who's doing more of the long or short runs," he adds.

There are discussions with co-driver John Edwards to compare data, discuss preferences and figure out how to get the most out of the car. The data guys and engineers will have information for the drivers between sessions, such as gear choice. The PR folks will be reserving time for press interviews. It's a long list.

In the car, Müller is both giving and receiving information from his strategist. Often the strategist is as much a coach and cheerleader as an info source or relay to the engineers and co-driver - especially in the case of one with as much time at the wheel as BMW Team RLL's principal...

**IN FROM THE START**

Dirk Muller was assigned to BMW Team RLL from the start of the M3 program in 2009. Sharing with Joey Hand, the German took the ALMS GT title in 2011. Last year, in the BMW Z4 GTE's debut season, Muller finished runner-up.

**POWERED BY PEOPLE**

The drivers are the most visible piece of the racing team puzzle, and the lynchpin of the team's success. But what they do doesn't happen without all the other pieces falling into place. It takes every person doing their job correctly, especially in a small team, just to get the car onto the track.

But to be a genuinely top team, to get to the podium, especially the final step, requires absolutely maximizing the available resources. Success, and the harsh reality of smaller racing budgets, mandates that teams do an ever-more-amazing job with shrinking assets. But those key assets aren't cars or equipment.

"I think it's the people," says Mike Kranz, who's been with the team for more than a decade, well before the BMW GT program. "We have a lot of people with a lot of experience in the right places. We work well together. We spend more time with these guys than we do our own families. We have a history of being a good team and we retain people well, which is a big deal. We have good people, and we've kept them." ■



Recognition factor... When it comes to differentiating its pair of Z4 GTEs, BMW isn't subtle about it. The No. 56 of Muller/Edwards is white; the No. 55 of Auberlen/Priaux...isn't.



made to **win**



### PUMA AVANTI

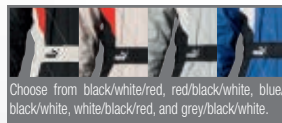
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WORDS Jeff Zurschmeide | MAIN IMAGE Libero Di Zinno

## THE RIGHT STUFF

In 1989, Mazda introduced a car that would shape SCCA competition for 25 years...and counting.

Where were you in the summer of 1989? Do you remember the first time you saw the new Mazda Miata that year? Many Sports Car Club of America members will remember that moment clearly, although many current competitors and National Champions hadn't even been born yet. But while it was obvious that Mazda's new lightweight convertible hit all the right notes to set a sports car lover's heart dancing, what nobody knew back then (though some suspected) is just how profound an impact the little car would have on the SCCA.

"I came into motorsports about the same time the Miata did," says Steve Sanders, Motorsports Development Manager at Mazdaspeed. "There was immediate interest in racing the car in autocross, and the Showroom Stock C class was full of Miatas. The competition was incredible."

### THE EARLY DAYS

Out of the gate, the 1,600cc Miata posed a familiar challenge within the SCCA - where would it be classified to Club race? At the time, new models were required to be a year old before they were classified

into Showroom Stock, and Miata was placed in Showroom Stock C for the 1991 competition year. But not everyone was willing to wait.

Dan Edmunds was a professional test driver as well as a volunteer Flagging and Communications worker for Cal Club Region, and he had some connections to Mazda. Edmunds was among the first to lay eyes and hands on the new car, and he holds the distinction of being the first to bring a Miata to an SCCA Club Racing event. Edmunds took it to a Driver's School and had the first Miata logbook issued in September of 1989. Edmunds and his Miata won the first Southern Pacific Division National race on Feb. 10, 1991, sanctioned by SCCA's Cal Club at Willow Springs Raceway, Calif.

"I got the car in June of 1989, and it was something we were initially going to run in World Challenge," says Edmunds. "I brought it to the last race at Riverside, but we had to keep it in my trailer so no one could see it. We decided not to race in World Challenge for 1990, and you couldn't race a Miata in SCCA Club Racing until 1991, so the car languished until the Willow Springs race in February >

**PAST,  
PRESENT,  
AND FUTURE**

Winning in a Miata has always required skill. Dan Edmunds was there when it all began - with the first Miata ever issued an SCCA log book. "The car is so great at so many levels. You can learn a lot about racing, because the driving matters," he says.

The Miata and MX-5 have now spawned two professional series - first Pro Spec Miata and now its successor, the SCCA Pro Racing Mazda MX-5 Cup. Winning the 2013 MX-5 Cup championship earned Christian Szymczak some help from Mazda to take the next step in his career, which may be SCCA Pro Racing's Pirelli World Challenge.

"MX-5 Cup seemed like a competitive place to get a start," Szymczak says. "There are a lot of good drivers - really good competition, good racing." Now coming up strong for 2014, Joey Bickers is driving Szymczak's line. Bickers is this year's winner of the competitive Mazda Club Racer Shootout.

"I'm very grateful for the opportunity Mazda has given me to compete in the MX-5 Cup," says Bickers, who is also handy in open wheel racing, competing in a Formula Ford event in England in 2013 via the Team USA Scholarship. "I don't want my chances to go to waste. I am very lucky to get the chance to race, and I want to make the most of it."



Perry Bennett

**Built with purpose... While the Miata and newer MX-5 have proven themselves great Solo racers out of the box, they are also very popular cars to modify.**

of that year. I won that race at Willow Springs, really crushed it. I think I took two or three seconds off the lap record."

Among the people who first saw the Miata race at Willow Springs that day was Pratt Cole of Salt Lake City, Utah.

"I went to the race at Willow Springs in a Peugeot, and I was looking for a new car," he says. "Dan Edmunds showed up with that Miata, and I watched him run around and thought, this car is going to be great! I called Steve Sanders and had a Miata ready by the Double National in Seattle in May, and I finished fourth in that car at the [National Championship] Runoffs that year, too."

The Miata fared well in Showroom Stock C in 1991, competing in many Divisions and at the Runoffs. Although Eric Van Cleef took the SSC Championship for Mazda that year, he did it driving a Protege. The Miata's first National Championship in SCCA Club Racing came at the capable hands of Randy Pobst in 1992.

"I had raced against the Miata a couple times the year before, and I saw how good it was," says Pobst. "I found a deal on a Miata, put the roll cage in it the night before my first race, and drove straight to the track. I don't think anyone realized just how good it was going to be."

After Pobst proved the Miata could take the top spot, two-time SSC champion Michael Galati drove a 1.6-liter

**"There was immediate interest in racing the car in autocross, and the Showroom Stock C"**

**STEVE SANDERS**

Miata to his third and fourth championships in 1993 and '94, cementing the car's reputation in that class. Galati also won the SSB National Championship in a 1.8-liter Miata in '97. Galati established the Miata as the car to beat in SSB, with the crown passing to David Daughtery in '98 and '99, and then to Randy Saucier in 2000 and '01, back to Daughtery in '02, and finally to Harry Manning in '03 - all in Miatas.

"In 1992, I won my Division but didn't do so well at the Runoffs," says Galati. "In '93, I switched to BFGoodrich tires and it was a different story; in just two years I won 27 races."

**WINNING IN SOLO**

The Miata was slower to win in SCCA's Solo competition, and it wasn't until 1993 that Marla Davis took home a National win in C Stock Ladies. Bob Klingler followed that up with a Miata C Stock Championship in '94, and Michael Butler took C Stock honors the following year. Guy Ankeny drove a Miata to the C

Street Prepared Championship in 1997.

"Hondas were the weapon of choice until I won in 1997," says Ankeny. "Since then, the Miata has been the most dominant car in CSP. Once the door was open, it hasn't been closed." 1.8-liter Miatas won in B Stock starting in 1997 with back-to-back championships by George Doganis. Garry Thomason took over in 1999, and Peter Raymond won the class in a Miata in both 2000 and '01. Then, in '02, Matthew Braun drove a Miata to C Stock honors, followed by Steve Telehowski in '03 and '04.

"At first it was not clear how high the limits of the car were, so people did not really believe what it could do," says Doganis. "I went through five or six cars before I drove a Miata. I never bought another car. It was obvious to me that the Miata had huge potential."

**THE MIATA'S PRODUCTION RACING DYNASTY**

While the Miata was dominating Showroom Stock in the 1990s, several drivers began the long process of development necessary to succeed in Production racing. The Miata was first classed into E Production in 1993, and San Francisco Region's Terry McCarthy and Showroom Stock veteran Pratt Cole built Miatas for the class.

"Late in 1992, I crashed my car really



Rupert Berrington

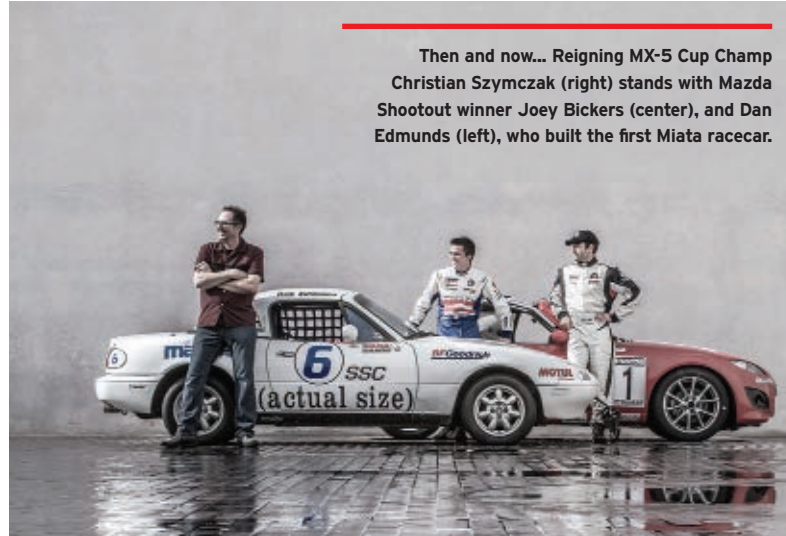
(TOP) Changing The Landscap... Pilar Miranda ended the Honda domination when she won CSPL in 1996. (MIDDLE) Generations... All three iterations of the potent roadster can be found racing side by side in the E Production class. (BOTTOM) Randy Pobst delivered the Miata its first National Championship in SCCA Club Racing in 1992.



Dennis Wood



SportsCar archive



Then and now... Reigning MX-5 Cup Champ Christian Szymczak (right) stands with Mazda Shootout winner Joey Bickers (center), and Dan Edmunds (left), who built the first Miata racecar.

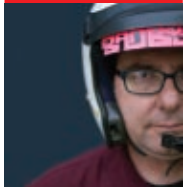
## RALLY A MIATA? WHY NOT?

The Miata doesn't seem like a rally car, but it has been done - in fact, that very first Miata that Dan Edmunds brought to the track in 1989 also did double duty in RallyCross and Rally Sprint in 1999.

"I started reading the rally rulebook and found that there was a class for two-wheel-drive cars under \$5,000," Edmunds says. "I saw that they were holding a RallyCross and Rally Sprint at Holtville, so I borrowed some rally tires and went out and won! It still had the Showroom Stock stickers from the Runoffs the year before."

That Miata won Edmunds the RallyCross and RallySprint Performance Stock class championship that year. Edmunds also entered a Miata in a stage rally in Arizona that year.

Since then, Miatas have dominated classes in National SCCA RallyCross competition, as well, picking up titles in Stock, Prepared, and Modified.



hard at Sears Point [Now Sonoma Raceway, Calif.], and I built that into the E Production car," says Cole.

"The Miata was allowed into E Production for 1993, and I stayed after it. I was going to race until I won."

McCarthy drove his Miata to victory in EP in 1994, and Cole took his turn at the top of the podium in '97, 2001 and '04. Bob Boig took the EP title in a Miata in '98, and Jon Brakke claimed top honors in '03, '10 and '12.

"I raced a Chevrolet Corvair for 20 years, and my brother started racing with British sports cars, and he had gone to Spec Miata," Brakke says. "We looked around and finally chose E Production with the 1999 Miata in Limited Prep. By the time we got to E Production, there were very few full prep cars being run."

Because of Limited Prep rules and the different engines available, the Miata has been eligible to race in both E and F Production, and more recently in GT-Lite. That versatility attracted the father/son team of Kent and Jesse Prather. Kent was already a well-known figure in Production racing, having claimed six prior championships in his MGA. Jesse took the F Production titles in 2006-'07.

"For F Production, the Miata has become the old MG Midget of the '60s, '70s, and '80s," Jesse says.

Rick Harris succeeded Prather by

## "I went through five or six cars before I drove a Miata. I never bought another car"

GEORGE DOGANIS

winning the 2008 F Production title in a Miata. Jesse moved his car to E Production that year and won again. Then Kent took the same car and moved it to GT-Lite, winning the class in '11 and '12.

"In 2010, Jesse and I decided to run the same car in E Production and GT-Lite," says Kent. "We would come in and change tires, change the fuel injection program, and put on the restrictor. We were both able to be competitive in the same car. Then [Jesse built a new] MX-5, so I built a GT-Lite engine and went out and won in 2011 and '12 in the same car. It has five championships on it; three with Jesse and two with me," Kent says.

In addition to winning multiple championships, Jesse has made Jesse Prather Motorsports into one of the leading Production and GT Miata builders in SCCA, attracting customers from across the Club. Jess Heitman of Portland, Ore., plans to compete in F Production at this year's Runoffs. "Jesse has given me invaluable help and

information in building my F Production Miata," Heitman says. "The relationship with everyone has been fabulous."

## CHANGING THE GAME

While the Miata was winning Showroom Stock races in the 1990s, the groundwork was being laid for one of SCCA's most popular classes of all time. By the mid-1990s, Miata road car production had eclipsed both the MG/Austin-Healey Midget and Sprite (355,888 cars) and the MGB (386,789 cars), and by 1997 Mazda had produced more Miatas than both MG models combined. For SCCA members, a plentiful supply of low-cost used sports cars inevitably leads to great racing. The Miata had been classed into Improved Touring S, but was not competitive there, and many drivers believed that a new class was needed.

In the late 1990s, several people around the country were thinking along the same lines. From his vantage point at Mazdaspeed, Steve Sanders was able to connect these people with each other and with the larger SCCA community.

"I can't take credit for all of it, because there were two guys who spearheaded the Spec Miata class," Sanders says. "I set up the part numbers so people could buy the Bilsteins and the correct springs and the sway bar kits. But the two guys who helped launch Spec Miata were >



Both the road going and race prepared Miata have grown over the years, each gaining speed and refinement along the way. (BELOW) Kyung Wootton has collected 10 Solo championships behind the wheel of a Mazda Miata.

