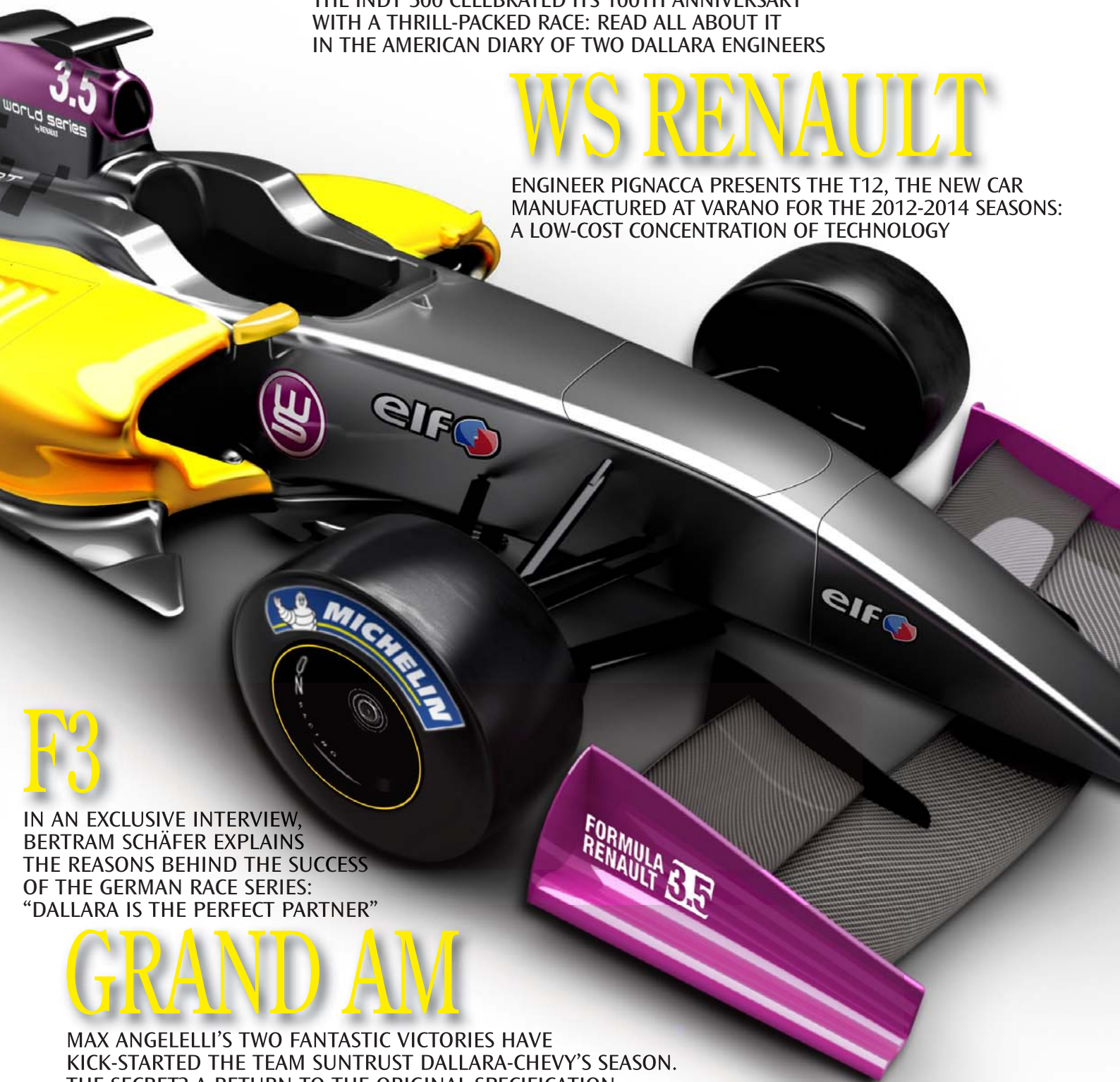


INDIANAPOLIS

THE INDY 500 CELEBRATED ITS 100TH ANNIVERSARY
WITH A THRILL-PACKED RACE: READ ALL ABOUT IT
IN THE AMERICAN DIARY OF TWO DALLARA ENGINEERS

WS RENAULT

ENGINEER PIGNACCA PRESENTS THE T12, THE NEW CAR
MANUFACTURED AT VARANO FOR THE 2012-2014 SEASONS:
A LOW-COST CONCENTRATION OF TECHNOLOGY



F3

IN AN EXCLUSIVE INTERVIEW,
BERTRAM SCHÄFER EXPLAINS
THE REASONS BEHIND THE SUCCESS
OF THE GERMAN RACE SERIES:
“DALLARA IS THE PERFECT PARTNER”

GRAND AM

MAX ANGELELLI'S TWO FANTASTIC VICTORIES HAVE
KICK-STARTED THE TEAM SUNTRUST DALLARA-CHEVY'S SEASON.
THE SECRET? A RETURN TO THE ORIGINAL SPECIFICATION
OF THE CAR, AS MANUFACTURED BY THE FACTORY IN EMILIA

Dan Wheldon wins
The Indy 500





MANY HAPPY RETURNS!