**DOWN TO THE WIRE**

Christian Szymczak is a product of the Skip Barber racing program, coming up from the Western Series before moving on to the Formula National, and the Barber Dodge Pro Series.

Szymczak joined the SCCA Pro Racing Mazda MX-5 Cup in 2012, where he scored his first SCCA Pro Racing win and finished the season fourth in the standings.

The 2013 season was a take-no-prisoners assault, as Szymczak commanded 10 of 12 pole position and four race wins on his way to the overall title.

While it may sound like the 2013 season was a runaway for Szymczak, in actuality it came down to a scant four-point margin over Elliot Skeer, who had claimed five wins.



David delGenio and Shannon McMasters.”

With help from Sanders at Mazda, delGenio in the northeast plus McMasters and Tim Evans in Texas put together a unified set of rules and built several cars.

“I had been involved with the Miata starting in 1991 building SSC/SSB cars,” delGenio says. “By 1995, when there were used up 1.6-liter SSC cars, Shannon McMasters down in Texas moved his thoughts and efforts to the Miata. It was 1997 when Steve Sanders asked if I would help. We agreed on the original rules and I put together the suspension and tire package. Then Shannon and I turned into salesmen.”

Then things really began to take off when Jim Daniels joined the team to promote the class. The tipping point for Spec Miata happened when a major effort came together between McMasters, delGenio, Daniels, and Mazda to bring as many cars as possible to the American Road Race of Champions (ARRC) at Road Atlanta in the fall of 1999 to showcase the class.

“We put together a tow, tire, and entry assistance program to get the Texas and New England cars racing in Georgia, and it ended up being the second largest class that first year.”

With the Spec Miata concept proven at the ARRC, the next step was to get the Regions on board. Jim Daniels became



Rupert L. Berrington

**“The ingredients [for Spec Miata] were all there - it just needed someone to strike the match”**

**JIM DANIELS**

the master of the SpecMiata.com Website and forum, and he set out to promote the new class to the Regions.

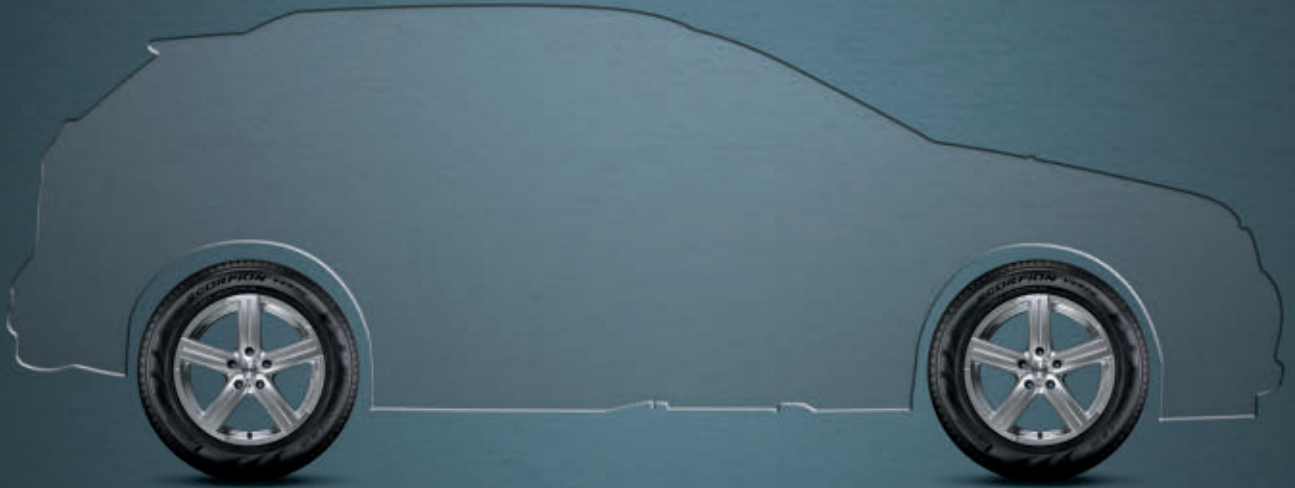
“The ingredients were all there - it just needed someone to strike the match,” says Daniels. “We had to call all the Regions to get their fax numbers, and I made up a one-page flyer that said Spec Miata was going to revolutionize your Region. I did a broadcast fax to every Regional Executive in the Club.”

By the end of 1999, racers were building Spec Miatas all over the country, and the class took Regional racing by storm. The next few years were

characterized by huge success, as well as the struggles that often accompany success. Efforts to keep costs down and the competition close were only partially successful, but class numbers kept increasing. With that success, the pressure to make Spec Miata a National class built up quickly. After several years of robust growth, Spec Miata achieved nationwide rules with its own section in the GCR for 2004, and became a National Championship class in 2006.

The 2006 championship race drew an impressive 61 entries, and 55 Miatas started the race. Andrew Caddell of Northwest Region became the first Spec Miata National Champion. The class has become even stronger at the Runoffs in the years since, setting Runoffs class size records of 60 starters in 2010 and 69 starters in '13. In a testament to the close competition, it was not until the eighth National Championship was awarded that Spec Miata saw a repeat winner: Jim Drago won in 2012-'13.

“I really think people enjoy the racing and the camaraderie,” says Drago. “Since the beginning of Spec Miata, it’s been a little different. Everyone has spare parts, and often you’ll see different teams and different guys helping other competitors get their cars together. Everyone wants to win, but we want to beat the other guys at their best.” >



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For the last 25 years, the Miata has made a significant impact on the Club, and it undoubtedly will for decades to come.

CLIMBING

Joey Bickers is the latest racer to climb the Mazda Ladder to Pro Racing, having won the highly competitive Mazda Club Racer Shootout.

Originally drawn to off-roading, it was not until Bickers discovered karting that his path would be set to road racing. "In February 2012, I went to the Jim Hall Kart Racing School," says Bickers. "It was in those first few laps that I knew this is what I was going to do; I was going to try my very best to make [racing] my career."

In a short time Bickers has garnered a lot of attention from the right people, earning him a spot in the Team USA Scholarship program, which afforded him the opportunity to compete in England, and now a factory-backed MX-5 Cup ride.



Lebero D. Zinno

Beyond the Runoffs, Spec Miata is now a critical source of participation and revenue for SCCA Regions around the country. Sustained participation has meant the difference between red and black ink from coast to coast, and the class has brought hundreds of new racers into the Club, with Spec Miata consistently finishing in the top two - more often in the top spot - for overall class participation.

THE MIATA GOES PRO

When the Miata was introduced, the first racing venue to classify the car was the brand-new SCCA Pro Racing World Challenge series. The Miata was placed in the Super Production class, along with cars such as the Honda CRX and Eagle Talon. Two cars were commissioned by Mazda and developed by Rod Millen Motorsports, but they achieved no great success in World Challenge and the Miata did not come back to SCCA Pro Racing until the advent of the Mazda Speed Miata Cup series in 2003.

The Miata Cup offered Pacific and Atlantic championships from 2003-'05, and was replaced for 2006 by the Mazda MX-5 Cup, featuring the third-generation Mazda MX-5 in a completely specified configuration. After working to promote Spec Miata at the Club level, Jim Daniels became the first

**"Everyone likes to start with fancy cars, but the Miata was a great launch to my career"**

MICHAEL GALATI

MX-5 Cup champion.

From the beginning, the Miata has helped boost professional racing careers. SSC Champions Pobst and Galati went on to stellar careers in the SCCA Pro Racing Pirelli World Challenge, with Pobst earning four championships and Galati holding five.

"Everyone likes to start with fancy cars, but the Miata was a great launch to my career," says Galati. "The reliability was incredible, so you could finish and win. With low horsepower, you really develop your skills."

MX-5 Cup has been the immediate SCCA Pro Racing destination for several Spec Miata National Champions over the years. First Caddell, then 2007 Champion Brad Rampelberg, and 2008 Champion Eric Foss have all taken a turn in MX-5 Cup, and then moved on to World Challenge and other professional series.

"I truly believe driving a Miata helped my racing career tremendously," Caddell says. "The skills I learned in a Miata translated well to every other car."

INTO THE FUTURE

As the MX-5 Miata celebrates its 25th anniversary, the phenomenon shows no signs of weakening. With over one million Miata and MX-5 models produced to date, there are plenty of affordable racecars still on the road. There's a harmony among the leading Miata racers in SCCA when it comes to the future prospects for the little car: all see the Miata continuing as a mainstay of the Club.

Jim Daniels plans to return to the Runoffs for 2014 in Pratt Cole's EP Miata, and he has a vision for the future of Spec Miata: "I think you're going to see the MX-5 merged into Spec Miata."

Jesse Prather is equally optimistic. "As long as Mazda continues its awesome support of the car, I think we're going to see many years of Miatas in Production racing," he says.

Mazda has no plans to abandon its legacy. "The Miata has really been the lifeblood of our motorsports program for the last 25 years - it's been the biggest success in Mazda Motorsports ever," says Sanders.

Pobst's analysis is simple: "The Miata is the modern version of the classic sports car upon which the SCCA was built. Just like all those elemental sports cars that are well-balanced with great handling and feel, in the modern era, the Miata is the quintessential sports car." ■

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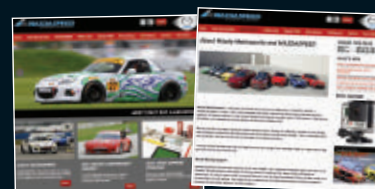
With everything from advice from experts (ABOVE) to the latest race news (BELOW), **mazdamotorsports.com** is an essential resource for all Mazda racers.

MAZDASPEED Motorsports Development, **mazdamotorsports.com** is the one-stop shop for all things related to Mazda racing. That includes everything from autocross, to SCCA and NASA club racing, to Mazda MX-5 Cup Presented by BFGoodrich Tires, to the new Mazda SKYACTIV-D Prototypes in the TUDOR United SportsCar Championships that are prepared and raced by Tremblay's SpeedSource Race Engineering.

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Recent posts include multi-time champion driver Pobst, who's currently leading the Continental Tire SportsCar Challenge Street Tuner class points with Andrew Carbonell in their Freedom Autosport Mazda MX-5, on how to deal with traffic in multi-class racing; getting the most life out of your race tires; keeping a trailer organized so that the race weekend runs as smoothly as possible; how to strategize an endurance race; and how racers keep fit to maximize their performance on the race track - and all featuring input from recognized experts.

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# KRISTENSEN'S KEYS TO LE MANS

Winning once at the 24 Hours of Le Mans is tough enough. Nine times? That defies belief. Tom Kristensen, the man who's achieved that feat, imparts some of his Le Mans wisdom...

With nine outright victories at the 24 Hours of Le Mans - three more, and counting, than the next most successful driver - Tom Kristensen knows a little bit about what it takes to win the world's most prestigious endurance race.

The Dane won on his Le Mans debut in 1997, partnered by the more experienced pairing of Michele Alboreto and Stefan Johansson in a TWR Porsche WSC-95. Since then, he's added eight more victories from a total of just 17 starts - seven of them coming in factory or privateer Audis and one with its sister company, Bentley.

It's a phenomenal record, and with the ninth win coming just last year at the wheel of an Audi R18 e-tron quattro, the story isn't over yet for Kristensen.

But knowing what it takes to win *isn't* the same as winning. There are no foregone conclusions at the *Grand Prix de l'Endurance*. Twice Kristensen has seen enormous leads flip-flop into DNFs in the blink of an eye and as "TK" guides *RACER* through some of the elements that can help toward success at the 24 Hours of Le Mans, he begins by explaining that there are no magic bullets.

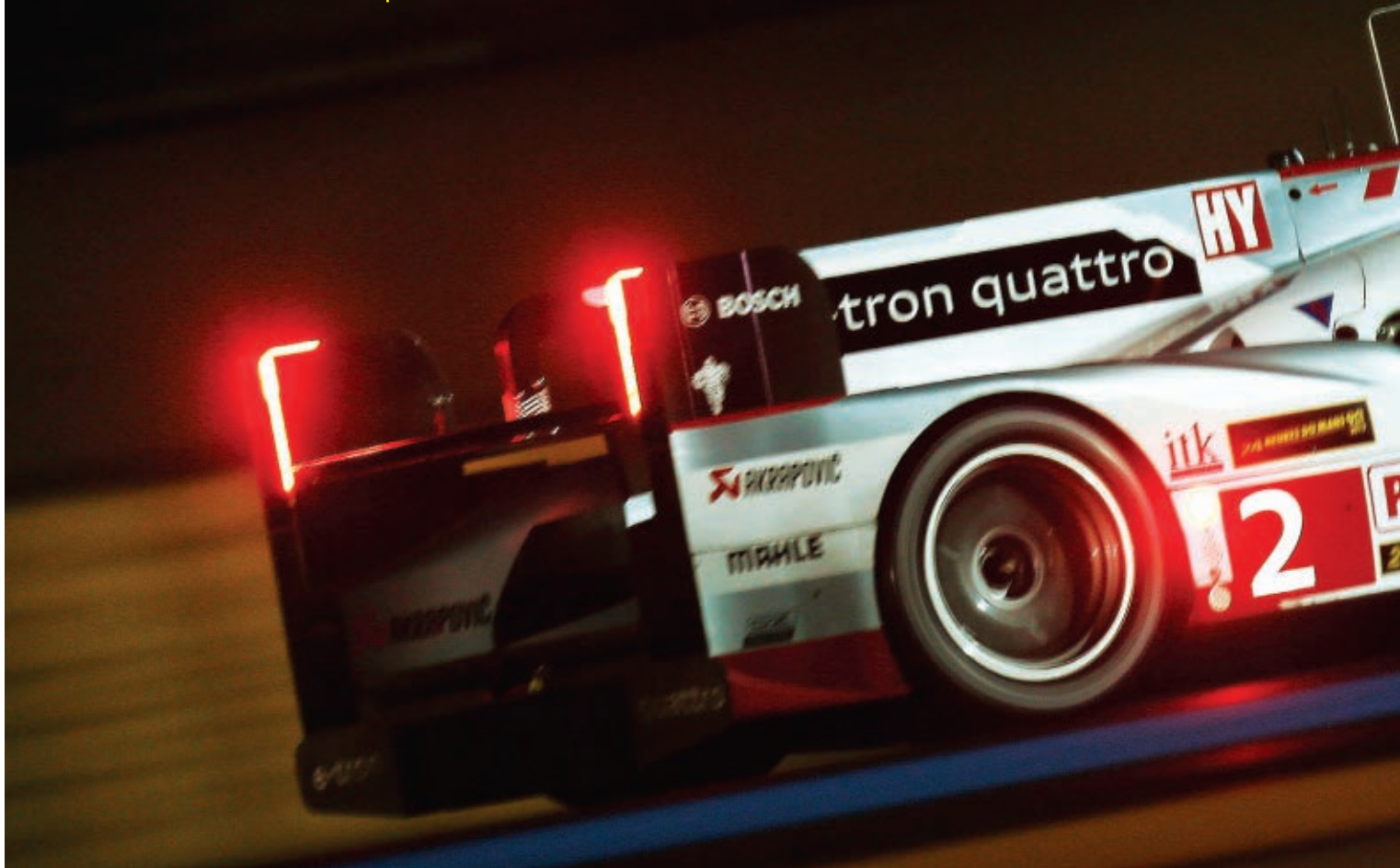
## KNOW THAT THERE ARE NO SECRETS TO SUCCESS

Dedication and hard work are required for success in any motor race, but even more so at Le Mans. That goes for the team and the drivers. You need to be hard on yourself to do well.

The workload has grown in magnitude over my time in sports car racing. Compared to today, things like systems checks and debriefs were completely different when I started out back in 1997.

Of course, luck plays its part, too. You think you've planned and prepared for

WORDS Gary Watkins | MAIN IMAGE Alastair Staley/LAT



every eventuality, but this is a race that will still throw up surprises. Always. It's why Le Mans is Le Mans.

### WORK HARD IN TESTING

When you go into Le Mans or any other race when you are driving for Audi, you know you're getting into a car that will do the distance. That's a major plus that goes back to that old saying that everyone knows: to finish first, first you have to...

The way Audi goes about its endurance simulations is very clinical. It doesn't mix development testing with its endurance



Daniel Kalisz/LAT

### TK RÉSUMÉ

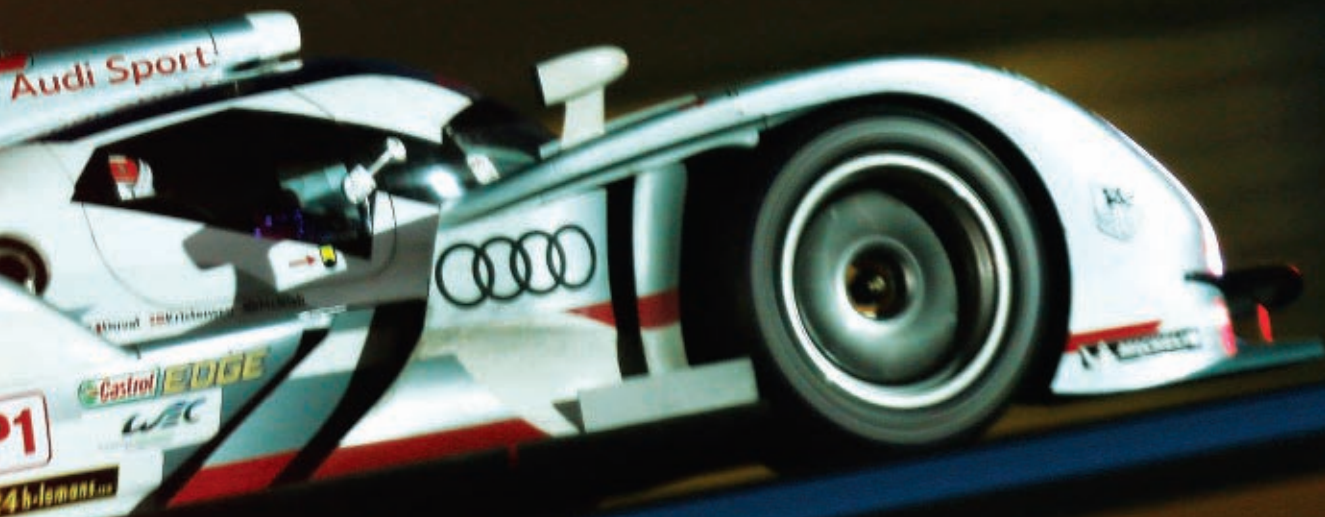
**Born:** Denmark, 7/7/67 (aged 46)

**Titles:** 2013 FIA WEC, '01 ALMS

simulations, which I think has been one of the keys to its success down the years. As a driver, you always think that you'd like to optimize this or that, try something else on setup, or whatever. But it doesn't work if you try to do development at the same time as endurance testing. [aliqui off](#)

### ACKNOWLEDGE THAT THERE IS NO "I" IN TEAM

When you come out of open-wheel racing, where everything is about me, myself and I, and arrive in endurance racing, you have to learn that there's no >



(MAIN) Tom Kristensen's ninth Le Mans win came with the Audi R18 e-tron quattro in 2013. With Porsche joining Audi and Toyota in the fight for the overall victory, it will only get tougher in '14, but "TK" will be as ready as always.

(MAIN) Somewhere in that blizzard of champagne is Tom Kristensen, celebrating his eighth 24 Hours of Le Mans win in 2008. (BELOW RIGHT) It's not just the drivers who need to bring their A-game to Le Mans; slick pit work is essential for success, too.



RICHARD DOBE



LAT archive

**OTHER SERIAL LE MANS WINNERS**

Before Tom Kristensen rewrote the records, six-time Le Mans winner Jacky Ickx (ABOVE, left) seemed beyond reach. The Belgian racked up No. 6 in the 13th of 15 starts.

Derek Bell (ABOVE, right), Frank Biela and Emanuele Pirro are next up with five wins apiece. Bell took three of his with Ickx, while Biela and Pirro did the same with Kristensen.

Noteworthy, too, is A.J. Foyt's 1967 win (BELOW). Along with 1928-'30 triple victor Woolf Barnato, he's the only driver with a 100 percent Le Mans win record.



LAT archive

"I" in team. It's not about me, it's about we. You need to understand your teammates and they need to understand you, and you have to support each other. I know that in those circumstances I deliver the best I possibly can. With the experience I now have, I try to pass that on to my teammates and help them in the same way that Michele [Alboreto] and Stefan [Johansson] did when I first came to Le Mans.

Since my Bentley year [2003], I've always made sure that I travel to and from the track with my teammates over the course of a race weekend. That gives you a quiet time together and you can say everything you need to say to each other in private. I think it's one of the most important things that we've done to bring everyone together as a team. It's something that helps you click as a group and make you one force.

**YOU MUST CONCENTRATE, AND CONCENTRATE HARD**

The importance of concentration is completely underrated at Le Mans. Some say that because it's a long track, with the long straight and not so many corners, you get a chance to relax. That's certainly not true: you have to be focused and concentrated 100 percent of the time.

The next overtaking maneuver you do is always the most important one. You might recognize the car ahead and remember that the driver left you room last time you passed it, but the car might have been in the pits since then and



Jeff Bloxham/LAT

have a different driver behind the wheel now. You always have to be alert.

The mental demands placed on the driver are even higher today than in the past. The new breed of LMP1 car is a highly complex machine and so much is being asked of the driver in the cockpit. There's no doubt to my mind that LMP1 is the most challenging form of motorsport anywhere in the world right now.

**PICK YOUR MOMENTS IN TRAFFIC**

There is an element of controlled risk-taking at Le Mans, but you can't take risks just for the sake of lap time. The difference between those two zones is very small. But you have to remember that the winners at Le Mans are always the drivers who have taken the correct way around the GT cars.

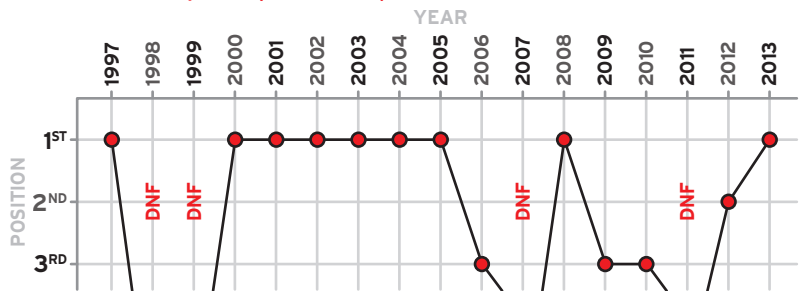
**GET ON YOUR BIKE**

Fitness is very important because it gives you the ability to concentrate better. If you are not fit, you cannot get the best out of yourself. Weight is important, especially these days, so training is very important for me.

I do some kind of training, whether it is running, cycling, or core training in the gym, every single day. Most days I will run 10 or 15km [six or nine miles] >

**TK @ LM24: PODIUM OR BUST**

In his 17 starts, Tom Kristensen either goes home early or steps out on to the podium. His nine wins are joined by one second-place finish, three thirds and four DNFs.



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Geoff Bloxham/LAT

or go for a long cycle ride.

As I've become older - and I am now the oldest of the Audi LMP1 drivers, although I didn't realize that until quite recently - my training has become more disciplined. I certainly wouldn't say I train any harder, just in a more focused and tailored way now. For example, if I go running, I now incorporate some interval work. It all helps.

**"I know that if I am not there on the stopwatch on one lap, I can be there the next lap"**

**TOM KRISTENSEN**

**CHECK YOUR FLUID LEVELS**

Fuel for your body is important, of course. But what you eat is not the most important part of preparing your body for Le Mans. What you drink, however, is crucial. A lot of water is important, and you have to make sure you have the right mix of minerals in your drinks bottle when you begin a stint.

I do eat some carbohydrates, but I'm not a big one for pasta. The key for me is to eat little and often. I take small bites here and there, and try to eat less than I would normally.

**LEARN FROM YOUR PAST**

That 1997 race, my first 24 Hours, has



Jacob Eberly/LAT

**(ABOVE) With Audi's factory squad taking a sabbatical in '03, "TK" earned a fifth Le Mans win with sister marque Bentley. (LEFT) Audi will bring its latest R18 e-tron quattro to the fight in 2014.**

been an important part of my energy at Le Mans over the years. I got to grips with the place in my first year, both in the day and at night, even though I did hardly any laps in qualifying. I came away with the lap record and that is something that I can fall back on. I know that if I am not there on the stopwatch on one lap, I can be there the next lap. My first Le Mans gave me the belief that I can do what is required.

**YOU DON'T NECESSARILY NEED THE FASTEST CAR**

Sometimes over one lap we haven't been fastest, and certainly not in terms of straightline speed. At Audi we've always been a bit down on maximum speed on the straights, but that is our way.

Performance at Le Mans is a complex thing, and it has become even more complicated with the new breed of LMP1. With the new fuel limitations we have, it will be even more crucial to get the right strategy to be fast over one lap, over a stint, and over the 24 hours. ■

**NINE COULD HAVE BEEN 12...**

**THE ONES THAT GOT AWAY**

**1999** Kristensen, Jorg Muller and JJ Lehto are leading by almost four laps in a factory Schnitzer BMW V12 LMR when the throttle sticks open for Lehto in the Porsche Curves, putting them out of the race.

"This is my biggest disappointment at Le Mans. I'd won in 1997, and then in '98, BMW could have been real contenders. We had to withdraw the cars early with a wheelbearing problem. That was terrible, because it felt like we were giving up. The following year with the new car, we'd already won the 12 Hours of Sebring, but before Le Mans all the talk was about the other manufacturers. To be leading by more than three laps and then go out was a tough blow."

**2007** The Audi R10 TDI Kristensen shares with Allan McNish and Rinaldo Capello is more than four laps in front when a wheel comes off and sends Capello off the track at Indianapolis.

"Seeing the car go off and then Dindo [Capello] keeping his helmet on when he couldn't get the car back to the pits, and knowing he was crying, was pretty hard to take. We were so far in the lead and we could have cruised around from that point - and the the car was due in the pits one or two laps later anyway.."



Alastair Skirrow/LAT

**It was plain sailing for Kristensen (ABOVE), McNish and Capello in 2007 - until a wheel parted company with their Audi R10 TDI.**

**2012** Kristensen, McNish and Capello are in a close fight with the sister Audi R18 e-tron quattro of Andre Lotterer, Benoit Treliuyer and Marcel Fassler over the closing stages. The chance of victory disappears when McNish crashes overtaking a GTE class Ferrari.

"If we'd won, everyone would have said we were the deserved winners. It was such a close fight that it could have gone either way. But there wasn't so much disappointment. The overriding emotion was the relief of recovering to finish second, rather than disappointment of not winning."

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WORDS Jonathan Bomarito  
 MAIN IMAGE Michael Levitt/LAT



## VERSATILE WITH A VIPER

That's not a show in Vegas, but a requirement for SRT drivers in the TUDOR Championship.

Four races into IMSA's TUDOR United SportsCar Championship and the teams have had to deal with a 24-hour enduro on an oval/infield road course, a 12-hour race on bumpy concrete runways, a 100-minute sprint on a street course, and a two-hour fight on a natural terrain road course. Team SRT's **Jonathan Bomarito** explains how he adapts his driving style to suit, even if the results don't always reflect the Viper's pace...

We were fast at Daytona, but had incidents; we would have won Sebring, but got hosed by the non-call for the winner's earlier incident; at Long Beach we had a power steering issue. At Laguna Seca, we qualified badly, but had good race pace. Then a wheelnut problem delayed us, and the race stayed caution-free, so there was

**"In a race, managing tires is the only thing holding me back from driving like I would on a qualifying lap!"**

**JONATHAN BOMARITO**

no way to regain the time lost on pit lane.

In other words, we're at our most unlucky when we're at our fastest - that's called typical racing luck! Still, it's always fun to drive the SRT Viper, and I'm loving the diversity of the challenges that the TUDOR Championship throws at us.

Funny thing is, a driver's approach to these races is not as different as you'd expect. Sports car racing has changed over the last couple of decades. Drivers

no longer have to nurse their cars because reliability has improved so much, and the competition is so deep and fierce that you're pretty much driving as hard as you can. Track position is key.

The way I look at it is that even in a 24-hour race, each individual driver's stint is a sprint. Your only restriction, as in any form of racing, is not to go too hard and burn off the tires before the stint's over. In a race, managing tire life is the only thing holding me back from driving the Viper like I would on a qualifying lap!

That said, there is a difference between the enduros and the sprint races, and that's the risks you take in traffic. If there's 12 hours to go, a GTLM driver is going to think twice about making a late lapping maneuver on a GTD car, for



The TUDOR Championship's diverse tracks and race durations demand subtle variations of approach by the drivers, as well as very different car setups.

example. In a race that's just 100 minutes long with only 40 to go, if you're trying to pull away from a rival behind you, or close up on the car in front, yeah, you're going to go for that car-sized gap between the backmarker and the wall...

When it comes to letting prototypes through, there are different approaches

that depend on the circuit rather than the length of the race. At Long Beach we could almost dictate where we let them through because we seem to create more mechanical grip at those point and shoot turns, so they're hesitant to go off line. But at Laguna Seca, with those fast turns, the prototypes' aerodynamics gave a lot of grip, and so the drivers are more aggressive. Running off line to let them through, aside from the pick up on your tires, really upsets a driver's flow, because that's such a rhythm track.

Thankfully now we're looking to tracks where the Viper is proven to work well, so I'm very optimistic about going to the top of the points table. But like I've explained, whatever the length of race, we'll be going flat-out to do that. ■



Paul Wesley/LAT



Richard Prince

### THREE MEN, A SNAKE AND A TARGET

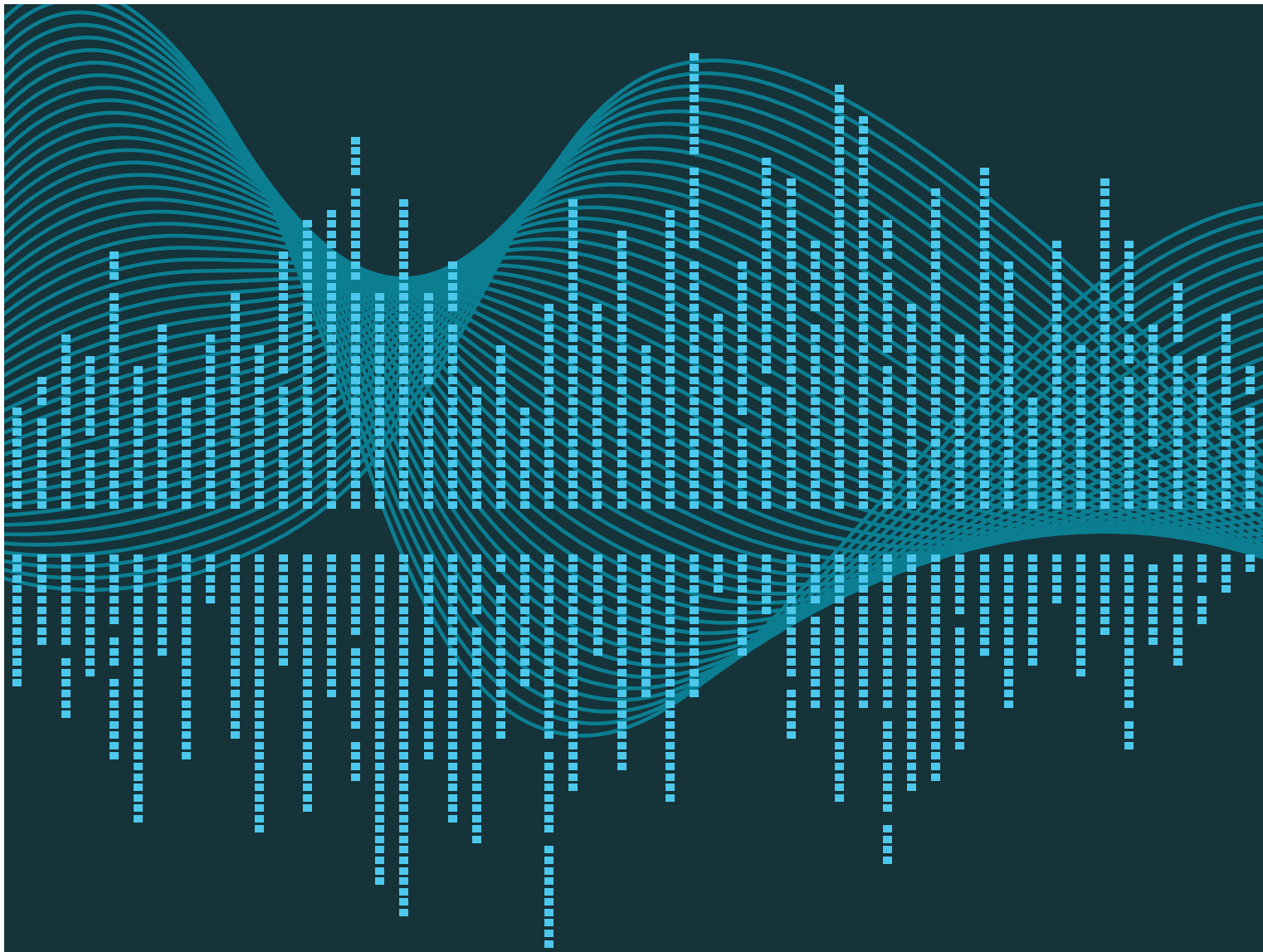
Jonathan Bomarito (on left) and Kuno Wittmer (right) are joined by Rob Bell for the endurance races. This trio has shown strong pace this season, and as JB alluded to, Sebring should have been theirs. But there's opportunity and time to regain lost ground.

"We should be fast at Watkins Glen," says Bomarito, "and last year at Mosport we took second and third. I'm unsure about the Indy road course, but Road America is where the Viper got its first win last year. Our rivals are strong, but we can match them."



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**SRT**



# THE ART OF NOISE

With the aural experience such a big part of auto racing, the new breed of Formula 1 power units faced criticism for their lack of sonic thrills. Why so?

WORDS Marshall Pruett  
MAIN IMAGE iStock/Teacpt

All it took was a change in Formula 1 engine regulations for the exhaust note's seminal role to be thrust into the headlines, and if you find yourself underwhelmed with the sounds emanating from the new 1.6-liter turbos, you're not alone.

"It is s\*\*t," said four-time F1 World Champion Sebastian Vettel. "For the fans it isn't good. F1 has to be spectacular, and sound is one of the most important things."

F1's ownership of racing's best sonic signature was forfeited when screaming V8s were replaced by "hushed hairdryers." But this year's passing of the torch from naturally-aspirated to turbocharged engines wasn't the first of its kind in grand prix racing.

The last time turbocharging arrived on the scene, back in 1977, F1 stumbled upon what many regard as the most stunning 12-year span of soundscapes - turbo and

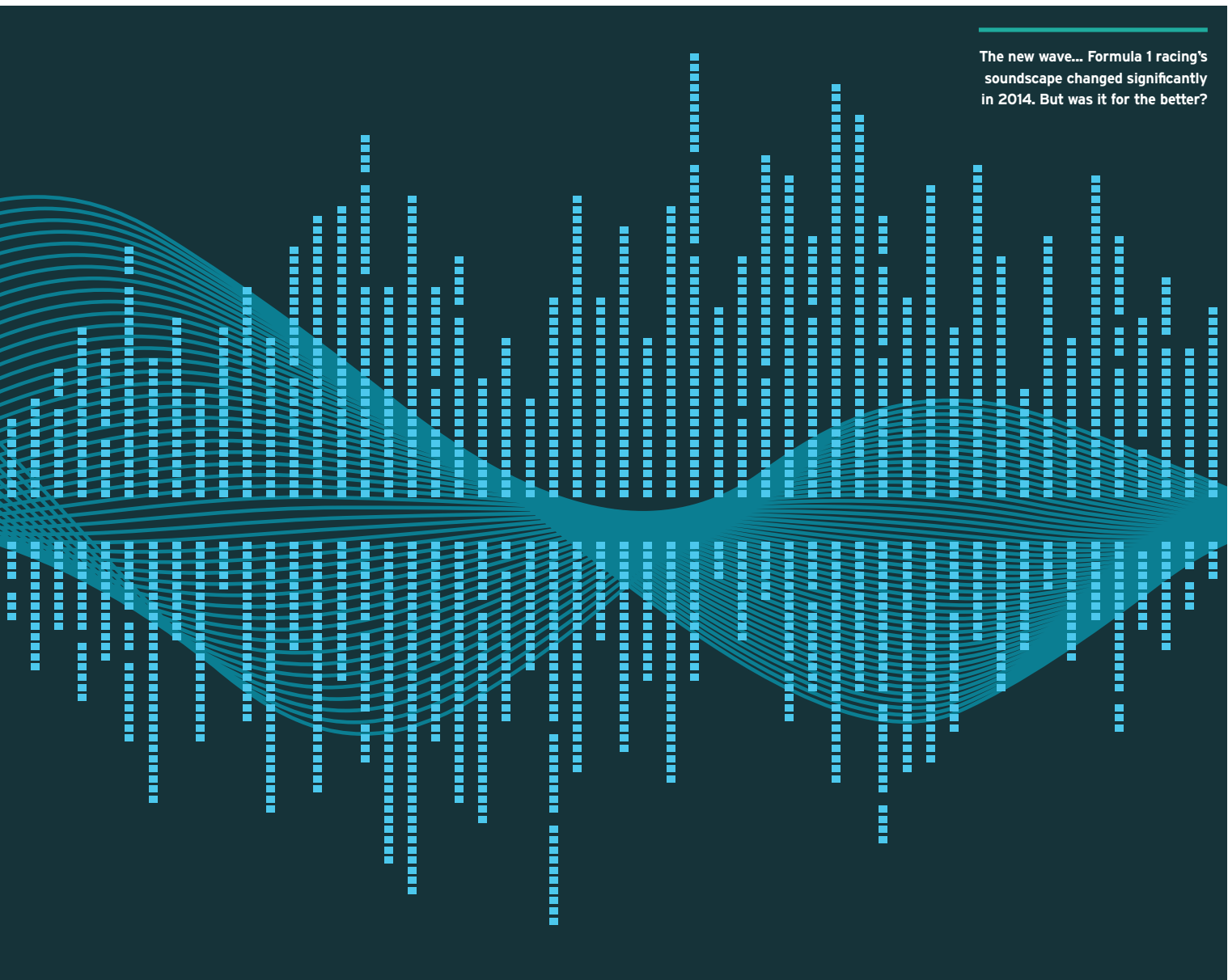
non-turbo alike - the sport's ever heard.

"I was invited by Ferrari to come and do a week of testing at Maranello in '79," says former F1 and Indy car driver Eddie Cheever. "That was the first time I'd ever driven an F1 car and it was a flat-12. I still remember the sounds of it, how it vibrated, and it stuck in my mind as a thing of beauty. The turbos followed and had a character of their own...very different, very violent."

Those 12 prancing horses are to engine audiophiles what Led Zeppelin is to rock 'n' roll lovers. Yet, by 1981, they'd given way to Ferrari's 1.5-liter, twin-turbo V6 as it joined F1 turbo pioneer Renault and early adopter Hart in the forced-induction club.

Yes, V12s from Alfa Romeo and Matra continued to fill the air with joy, but the massive power offered by turbocharging meant time was running out on the 3-liter,

The new wave... Formula 1 racing's soundscape changed significantly in 2014. But was it for the better?



naturally-aspirated era. By the mid-1980s, 1.5-liter turbos from Honda, Porsche, BMW, Ferrari, Cosworth, Alfa Romeo and boutique manufacturers came in inline-4, V6 and V8 packages that cracked the 1,000hp mark while revving beyond 12,000rpm. Quiet? Nope. Sonically brutal and raw? Definitely.

Fast forward 30 years and F1 finds itself back in a nearly identical place - 12,000rpm from small-displacement (1.6-liter) turbo V6s, yet the reaction to their sound has been entirely different.

"Nobody complained about the noise of the turbos back in the 1980s," says Stefan Johansson, who tasted four-digit turbo power while driving for Ferrari in 1985 and '86. "The cars were spectacularly quick and wild and crazy, and I can't recall one single person ever moaning."

So why such love for the '80s turbos and



LAT archive

Mark Thompson/Getty Images

Alexar Staley/LAT

**THE ORIGINAL TURBO ERA, 1977-'88**

A 1.5-liter, turbo option had been in F1's rule book since 1966, but it wasn't until Renault's '77 V6 that one appeared. By 1986, 1,000hp-plus was the norm. For its final two seasons, boost was limited.

**FAREWELL TO F1'S ATMOS...**

The 2.4-liter, naturally-aspirated V8s F1 ditched at the end of 2013 were first used in '06. From '09, an 18,000rpm cap, spec freezes and limits on engines used per season capped power at approx. 750hp.

**...HELLO TO HYBRID POWER UNITS**

A turbo, 1.6-liter V6 produces around 600hp. Kinetic and heat energy recovery systems add another 160 or so. Just 100 kilos of fuel and flow limits prevent power level escalations (in theory...).

disdain for the versions F1 has brought in for 2014? The answer is power and variety, and one could argue an increase in both ingredients would fix the current formula.

"When we had 1,500hp-plus in the Ferrari in qualifying, the sound, the sheer brutality of the energy out of the thing was incredible," adds Johansson. "You felt it as much as you heard it. Amazing."

A mid-'80s F1 grid was unforgettable, in part, because of the fury and mayhem exploding out of the exhaust ports. F1's original turbo formula called upon the tiny 1.5-liter engines to produce every drop of power on their own - no energy recovery systems riding tandem back then - so a forced-induction arms race escalated, with the resulting sounds akin to rocket salvos.

Aided by two energy recovery systems (a kinetic- and a heat-energy based one), >



Andy Hone/LAT



LAT #0106

today's 1.6-liter turbos are only one element of the power solution. Early estimates for the 2014 engines put power in the 600hp range. With another 160 or so coming from ERS, the combo pushes out close to 800hp. Compared to the turbo monsters that raced with upwards of 1,000hp on their own, 600 muted horses (see sidebar, right) was never going to leave much of an audio signature.

A mixture of engine philosophies also kept F1's turbo soundtrack diverse and interesting. Take ridiculous power, route it through four, six or eight cylinders, and enjoy the resulting splendid cacophony.

"I liked the sound of the previous turbo F1 cars; it was quite a deep, low tone, but you could almost feel the power in the grandstand and the engines were unique in the sounds they made," says '03 Indy 500 winner Gil de Ferran. "A Renault, in particular, sounded very cool, and you could tell who had which engines - a Ligier was different from a McLaren, and so on. Manufacturers all had their own ideas on how many cylinders and how to do the turbos, which added to the complexity of the experience."

Another element that made F1's first dalliance with turbos so pleasing to the ear was a more open rule book. Today's engine designers are painted into the tightest of

corners, making the lack of dynamic noises a result of utterly stifling regulations.

Fans went from spine-tingling, screaming 20,000rpm-plus V10s, to V8s limited to 18,000 (still aurally impressive), to 2014's emotionless, undistinguishable turbo V6s.

F1's turbos were followed by a return to naturally-aspirated engines in 1989, and the bar was moved beyond reach once the "atmos" arrived. V8s, V10s and

**(ABOVE) It sure looks like Formula 1, but 2014's all-new incarnation has a distinctively different sonic footprint. (LEFT) Gil de Ferran puts Honda's 2000 CART engine first for sound.**

**"When we had 1,500hp-plus in the Ferrari, the sheer brutality of the energy was amazing"**

**STEFAN JOHANSSON**

V12s ruled and, by '91, five different V12 powerplants were on the grid and F1 had reached its melodious peak. From '77 through '91, naturally-aspirated to turbo and back, F1 wrote its greatest hits.

But F1 isn't alone - other series have also gone through changes in exhaust notes. The IndyCar Series went through a progression of sounds, from its inherited 2.65-liter, single-turbo V8s, to raucous, naturally-aspirated IRL V8s, to the current, comparatively quiet 2.2-liter twin-turbo V6s.

De Ferran rates the CART engine he used to set the closed-circuit record of 241.428mph at Fontana in 2000 as the best-sounding powerplant he's heard.

"The Honda 2.65-liter V8s were my favorite, no question," he notes. "They were super powerful and, to my ears, sounded absolutely fantastic, even in the car. You could feel the power and the revs driving up at a ridiculous rate of noise. It was just >

**SOUND AFFECTS**

**CAN F1 BRING THE NOISE?**

Formula 1 supremo Bernie Ecclestone promised fixes would be on the way after the world panned the sounds emanating from F1's new turbos. But was it lip service, or can something actually be done within the current tech formula to add more bark and bite?

"It just depends how much energy you're pushing through the exhaust," says Ilmor Engineering president Paul Ray, whose firm produces Chevy's twin-turbo IndyCar engine and parent company builds Mercedes' F1 power units. "Sending all of the energy through a turbocharger to boost the engine is going to decrease the energy coming out of the exhausts to a large degree, and that's true with any turbocharged engine. F1's boost levels are so high, they're absorbing high amounts of energy, so you're bound by definition to make the exhaust note quieter as you put more energy through."

"There's not a lot you can do unless you start to divert some of that energy to put it directly out of the tailpipe, but then you're lowering the energy - the boost - being fed to the motor."

Moving to individual exhaust outlets for each bank, rather than the single unit, would help, as would a greater reliance on power from the internal combustion engine.

"Formula 1 engines aren't being as stressed as they once were, and with KERS accounting for so much power today, the energy levels coming out of the engines aren't as high," says Ray. "With the rules changed, leaving the fuel rates unrestricted and allowing more revs would make more power. The more power produced by the engine, the more decibels people will hear."



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**In the '14 engines (ABOVE, Renault) a turbo extracts most of the exhaust energy, with the deags exiting through a single exhaust.**

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an awesome sensorial experience."

In an interesting twist, many reckon that IndyCar's current turbo engines sound better than what F1 delivers today.

"It's a sad day when your car in the garage is sounding better than an F1 car," opines three-time Indy 500 winner Dario Franchitti. "But in IndyCar, the Honda and the Chevy sound distinctly different and, especially on the high road-course boost, they've got a bit of a bark. The Honda has quite a guttural note and the Chevy has a different sound altogether. That's cool."

Nostalgia for the best years of open-wheel audio aside, sports cars have always served up the most lyrical of soundscapes.

"A turbo Porsche 956 or 962 sounds great, and harks back to the flat-12 in a 917," says Franchitti. "Ferrari's 312; DTM cars like the V6 Mercedes I drove with air valves; Aston Martin's V12 LMP1 car...I said then that it should get extra points just for its noise when it was up against the Audis."

Some engines pluck at the heart strings more than others, and with the repeated mentions of V12s so far, we could have a clear winner. This writer has long said his first project after winning the lottery would be to start the "All 4-rotor & V12" racing series, and it sounds like I'd have a full field.

"The 4-rotor Mazda I raced at Le Mans was, by far, the best sounding engine I've ever had in a racecar," says Johansson. "It's doing, like, 30,000rpm-plus, because it's firing three times per rotation. It's about 11,000 in real terms, but that high-pitched sound was a crisp, clear, beautiful thing."

For Cheever, it was the sound of taking Spa's Eau Rouge flat for the first time in a TWR Jaguar that earns the crown.

**(ABOVE) Do IndyCar's current 2.2-liter V6 engines sound better than the new F1 units? (LEFT) Aston Martin's LMP1 racer was a big hit aurally with Dario Franchitti.**

### "The 4-rotor Mazda I raced at Le Mans was, by far, the best sounding engine I've ever had in a racecar"

STEFAN JOHANSSON

"I have a few memories about a certain corner and that one is still stuck in my mind and the sound of that big, 12-cylinder Jag was just perfect," he recalls. "Perfection."

Beyond my passion for 4-rotors and V12s, engines with an odd number of cylinders hold a special place in the sonic pantheon. Three-cylinder turbos such as the one in the Nissan ZEOD are marvelous, and Audi's tormented, turbo 5-cylinder Group B/Trans-Am/IMSA GTO engine, with its staccato wastegate chirps, has no peer.

Like music genres, we all have our own tastes with racing sounds. F1's latest album might not be a hit but, thanks to the Internet, there's plenty of older material to tide you over until it finds a new groove. ■

Take a listen to some of the engine sounds we've been talking about at <https://soundcloud.com/mpme-2>

## THE SOUND OF FORMULA E

### LIKE A FINE WHINE?

The all-electric FIA Formula E series will conduct an interesting social experiment when it attempts to engage new fans without the allure of familiar engine noises. This writer's mantra regarding the key attraction points of the sport of auto racing involves three central pillars: speed, sound and color. A series will dominate with three, can survive on just two, but could be headed for the history books with one.

With speeds expected to fall in the USF2000 range and nothing other than the sounds of tires squealing and a whining electrical motor to entice audiences, is Formula E going to be a tough sell when the series, as groundbreaking as it is, launches its inaugural season in September?

"I don't think so," says Formula E technical advisor Gil de Ferran. "I raced slot cars when I was young, and I used to absolutely love the sound of them. They sounded amazing to me with a very high-pitched whine coming from the motor and the gears. Will a Formula E car sound exactly like that? Probably not, but I don't know that I find that unattractive."

Can the series build a following while missing two pillars? According to FE TV commentator Dario Franchitti, it could establish new pillars of its own.

"It's going to be interesting, because the series wants to bring in new fans, and I think the cars are already so unique," says Franchitti. "They won't necessarily expect them to do the usual things they might have seen or heard before. Sound is important to a lot of us, but Formula E is a whole new way of going racing that wants to appeal in alternative ways that don't necessarily fit the standard model. It's just a complete reset."



**All-electric Formula E won't be delivering an ear-shattering aural assault when it begins its inaugural season in September.**

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Dan Gurney (at the '68 British GP) started a revolution with the full-face Bell STAR.

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Michael LeWitt/LAT

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**STILL PUSHING FORWARD**

Bell's unwavering commitment to creating and producing innovative, state-of-the-art head protection makes it the choice of many of today's top racers.

Leading drivers wearing Bell helmets in 2014 include three-time Indy 500 winner Helio Castroneves (ABOVE, with the Bell HP7), NASCAR Sprint Cup stars Brad Keselowski and Kevin Harvick, and multiple sports car champ and TUDOR Championship frontrunner Scott Pruett.

The HP7 (BELOW) was designed in collaboration with leading F1 drivers and teams to be as aerodynamically sleek, lightweight and efficient as possible for the demands of high-speed, open-wheel racing. Its shell and shield design has been optimized by moving the shield pivot pointer to a lower position to improve acoustic comfort, aerodynamic behavior and energy absorption. Test results show that in certain impacts, the Bell HP helmets absorb up to 40 percent more energy than standard models.



**Bell's HP7 helmet, which meets the FIA's stringent 8860 "super helmet" standard, and is the choice of many leading pro drivers.**

# SAFETY THROUGH INNOVATION

2014 marks the 60th anniversary of the first Bell helmet. Much has changed in that time, but Bell's desire to innovate and to always improve is the same.

When Roy Richter produced the first Bell helmet in a small garage behind his California auto parts store in 1954, he began a legacy of breaking new ground in safety and comfort technology that continues to this day, 60 years later.

Richter's first helmet, the 500, consisted of a hand-laminated fiberglass shell and polyurethane foam liner. His friend, Cal Niday, wore one in the 1955 Indianapolis 500 - the first driver to do so - but crashed hard into the wall on the 170th lap. Although he suffered major injuries, Niday credited the helmet with preventing more serious head injuries and he was back racing just months later.

Never one to rest on his laurels, Richter always sought better, more innovative ways to progress head protection. In 1957, the Bell 500-TX broke new ground with its use of an expanded polystyrene (EPS) liner which absorbed impact force, rather than transmitting it to a driver's head. One of the most influential helmets ever made, the 500-TX's emphasis on protection through energy absorption remains a fundamental premise of helmet design today.

When the Snell Foundation established standards and tests to improve the effectiveness and integrity of helmets, the industry as a whole took a leap forward, but Bell remained at its leading edge.

In 1958, Jimmy Bryan was the first



**1954  
BELL 500**

**Bell's first helmet. Hand laminating its fiberglass shell was slow work, but Richter felt it would be stronger.**



**(ABOVE) Roy Richter's innovative designs and progressive approach to safety continue to define the DNA of Bell Racing today.**

Indy winner to wear a Bell helmet. A decade later another great innovator, Dan Gurney, wore the first full-face helmet at the Brickyard. Gurney's elegant black Bell STAR started a revolution, and in the 1971 Indy 500, all 33 starters wore Bell helmets.

Through the 1970s and '80s, the innovations kept coming, including the first fire retardant helmet in '73 and the first lightweight composite design in '79.

Bell was also a pioneer in aerodynamics. Its 1991 Vortex used vortex generators to reduce buffeting, and the Feuling SS, launched in '93, featured a front splitter and rear wicker for use at 200mph-plus.

And as it celebrates its 60th anniversary in 2014, Bell's desire to push safety and comfort to new levels is as strong as ever. ■



**1993  
FEULING SS**  
**Using design elements patented by Jim Feuling, the SS reduced helmet lift and buffeting at 200mph-plus.**

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St. Petersburg was the scene of the first and second victories in Spencer Pigot's four-win hot streak at the start of the 2014 Pro Mazda Championship Presented by Cooper Tires.



Andersen Promotions

**SPOTLIGHT: SCOTT HARGROVE**

"IndyCar is the place I want to be," says Canada's Scott Hargrove, and he's going about it the right way. As winner of the 2013 Cooper Tires USF2000 Championship Powered by Mazda, he moved to the Pro Mazda Championship Presented by Cooper Tires, staying with Cape Motorsports with Wayne Taylor Racing. As RACER went to press, Scott had momentum: winning both Indy road races left him five points behind the leader, Spencer Pigot.



Andersen Promotions

## PIGOT FACING A FIGHT

Pro Mazda ace isn't going to have it all his own way in 2014.

It started off perfectly for Spencer Pigot in the 2014 Pro Mazda Championship Presented by Cooper Tires: four straight wins sent him to the top of the standings, and when he took pole for rounds five and six at the Indianapolis Motor Speedway road course, it appeared he could dominate.

But the Juncos Racing driver left IMS with only a pair of eighth places after the

**PIGOT'S HOPES**

"The Pro Mazda title would mean so much. The Mazda Road to Indy is an awesome system and I want to take full advantage and move up to Indy Lights next year."

long straight and slipstreaming battles promoted frantic action.

"It could have been worse; I could have had two DNFs, the number of times I got hit!" said Pigot. "But the next race is at Lucas Oil Raceway, where I won in USF2000 and where Juncos has won before. I'm positive we can get back on track and capitalize on our speed."

# SPENCER PIGOT HAS SET THE BAR!



The Juncos Racing driver has logged a perfect record, winning the first four races of the season—but teammate Kyle Kaiser and Cape Motorsports with Wayne Taylor Racing's Scott Hargrove are nipping at his heels. Follow the rising stars of the Mazda Road to Indy on the NBC Sports Network and RoadToIndy.TV! Find the full schedule online at [promazdachampionship.com](http://promazdachampionship.com)!



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The Lucas Oil-supported Telmex Chip Ganassi Racing with Felix Sabates team hadn't raced at Long Beach since 2006, but still came away with a victory.



## DIFFERENT, BUT SIMILAR...

Indy Lights cars and Daytona Prototypes may seem radically different, but going quickly follows a common formula.

**WORDS & IMAGES** Richard S. James

**T**he Daytona Prototypes that race in the Prototype class of the TUDOR United SportsCar Championship and the Indy Lights cars that serve as the final training ground for aspiring IndyCar Series drivers occupy opposite ends of the racing spectrum. While both are purpose-built racecars designed for a singular function, those functions are rather different.

The Daytona Prototypes must pound around a race track for up to 24 hours – four races in the TUDOR Championship are six hours or more. The Indy Lights cars typically race for about an hour. Even the shortest event for a DP car is longer than an Indy Lights race.

Yet at the same time, there are some similarities. For example, each car is a bit of an anachronism in its own way.

The Daytona Prototype is a tubeframe car in a world of carbon fiber composite chassis. “The easiest way to explain it is a

cross between a Sprint Cup car and an Indy car, really,” says Mike O’Gara, team manager for Telmex Chip Ganassi Racing with Felix Sabates. That team, with regular drivers Scott Pruett and Memo Rojas, along with third driver Marino Franchitti, won the 12 Hours of Sebring in March; then Pruett and Rojas backed it up with a win on the streets of Long Beach in April. The team has been strong since its inception and has seven DP titles to show for it.

Like Ganassi in DP, Schmidt Peterson Motorsports has seven championships, all coming in Indy Lights. The Lights car is a little out of its time (a new car from Dallara is on its way for 2015), albeit in a different way than the DP. Unlike the DP, it only has to compete with cars just like itself, so it doesn’t matter that it’s more than a decade old; every driver in the series is competing in the same car and having to wrestle with the same challenges it provides.



### SOLID START FOR GANASSI

Two Prototype class wins from the first four 2014 TUDOR Championship races had left Ganassi duo Scott Pruett (ABOVE) and Memo Rojas just three points out of the class lead.



(LEFT) The Ganassi guys work on setup and maintenance on the No. 01 Riley-Ford EcoBoost DP.

(BELOW) Brazil's Luis Razia is flying the flag for Lucas in Indy Lights this year.



#### RACING GIVES THE ULTIMATE WORKOUT

When Lucas says its Contact Cleaner is race proven, it isn't bluffing. Same goes for many other products from the company's range of oils, greases and cleaning products.

Partnering with race teams such as Chip Ganassi Racing and Schmidt Peterson Motorsports allows Lucas to develop its products in an environment that provides challenges more extreme than anything in the lab.

Find out more about cutting edge Lucas Oil products at [lucasoil.com](http://lucasoil.com).



"The car is 13 years old, and it's big and heavy," explains Chris Lynch, the engineer for the Schmidt Peterson Lights effort. "The biggest problem it has is the engine is based on a truck motor. The crank center is high and the heads are high, so the center of gravity is high and it really gives this pendulum feel. The car was originally designed to be an oval-only car and got converted to now be predominantly for road course racing. So the motion ratios in the dampers, none of that is really optimized to be a road racecar.

"We still have to shift it, so we're still lifting and upshifting, and lifting and downshifting," Lynch continues. "It doesn't really have that 'real' racecar feel to it. Be that as it may, it still brings a lot. It can really separate the drivers, because there's a lot of aspects that help bring out their ability to get the most out of the car."

The one thing that these cars, with

**"Because we've been running the [Indy Lights] car for such a long time, we've got this huge database"**

**CHRIS LYNCH**

these teams, have in common is that both are supported by, and rely on, Lucas Oil Products. Lucas Oil has been the primary sponsor on one of Schmidt Peterson's Lights car for many years, and also appeared as the primary sponsor on one of the team's IndyCar Series cars at selected races last year. In 2014, the Lucas Oil Indy Lights car is driven by Brazilian Luis Razia. Lucas Oil is an associate sponsor for Ganassi's TUDOR Championship DP program, too.

The other thing they have in common, despite being very different types of

racecars, is that they produce similar lap times. The only time the TUDOR Championship and Indy Lights Series appeared on the bill together this year was at April's Toyota Grand Prix of Long Beach. Pruett and Rojas sat on the TUDOR Championship pole with a 1m 15.325s lap; Razia's qualifying time around the Californian street circuit was 1m 15.753s. But getting the two cars to turn those times can be a unique exercise.

"Because we've been running the car for such a long period of time, we've got this huge database of information," says Lynch. "At times that can be a huge asset, and at times it can be a huge hindrance. You end up finding yourself within a reasonable window and you just tune around it. You use statistical engineering. You go back and see what we've done in the past, then you take on the aspect of what the driver is telling us, then you >

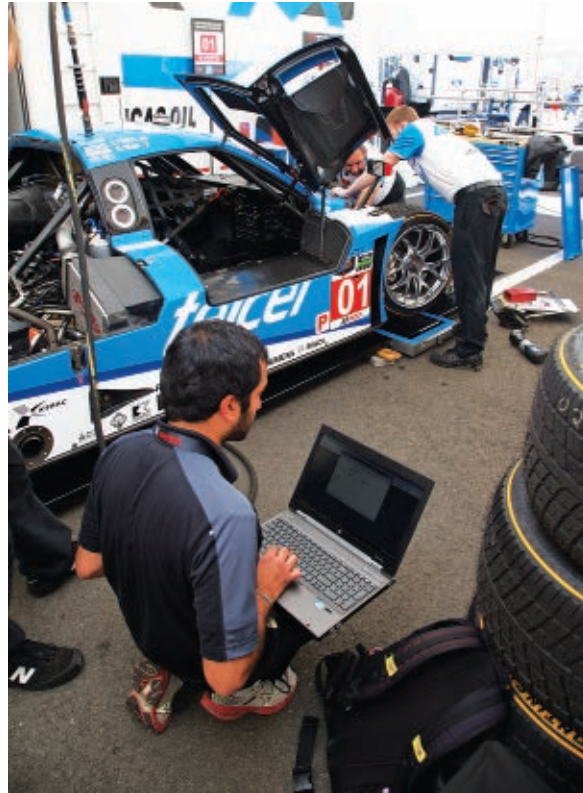


(ABOVE) When Schmidt Peterson unloaded at Long Beach in 2014, previous years' data gave a baseline setup. (RIGHT) For TUDOR Championship DP teams, there was more to learn. (BELOW) DPs use a spec rear diffuser.

work within a basic window and try to get it from here to there so that he's reasonably happy. You know that on any given day, the car that wins the race is maybe 80 percent optimized, because you'll never get the car to that level to be fully crisp."

The Prototype category in the TUDOR championship is anything but spec. Not only does Ganassi's No. 01 Ford Ecoboost-powered Riley have to compete against other DPs, but also against the LMP2 cars that came from the American Le Mans Series when it and Grand-Am rolled into the new championship. In the ongoing quest to equalize the two different types of cars, new rules have been introduced, particularly in the aerodynamics department. On top of that, Ganassi switched to the twin-turbo V6 Ford Ecoboost from the normally aspirated BMW V8 it used last year. All that makes the team's strength in the early season that much more impressive.

"There's a spec rear wing and a spec diffuser you have to run," explains O'Gara. "The other pieces are manufacturer driven. So the splitter that we run under the front of the car, the nose shape, the dive planes on the front of the car...those



parts are developed by Ford. We work with them on what's worked for us in the past."

The new engine is both lighter and packaged differently, and that's created some additional challenges.

"It puts the weight distribution differently in the car, which affects the handling," says O'Gara. "That stuff we've had to learn. We have an ideal weight distribution front to rear where we like to run the car. There's been a bit of a learning curve there to deal with that distribution and how we make it work to our advantage. Some of it is just pure overall weight. We want the entire installation to be as light as possible. That allows you to put ballast where you want it to adjust the weight distribution."

The Ganassi team has the advantage of having both its Verizon IndyCar Series and NASCAR Sprint Cup teams to draw upon. At Long Beach, the team drew upon the

**“[The new engine] puts the weight distribution differently in the car, which affects the handling”**

**MIKE O'GARA**

circuit-specific experience of its IndyCar damper engineers to help get a baseline. Then, during the first practice session for the TUDOR Championship, those engineers were observing in the pits to see what they might learn for their own race.

The fact that shock information can transfer over to some extent illustrates that although an open-wheel racecar, be it IndyCar Series car or Indy Lights machine, and a closed-cockpit sports car like a Daytona Prototype may look quite different, the principles of making a car go quickly are not so far apart. ■

## LUCAS ON THE CAR, LUCAS IN THE CAR

FOR LUCAS, PARTNERING WITH A TEAM IS WAY MORE THAN A DECAL ON THE SIDE OF THE CAR.

Not only do the Schmidt Peterson Motorsports No. 7 Indy Lights car and No. 01 Telmex Chip Ganassi Racing with Felix Sabates Ford Ecoboost Riley carry the Lucas logo, Lucas products are well represented in the greases, oils and cleaners that keep these racecars moving and looking good.

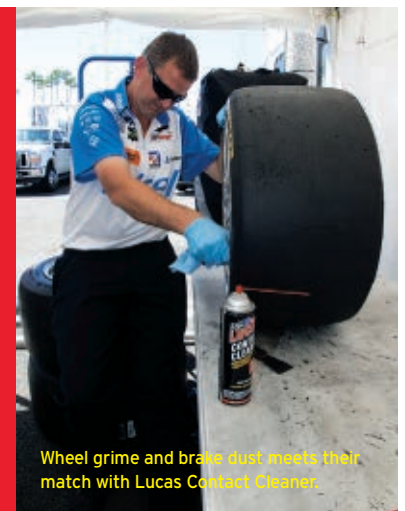
"We use Lucas products in several areas of the car," says Ganassi

team manager Mike O'Gara. "The upright grease, the bearing grease...it's interesting because in the IndyCar you want minimum drag, but it only needs to live a couple of races. We have a 24-hour race, a 12-hour, a 10-hour, a six-hour...so our stuff has to last a lot longer period of time. The IndyCar guys love the Lucas grease because it's low drag; we

love it because it'll run for 24 hours, no problem." Ganassi's new engine builder for the Ford Ecoboost program, Roush-Yates, is testing with Lucas oils on dyno runs and reliability runs so that Ganassi can once again use Lucas oil in the engine, as it does in the gearbox. The team uses products such as Lucas Contact Cleaner and Slick Mist for cleaning.

But the racecar isn't the only vehicle to get the Lucas treatment.

"All our semis use it," says O'Gara. "That's where Forrest Lucas's stuff started, in diesel. So we use all their additives and greases in the transporters, too. With these things going back and forth across the country half a dozen times a year, it's got to be good stuff."



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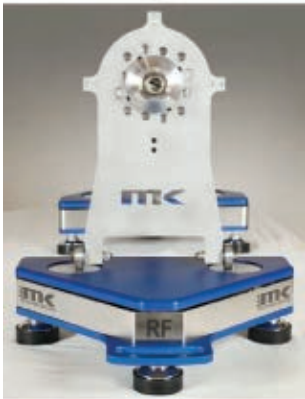
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## 2002 T2 CORVETTE



## 04 STOHR-WEST DSR



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Brian Cleary/LAT



Everybody has bad days, but few rebound as decisively as Ryan Hunter-Reay between the nadir of his Long Beach crash and crushing win at Barber.



### IF THIS IS DOMINATION, SIGN US UP

Yes, Mercedes enjoyed an obvious decisive advantage over the rest of the field...but what a fight Lewis Hamilton and Nico Rosberg put on in Bahrain, dicing hard, but cleanly wheel to wheel while their managers sweated and grimaced in the pits. After it ended with another team 1-2, the braintrust happily took praise for not imposing team orders - for now. The message from the fans was straightforward: More, please!

### F1 WORLD CHAMPIONSHIP

March 16	Australia	Nico Rosberg
March 30	Malaysia	Lewis Hamilton
April 6	Bahrain	Lewis Hamilton
April 20	China	Lewis Hamilton
May 11	Spain	Lewis Hamilton
May 25	Monaco (Monte Carlo)	
June 8	Canada (Montreal)	
June 22	Austria (Spielberg)	
July 6	Britain (Silverstone)	
July 20	Germany (Hockenheim)	
July 27	Hungary (Hungaroring)	
Aug. 24	Belgium (Spa)	
Sept. 7	Italy (Monza)	
Sept. 21	Singapore (Marina Bay)	
Oct. 5	Japan (Suzuka)	
Oct. 12	Russia (Sochi)	
Nov. 2	United States (CoTA)	
Nov. 9	Brazil (Interlagos)	
Nov. 23	Abu Dhabi (Yas Marina)	

### INDYCAR SERIES

March 30	St. Petersburg	Will Power
April 13	Long Beach	Mike Conway
April 27	Barber	Ryan Hunter-Reay
May 10	Indy GP	Simon Pagenaud
May 25	Indianapolis 500	
May 31	Detroit, Mich. 1	
June 1	Detroit 2	
June 7	Fort Worth, Texas	
June 28	Houston, Texas 1	
June 29	Houston 2	
July 6	Pocono, Pa.	

July 12	Newton, Iowa
July 19	Toronto, Ontario 1
July 20	Toronto 2
Aug. 3	Mid-Ohio, Lexington, Ohio
Aug. 17	Milwaukee, Wis.
Aug. 24	Sonoma, Calif.
Aug. 30	Fontana, Calif.

### IMSA TUDOR UNITED SPORTSCAR CHAMPIONSHIP

Jan. 25-26	Daytona	S. Bourdais/ J. Barbosa/C. Fittipaldi
March 15	Sebring	Pruett/Rojas/Franchitti
April 12	Long Beach	S. Pruett/M. Rojas
May 4	Monterey	J. van Overbeek/ E. Brown
May 31	Detroit, Mich.	
June 7	Kansas City, Kan.	
June 29	Watkins Glen, N.Y. (6 Hours)	
July 13	CTMP, Bowmanville, Ont.	
July 25	Indianapolis, Ind.	
Aug. 10	Road America, Elkhart Lake, Wis.	
Aug. 24	VIR, Alton, Va.	
Sept. 20	Circ. of The Americas, Austin, Texas	
Oct. 4	Road Atlanta, Ga. (1000m/10hrs)	

### NASCAR SPRINT CUP SERIES

Feb. 23	Daytona 500	Dale Earnhardt Jr.
March 2	Phoenix	Kevin Harvick
March 9	Las Vegas	Brad Keselowski
March 16	Bristol	Carl Edwards
March 23	Fontana	Kyle Busch
March 30	Martinsville	Kurt Busch

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April 7	Texas	Joey Logano
April 12	Darlington	Kevin Harvick
April 26	Richmond	Joey Logano
May 4	Talladega	Denny Hamlin
May 10	Kansas City	Jeff Gordon
May 25	Charlotte, N.C.	
June 1	Dover, Del.	
June 8	Pocono, Pa.	
June 15	Brooklyn, Mich.	
June 22	Sonoma, Calif.	
June 28	Sparta, Ky.	
July 5	Daytona, Fla.	
July 13	Loudon, N.H.	
July 27	Indianapolis, Ind.	
Aug. 3	Pocono, Pa.	
Aug. 10	Watkins Glen, N.Y.	
Aug. 17	Brooklyn, Mich.	
Aug. 23	Bristol, Tenn.	
Aug. 31	Atlanta, Ga.	
Sept. 6	Richmond, Va.	
Sept. 14	Chicagoland, Ill.	
Sept. 21	Loudon, N.H.	
Sept. 28	Dover, Del.	
Oct. 5	Kansas City, Kan.	
Oct. 11	Charlotte, N.C.	
Oct. 19	Talladega, Ala.	
Oct. 26	Martinsville, Va.	
Nov. 2	Fort Worth, Texas	
Nov. 9	Phoenix, Ariz.	
Nov. 16	Homestead, Fla.	

### NASCAR NATIONWIDE SERIES

Feb. 22	Daytona	Regan Smith
March 1	Phoenix	Kyle Busch

### P2 TO P1, AT LAST

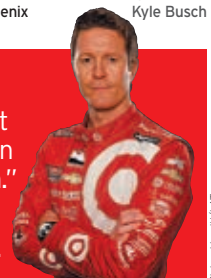
After Daytona Prototypes had swept the board in the first three rounds of the TUDOR United SportsCar Championship, ALMS alums Extreme Speed put their HPD LMP2 car up front at Mazda Raceway Laguna Seca.



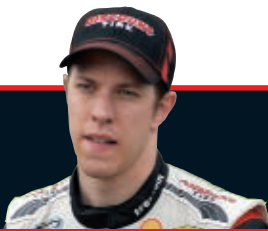
Michael Levitz/LAT

"The cars are on a knife edge. The straights are so long that you're trimming the car out to levels that we've only seen once before, in Brazil. That makes it tough...and a lot of fun."

**SCOTT DIXON**, who thrives when Indy cars are loose, gave the IMS road course his seal of approval.



Michael Levitz/LAT



"We had a lot of close calls and I guess most of them were my fault, but I'm just being real aggressive"  
**BRAD KESELOWSKI** taking claim, but not blame, for May chaos at Talladega



Richard Doherty/LAT

Lamborghini and Ferrari both had early Pirelli World Challenge GT wins at St. Petersburg (Tomas Engle and Barber (Anthony Lazzaro).

March 8	Las Vegas	Brad Keselowski
March 15	Bristol	Kyle Busch
March 22	Fontana	Kyle Larson
April 4	Texas	Chase Elliott
April 11	Darlington	Chase Elliott
April 25	Richmond	Kevin Harvick
May 3	Talladega	Elliott Sadler
May 18	Newton, Iowa	
May 24	Charlotte, N.C.	
May 31	Dover, Del.	
June 14	Brooklyn, Mich.	
June 21	Elkhart Lake, Wis.	
June 27	Sparta, Ky.	
July 4	Daytona, Fla.	
July 12	Loudon, N.H.	
July 19	Chicagoland, Ill.	
July 26	Indianapolis, Ind.	
Aug. 2	Newton, Iowa	
Aug. 9	Watkins Glen, N.Y.	
Aug. 16	Mid-Ohio, Lexington, Ohio	
Aug. 22	Bristol, Tenn.	
Aug. 30	Atlanta, Ga.	
Sept. 5	Richmond, Va.	
Sept. 13	Chicagoland, Ill.	
Sept. 20	Sparta, Ky.	
Sept. 27	Dover, Del.	
Oct. 4	Kansas City, Kan.	
Oct. 10	Charlotte, N.C.	
Nov. 1	Fort Worth, Texas	
Nov. 8	Phoenix, Ariz.	
Nov. 15	Homestead, Fla.	



Scott LePage/LAT

**NASCAR CAMPING WORLD TRUCK SERIES**

Feb. 21	Daytona	Kyle Busch
March 29	Martinsville	Matt Crafton
May 9	Kansas	Kyle Busch
May 16	Charlotte, N.C.	
May 30	Dover, Del.	
June 6	Fort Worth, Texas	
June 14	Madison, Ill.	
June 26	Sparta, Ky.	
July 12	Newton, Iowa	
July 23	Rossburg, Ohio (dirt)	
Aug. 2	Pocono, Pa.	
Aug. 16	Brooklyn, Mich.	
Aug. 20	Bristol, Tenn.	
Aug. 31	CTMP, Bowmanville, Ontario	
Sept. 12	Chicagoland, Ill.	
Sept. 20	Loudon, N.H.	
Sept. 27	Las Vegas, Nev.	
Oct. 18	Talladega, Ala.	
Oct. 25	Martinsville, Va.	
Oct. 31	Fort Worth, Texas	
Nov. 7	Phoenix, Ariz.	
Nov. 14	Homestead, Fla.	

**PIRELLI WORLD CHALLENGE**

March 30	St. Petersburg, Fla. (GT)**	
April 13	Long Beach, Calif. (GT)	
April 27	Barber, Birmingham, Ala. (GT, TC)**	
May 16	CTMP, Bowmanville, Ont. (TC)**	
June 1	Detroit, Mich. (GT)**	
June 1	Millville, N.J. (TC)**	
June 21	Elkhart Lake, Wis. (GT, TC)**	
July 20	Toronto, Ontario (GT)	
Aug. 3	Mid-Ohio (GT, TC)**	
Aug. 24	Sonoma, Calif. (GT)**	
Aug. 31	Brainerd, Minn. (TC)**	
Sept. 13	Miller Park, Toole, Utah (GT, TC)**	

\*\* double-header event

**FIA WORLD ENDURANCE CHAMPIONSHIP**

April 20	Silverstone	S. Buemi/ A. Davidson/N. Lapierre
May 3	Spa	S. Buemi/ A. Davidson/N. Lapierre

**PASSING THE TORCH?**

Audi's long-running domination of Le Mans Prototype competition may be over. Toyota's revised TS040 Hybrids swept the first two rounds, with Porsche's new 919 also showing strength by taking pole for Spa's Round 2.



Emery/LAT

June 14-15	Le Mans, France (24 Hours)
Aug. 31	Sao Paulo, Brazil
Sept. 20	Circ. of The Americas, Austin, Texas
Oct. 12	Fuji, Japan
Nov. 2	Shanghai, China
Nov. 15	Sakhir, Bahrain
Nov. 30	Sao Paulo, Brazil

**NHRA MELLO YELLO SERIES**

Feb. 9	Pomona
Feb. 23	Phoenix
March 16	Gainesville
March 30	Las Vegas
April 13	Charlotte, N.C. (PSM)
April 27	Houston, Texas
May 18	Atlanta, Ga. (PSM)
May 25	Topeka, Kan.
June 1	Englishtown, N.J. (PSM)
June 15	Bristol, Tenn.
June 22	Epping, N.H. (PSM)
June 29	Chicago, Ill. (PSM)
July 6	Norwalk, Ohio (PSM)
July 20	Denver, Colo. (PSM)
July 27	Sonoma, Calif. (PSM)
Aug. 3	Seattle, Wash.

Aug. 17	Brainerd, Minn.
Sept. 1	Indianapolis, Ind. (PSM)
Sept. 14	Charlotte, N.C. (PSM)
Sept. 21	Dallas, Texas (PSM)
Sept. 28	Madison, Ill. (PSM)
Oct. 5	Reading, Pa. (PSM)
Nov. 2	Las Vegas, Nev. (PSM)
Nov. 16	Pomona, Calif. (PSM)

**FIA WORLD RALLY CHAMPIONSHIP**

Jan. 19	Monte Carlo	Sebastien Ogier
Feb. 9	Sweden	Jari-Matti Latvala
March 7-9	Mexico	Sebastien Ogier
April 4-6	Portugal	Sebastien Ogier
May 9-11	Argentina	Jari-Matti Latvala

**HASTE MAKES WASTE**

Robert Kubica starred in World Rallying's WRC2 class, but has only finished once in his five top-level WRC starts and crashed in each. "I must focus more on getting to the finish as opposed to driving as fast as I can," conceded the F1 vet.



Micklen

June 1	Italy
June 27-29	Poland
Aug. 1-3	Finland
Aug. 22-24	Germany
Sept. 12-14	Australia
Oct. 3-5	France
Oct. 24-26	Spain
Nov. 14-16	Britain (Wales)

**FEATURE RACE**

**GARDNER DENVER 200**

**WHEN** June 19-21  
**WHERE** Elkhart Lake, Wis.  
 Guest aces like Alex Tagliani, Johnny O'Connell and Nelson Piquet Jr. will star in the Nationwide race, and you'll also see hot action from the Pirelli World Challenge.

**TICKET INFO**

Order race tickets directly at [www.url.com](http://www.url.com)

**WHERE & HOW**

Centrally located between Green Bay to the north and Milwaukee to the south, Road America is accessible by major highways.

**COOPER TIRES INDY LIGHTS**

March 30	St. Petersburg	Z. Veach
April 13	Long Beach	G. Chaves
April 26	Barber 1	Z. Veach
April 27	Barber 2	G. Chaves
May 9	Indy (road) 1	M. Brabham
May 10	Indy (road) 2	L. Razia
May 23	Indianapolis, Ind. (oval)	
July 6	Pocono, Pa.	
July 20	Toronto, Ontario	
Aug. 2-3	Lexington, Ohio 1&2	
Aug. 17	Milwaukee, Wis.	
Aug. 23-24	Sonoma, Calif. 1&2	

**PRO MAZDA CHAMPIONSHIP**

Mar. 29-30	St. Petersburg 1&2	S. Pigot
April 26-27	Barber 1&2	S. Pigot
May 9-10	Indy (road) 1&2	S. Hargrove
May 23	Indianapolis (oval)	
July 6	Pocono, Pa.	
July 20	Toronto, Ontario	
Aug. 2-3	Lexington, Ohio 1&2	
Aug. 10-11	Trois-Rivieres, Quebec 1&2	
Aug. 17	Milwaukee, Wis.	
Aug. 23-24	Sonoma, Calif. 1&2	

**USF2000 CHAMPIONSHIP**

Mar. 29	St. Petersburg 1	V. Franzoni
Mar. 30	St. Petersburg 2	RC Enerson
April 26-27	Barber Park 1&2	RC Enerson
May 9	Indy (road) 1	W. Owen
May 10	Indy (road) 2	A. Starrantino
May 24	Indianapolis (oval)	
July 19-20	Toronto, Ontario 1&2	
Aug. 2-3	Lexington, Ohio 1,2&3	
Aug. 10-11	Trois-Rivieres, Quebec 1&2	
Aug. 23-24	Sonoma, Calif. 1&2	

**RACER.com**

RACER.com has the latest racing news, views and features, plus Robin Miller's answers to your questions. Write to [MillersMailbag@racer.com](mailto:MillersMailbag@racer.com)



Miguel Kinnabiel/LAT

The Red Bull Global Rallycross Championship revs up with its first event in the nation's capital on June 22, organized by Andretti Sports Marketing and telecast live on NBC.

**JUNE 14-15**

**24 HOURS OF LE MANS**

The shutdown of its SPEED Channel clearly hasn't lessened FOX networks' interest in the granddaddy of sports car racing. The 82nd running of the 24 Hours is scheduled to get 22-and-a-half hours of live coverage on FOX Sports 1 and FOX Sports 2.

Programming begins with the first seven-and-a-half hours on FS1, then switches to FS2 for another seven-and-a-half hour stint (interrupted by 90 minutes for NASCAR Truck qualifying). Then FS1 takes over for another seven-and-a-half hours, with a final 90mins to wrap things up on FS2.

There will be plenty to talk about, too, as the race will feature a three-way prize fight for overall honors. Traditional Le Mans superpower Audi faces a serious challenge from the factory Toyota prototypes and the new works Porsches, all utilizing hybrid tech.

**DETAILS**

8:30am FS1: The live race start begins the marathon.



ALL TIMES ARE EASTERN (ET)

**SUNDAY JUNE 1**

- 1:00pm FOX: NASCAR Sprint Cup, Dover, Del. (L)
- 3:30pm ABC: Verizon IndyCar Series, Race 2, Belle Isle, Detroit, Mich. (L)
- 4:00pm ESPN2: NHRA Mello Yello Drag Racing Series, eliminations, Englishtown, N.J. (D)

**MONDAY JUNE 2**

No racing scheduled at press time

**TUESDAY JUNE 3**

- 2:30am ESPN2: NASCAR Now

**WEDNESDAY JUNE 4**

- 3:00am ESPN2: NASCAR Now

**THURSDAY JUNE 5**

- 2:00am ESPN2: NASCAR Now

**FRIDAY JUNE 6**

- 12:00pm FS1: NASCAR Sprint Cup practice, Pocono, Pa. (L)
- 2:00pm NBCSN: FIA Formula 1, Canadian Grand Prix practice, Montreal (L)

- 4:30pm FS1: NASCAR Sprint Cup qualifying Pocono, Pa. (L)
- 6:30pm NBCSN: Verizon IndyCar Series, qualifying, Fort Worth, Texas (L)

**SATURDAY JUNE 7**

- 11:30am FS1: NASCAR Sprint Cup final practice, Pocono, Pa. (L)
- 1:00pm NBCSN: FIA Formula 1, Canadian Grand Prix qualifying, Montreal (L)

**2:00pm NBC (June 8)**  
FIA Formula 1 Canadian GP  
NBC carries the GP live, followed by a live edition of *F1 Extra* on the network.



Charles Coates/LAT

- 8:00pm CNBC: Verizon IndyCar Series, Fort Worth, Texas (L)

**SUNDAY JUNE 8**

- 1:30am NBCSN: FIA Formula 1, Canadian Grand Prix qualifying, Montreal (R)
- 1:00pm TNT: NASCAR Sprint Cup, Pocono, Pa. (L)
- 4:30pm NBC: IndyCar 36 - Kurt Busch
- 7:00pm NBCSN: FIA Formula 1, Canadian Grand Prix, Montreal (R)
- 9:30pm NBCSN: F1 documentary, 1

**MONDAY JUNE 9**

No racing scheduled at press time

**TUESDAY JUNE 10**

- 2:30am ESPN2: NASCAR Now

**WEDNESDAY JUNE 11**

- 2:30am ESPN2: NASCAR Now

**THURSDAY JUNE 12**

- 2:30am ESPN2: NASCAR Now

**FRIDAY JUNE 13**

- 11:00am FS1: NASCAR Sprint Cup practice, Brooklyn, Mich. (L)
- 12:30pm FS1: NASCAR Nationwide practice, Brooklyn, Mich. (L)
- 3:30pm FS1: NASCAR Sprint Cup, Sprint qualifying, Brooklyn, Mich. (L)

- 5:00pm FS1: ARCA Stock Car Series, Brooklyn, Mich. (L)
- 7:00pm FS1: NASCAR Camping World Truck practice, Madison, Ill. (L)

**SATURDAY JUNE 14**

- 8:30am FS1: 24 Hours of Le Mans, start, Le Mans, France (L)
- 10:30am ESPN: NASCAR Nationwide Series, qualifying, Brooklyn, Mich. (L)
- 11:00am FS2: NASCAR Camping World Truck Series final practice, Madison, Ill. (L)
- 12:30pm FS2: NASCAR Sprint Cup final practice, Brooklyn, Mich. (L)
- 2:00pm ESPN: NASCAR Nationwide Series, Brooklyn, Mich. (L)
- 4:00pm FS2: 24 Hours of Le Mans, Le Mans, France (L)
- 5:00pm FS2: NASCAR Camping World Truck Series qualifying, Madison, Ill. (L)
- 6:00pm ESPN2: NHRA Mello Yello Drag Racing Series, qualifying, Bristol, Tenn. (SDD)
- 8:30pm FS1: NASCAR Camping World Truck Series, Madison, Ill. (L)

**SUNDAY JUNE 15**

- 1:00am FS1: 24 Hours of Le Mans, Le Mans, France (L)
- 7:30am FS2: 24 Hours of Le Mans, Le Mans, France (L)
- 1:00pm TNT: NASCAR Sprint Cup Series, Brooklyn, Mich. (L)



**"I think it's a little bit embarrassing that the GP2 cars are so close to us [on lap time] with the budgets they have"**  
**SERGIO PEREZ** after Spanish GP practice



Endurance racing of another kind: How will IndyCar drivers, crews and their equipment face the challenge of late June weather in Houston?



Alastair Staley/LAT

2:30pm NBCSN: Pirelli World Challenge, Belle Isle, Detroit, Mich. (D)  
 11:00pm ESPN2: NHRA Mello Yello Drag Racing Series eliminations, Bristol, Tenn. (SDD)

**MONDAY JUNE 16**

No racing scheduled at press time

**TUESDAY JUNE 17**

No racing scheduled at press time

**CHANNEL GUIDE**

ABC	ESPN on ABC
CBS	CBS Broadcasting, Inc.
CNBC	NBC Business News
NBC	NBC Universal
NBCSN	NBC Sports Network
ESPN	ESPN networks
ESPN-N	ESPN News
FOX	FOX Broadcast Network
FS1	FOX Sports 1 (formerly SPEED)
FS2	FOX Sports 2 (formerly FUEL)
TNT	Turner Network Television
VELOCITY	Velocity Channel
L	Live Program
R	Repeat Program
TBD	Start Time to Be Determined
D	Delayed from Earlier Day
SDD	Same Day, Delayed

All listings subject to change. Networks may broadcast programs at different times in different time zones. Check local listings.

**WEDNESDAY JUNE 18**

2:30am ESPN2: NASCAR Now

**THURSDAY JUNE 19**

No racing scheduled at press time

**FRIDAY JUNE 20**

8:00am NBCSN: FIA Formula 1, Austrian Grand Prix practice, Zeltweg (L)  
 3:00pm FS1: NASCAR Sprint Cup practice, Sonoma, Calif. (L)  
 6:30pm FS1: NASCAR Sprint Cup final practice, Sonoma, Calif. (L)

**SATURDAY JUNE 21**

8:00am NBCSN: FIA Formula 1, Austrian Grand Prix qualifying, Zeltweg (L)  
 11:30am ESPN2: NASCAR Nationwide Series, Elkhart Lake, Wis. (L)  
 1:30pm FS1: NASCAR Sprint Cup qualifying, Sonoma, Calif. (L)  
 2:45pm ABC: NASCAR Nationwide Series, Elkhart Lake, Wis. (L)  
 5:30pm NBCSN: FIA GP2, Race 1, Zeltweg, Austria (SDD)  
 7:00pm ESPN2: NHRA Mello Yello Drag Racing Series qualifying, Epping, N.H. (SDD)

**SUNDAY JUNE 22**

1:30am NBCSN: FIA Formula 1, Austrian Grand Prix qualifying, Zeltweg (R)  
 8:00am NBCSN: FIA Formula 1, Austrian Grand Prix, Zeltweg (L)

**2:00pm ESPN2 (June 22)**  
 NHRA, Epping, N.H.  
 ESPN ups the ante on its Mello Yello Drag Racing Series with live coverage of eliminations.



2:00pm NBC: Global Rallycross, Washington, D.C. (L)  
 2:30pm NBCSN: FIA Formula 1, Austrian Grand Prix, Zeltweg (R)  
 3:00pm TNT: NASCAR Sprint Cup Series, Sonoma, Calif. (L)  
 7:00pm NBCSN: FIA GP2, Race 2, Zeltweg, Austria (SDD)

**MONDAY JUNE 23**

No racing scheduled at press time

**TUESDAY JUNE 24**

No racing scheduled at press time

**WEDNESDAY JUNE 25**

2:30am ESPN2: NASCAR Now

**THURSDAY JUNE 26**

2:30am ESPN2: NASCAR Now  
 9:00am FS1: NASCAR Camping World Truck Series practice, Sparta, Ky. (L)  
 4:30pm FS1: NASCAR Camping World Truck Series qualifying, Sparta, Ky. (L)  
 8:00pm FS1: NASCAR Camping World Truck Series, Sparta, Ky. (L)

**FRIDAY JUNE 27**

9:00am FS1: NASCAR Nationwide Series practice, Sparta, Ky. (L)  
 10:30am FS1: NASCAR Sprint Cup practice, Sparta, Ky. (L)  
 1:00pm FS1: NASCAR Sprint Cup final practice, Sparta, Ky. (L)  
 3:30pm FS1: NASCAR Nationwide Series qualifying, Sparta, Ky. (L)  
 5:30pm FS1: NASCAR Sprint Cup qualifying, Sparta, Ky. (L)  
 7:30pm ESPN: NASCAR Nationwide Series, Sparta, Ky. (L)

**SATURDAY JUNE 28**

2:00pm NBCSN: Verizon IndyCar Series, Houston Race 1 qualifying, Houston, Texas (SDD)  
 3:00pm NBCSN: Verizon IndyCar Series, Houston Race 1, Houston, Texas (L)  
 7:00pm ESPN2: NHRA Mello Yello Drag Racing Series qualifying, Chicago, Ill. (SDD)  
 7:30pm TNT: NASCAR Sprint Cup Series, Sparta, Ky. (L)

**SUNDAY JUNE 29**

**11:00am FS1 (June 29)**  
 TUDOR United SportsCar Championship  
 Live coverage of all six hours of the enduro round at the Glen.



3:00pm ESPN2: NHRA Mello Yello Drag Racing Series eliminations, Chicago, Ill. (L)  
 3:00pm NBCSN: Verizon IndyCar Series, Houston Race 2, Houston, Texas (L)

**MONDAY JUNE 30**

No racing scheduled at press time

**MULTIMEDIA**

**LE MANS EXPLAINED**  
 12 "mini-films" from the ACO



Get prepped for the 24 Hours of Le Mans with this video series covering engineering basics of the cars and the complicated rules they must abide by. Check them out at [24h-inside.com](http://24h-inside.com).

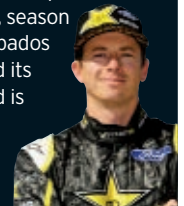
**PWC ONLINE ARCHIVE**  
 YouTube: "WorldChallengeTV" for the Pirelli World Challenge



Alongside the race coverage airing on NBCSN, Pirelli World Challenge events can be streamed live online at [world-challenge.com](http://world-challenge.com), and at the series' YouTube channel.

**ON TWITTER**

@TannerFoust has been very active on Twitter recently, and with good reason - the 2014 Red Bull Global Rallycross, @RedBullGRC, season started in Barbados on May 18 and its first U.S. round is at X Games Austin on June 7.



**RACER.com**

As well as Robin Miller's Mailbag, now presented by Honda/HPD, Marshall Pruett answers your tech questions online. Write to: [PruettsTechMailbag@Racer.com](mailto:PruettsTechMailbag@Racer.com)



Dyson Racing's teen protégé Matt McMurry relates his ELMS adventures in web and video blogs at RACER.com.



### STAR LETTER

#### Defining a hero

I'm not big on calling people heroes but, in the case of Alex Zanardi, I have to make an exception.

Anybody who was able to see his exploits in Indy cars first hand was privileged to see a true artist at work; but what he has done since transcends all that. Not just his incredible triumphs of will, but in the examples he has set for so many around the world by refusing to surrender to adversity.

Thanks for the memories stoked by your Heroes Issue, and helping Alex's story to inspire others.

**Ken Wells Toronto, Ontario**

### Still room for heroes

I saw on Facebook that some killjoys criticized your selections of racing heroes, or even the decision to make racers heroes at all, but please ignore them: Your Heroes III Issue (RACER, May) was not only a work of art, but a reminder of everything racing can and should be in an increasingly technologically driven age. Thanks!

**Brian Overton via e-mail**

Thanks Brian. The other thing for the critics to remember is that we've picked other heroes in previous Heroes Issues and we'll pick more in future. To put them all into one issue would require an 800-page RACER. Imagine the mailing costs! - Ed.

### Keep it coming, Long Beach!

I was very relieved to read on RACER.com that the Long Beach City Council has renewed its deal for an IndyCar race rather than try to go back to the past with Formula 1. I know that's how the TGPLB first became a big thing, but it's now known for having an IndyCar as well as a sports car race - which F1 wouldn't include. Plus, the changes



Michael Kim

### WRITE NOW

If you grab the "most entertaining" letter slot in the next issue of RACER, we'll send you an official RACER cap with which to attend the races in style.

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they would make to "modernize" the track would remove all its character.

Maybe now F1 will come to its senses and do the right thing: Build a proper road course to race on here in SoCal!

**Bobby Fleet Santa Monica, Calif.**

### Special treat

Since I was quick to complain about the first "special issue" of RACER, I feel compelled to say the TUDOR magazine is what a special issue should be and should be given to anyone who wants to know what sports car racing is all about and the history behind the category.

There's great info about the cars, drivers and owners who made sports car racing. The photos are first class and TUDOR tells its commercial story, but does not beat the reader over the head with that message. Well done.

**David Fahey via e-mail**

### Lighting the darkness

Rush may not have been a big commercial hit in this country, but it does seem to have opened the eyes of film makers and publishing companies. Now we've got a movie about Carroll Shelby vs. Ferrari at Le Mans coming, as well as fascinating new books like *Black Noon*. After years of nothing, the media is finally noticing racing again!

**Lisa Ailes via e-mail**

We agree there's a lot to be excited about on those fronts, Lisa. Check out RACER founder Paul Pfanner's review of *Black Noon* on RACER.com. -Ed.

## ANNIVERSARIES

### JUNE BIRTHDAYS



PANCHO CARTER

Ron Dennis, 6/1/47; Tom Sneva, 6/1/48; Martin Brundle, 6/1/59; Davy Jones, 6/1/64; Steve Kinser, 6/2/55; Jan Lammers, 6/2/56; Kyle Petty, 6/2/60; Patrick Head, 6/5/46; David Hobbs, 6/9/39; Vic Elford, 6/10/35; Jackie Stewart, 6/11/39; **DUANE "PANCHO" CARTER, 6/11/50**; Jean Alesi, 6/11/64; Rinaldo Capello, 6/17/64; Shirley Muldowney, 6/19/40; Rob Dyson, 6/21/46; Jeff Ward, 6/22/61; Jeg Coughlin Jr., 6/23/70; Tim Parnell, 6/25/32; Patrick Tambay, 6/25/49; Johnny Herbert, 6/27/64; Junior Johnson, 6/28/31; Page Jones, 6/29/72; Sterling Marlin, 6/30/57; Ralf Schumacher, 6/30/75.



PIERRE LEVEGH

### WE REMEMBER



#### JAMES HUNT d. 6/15/93

Formula 1's king of cool and a great TV commentator, but also a superb driver. Despite only two seasons in top cars, Hunt took 10 wins and 14 poles.

Ray Keech, 6/25/39; Louis Chevrolet, 6/6/41; **PIERRE LEVEGH, 6/11/55**; Bob Sweikert, 6/17/56; Jimmy Bryan, 6/19/60; Jud Larson, 6/11/66; Giuseppe Farina, 6/30/66; Ludovico Scarfiotti, 6/8/68; Lucien Bianchi, 6/2/70; Piers Courage, 6/21/70; Jo Bonnier, 6/11/72; Riccardo Paletti, 6/13/82; Jo Gartner, 6/1/86; William H.G. France, 6/7/92; **JAMES HUNT, 6/15/93**; **SAM HANKS, 6/27/94**; Vel Miletich, 6/11/98; William C. France, 6/4/07; Scott Kalitta, 6/22/08.



SAM HANKS



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1



LAT archive



# REAR VIEW

JUNE 2014

**WHAT** Scuderia Ferrari in grand prix racing  
**WHERE** Worldwide  
**WHEN** Every year since 1929

2



LAT archive

**1** Start of the 1933 Monaco GP, with Varzi's Bugatti joined on the front row by a Scuderia Ferrari-run Alfa 8C-2300 of Baconin Borzacchini.

**2** Ferrari's Alberto Ascari (40) slithers past a multi-car pileup at Tabac. Two years later, Ascari became Ferrari's first World Champion.

**3** Bruce McLaren in the elegant M2B at Monaco in '66. His eponymous team is the second oldest in Formula 1.

3



LAT archive

No company could last 85 years without being successful. Elsewhere in this issue we celebrate Ferrari's almost absurdly dominant period, 2000-'04, but it's worth remembering just how long Enzo Ferrari's blood-red machines have been at the forefront of grand prix racing, as other winning teams have gone with the wind. True, there have been some scarlet oh-horrors - 1962, '73, '80 and '92 spring to mind - but the Prancing Horse tends to rise quickly from its troughs.

Scuderia Ferrari burst into life in 1929, running Alfa Romeos for privateers, but by the early 1930s had become the *de facto* Alfa motorsport team as the parent company hit financial trouble. The first "proper" Ferrari F1 car - the Tipo 125 - made its debut in the 1948 Italian Grand Prix. Two years later, the Formula 1 World Championship began, and Ferrari hasn't missed a season since (although it has missed the odd GP here and there.)

Jose Froilan Gonzalez delivered Enzo's first championship victory at Silverstone in 1951, and the following year, with F1 running to F2 rules, Alberto Ascari

secured the first of Ferrari's 15 Drivers' World Championships.

*Il Commendatore's* determination to prove it was his cars, not their *piloti*, that won races often came at a severe cost as internecine rivalries lost the Scuderia championships and even cost the less self-disciplined drivers their lives. But the Old Man of Maranello also had an unerring instinct for drivers who'd win glory for his iconic marque, and for many fans the team lost much of its soul on Aug. 14, 1988, when Mr. Ferrari died, aged 90.

Nonetheless, stat books will show that enforcing a No. 1/No. 2 driver policy, as Ferrari has done for the past 20 years, has earned greater glory than the preceding decades of polemics and abrasiveness.

By comparison with Ferrari, McLaren is "new" to the business, having been in F1 a mere 48 years, but it has an impressive hit rate, with 12 Drivers' Championships (Ferrari 15), and eight Constructors' crowns (Ferrari 17). In terms of race wins, the Italian team leads 221-182. We wonder who'll be the first to add another win. And whether it will be in 2014... ■

## TEAM LOTUS - CHAPMAN'S FALLEN ICON

For every enduring F1 marque such as Ferrari and McLaren, there's a truly great team that just faded away. Lotus made its F1 debut with Cliff Allison and Graham Hill (BELOW) at Monaco in 1958. Some 29 years later, after seven Constructors' and six Drivers' titles, Ayrton Senna scored the team's 79th and final win. The team died the same year he did.



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