THE 100TH ANNIVERSARY OF THE WORLD'S MOST FAMOUS RACE WAS A TRULY MEMORABLE OCCASION, AND, FITTINGLY, IT CAME DOWN TO THE VERY LAST BEND, WHEN AN UNEXPECTED TURN OF EVENTS HANDED THE UNDERDOG WELDON A VICTORY HE COULD ONLY HAVE DREAMT OF. THE PROOF THAT, AT THE INDY 500, TECHNOLOGY AND HEART GO HAND IN HAND WITH EXCITEMENT





Dan Wheldon
Kisses the Borg-Warner Trophy



Hildebrand crosses the finish line after crashing into the wall



Townsend Bell pushes Ryan Briscoe against the wall

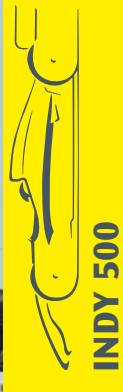


Pole sitter Alex Tagliani pits for fuel and tires

Overtaking, thrills, twists in the tail: the 100th edition of this 500 mile long race lived up to the Indy legend. Dan Wheldon's unexpected victory, which was handed to him on the final bend following JR Hildebrand's spectacular wall crash that saw him limp over the finish line on two wheels and dissolve into tears at the end of the race, was simply the last act in an action-packed race that was dominated for long periods by Chip Ganassi's veteran duo of Dario Franchitti and Scott Dixon, the Scot eventually having to stop for "splash" refueling on the last during the last lap. Race strategies were fundamental in determining the final positions, with Graham Rahal climbing from 29th position to finish third, ahead of the wily Tony Kanaan, followed by Oriol Servia, Scott Dixon, Bertrand Baguette, two famous racing heirs Thomas Scheckter and Marco Andretti, and Danica Patrick, the highest place woman driver who finished in tenth place after also having to come in for an extra pit-stop. Quite apart from the manner in which it was achieved, Wheldon's victory is important because it demonstrates that even so called minor teams have a part to play at the Indy 500. Counting on the reliability and adaptability of the Dallara, a car that can be moulded to

meet the requirements of drivers and engineers without the need for multi-million dollar budgets, and that, as can be seen from the numerous accidents during the race and the qualification stages, from which De Silvestro, Ho Pin Tung and Hildebrand walked away unscathed, combines high performance with total safety. Wheldon's triumph, which broke a ten year streak dominated by big names such as Penske, Ganassi and Andretti, gives a big boost to the English driver, who won at Indianapolis in 2005, and finished second in 2009 and 2010, only to find himself without a drive this season and forced to risk everything on the Indy 500, his first race of 2011.

Wheldon benefitted from his partnership with Sam Schimdt, an experienced ex-driver and successful manager with Indy Lights, and his friendship with Bryan Herta, an old hand on the American oval circuits, but also from how efficiently and rapidly his Dallara adapted to his skills as a "predator" of the race track. A further justification of Dallara's commitment in the States, and in particular at Indy, where the Italian manufacturer will continue to provide thrills, excitement, technical solutions and great duels over the coming years.



INDY 500



THREE DAYS OF PURE THRILLS

THE GREATEST SPECTACLE
IN RACING:
TWO DALLARA ENGINEERS
TELL US EVERYTHING ABOUT
AMERICA AND THE INDY 500



In this edition we'd like to tell you a story through the eyes and ears of two young men: One is from Florence, although he was born in London to an English mother, and he studied at Oxford. The other is from Schörfling in Austria, and graduated from Graz before coming to a small town in Northern Italy to work. Their names are Matteo

Tirinnanzi and Ull Thaler, and they have a lot in common: they share a passion for racing, they are both Dallara engineers and they have both worked on Indy cars: the former as a designer and the latter as a researcher on the test model used on the driving simulator. And, above all, they have both been to the Indianapolis 500, one of →



the three main events on the world motorsports calendar, together with the Monaco Grand Prix, and the 24 hours of Le Mans.

A great deal of their time is dedicated to watching and following European and Formula 1 racing. But their eyes light up when we start to talk about the world of Indy. So, without further ado, let's hand over to them and allow them to shed a little light on this special world through the pages of their "American Diary".

DEBUT ON CARB DAY

"We arrived on the Friday before the race, which is known as Carb Day, when they hold the final free trials

for the Indycar, and the Indy Lights 100, a sort of undercard to the main event. What a race! The drivers never stop overtaking each other, and there were so many crashes! Fortunately no one was hurt.

Next up was the pit stop competition, where the IRL teams compete to change tires and refuel as quickly as possible. At the end of the knock-out stage, the winner was Ryan Briscoe of team Penske.

There was a concert inside the Speedway stadium in the evening, and the atmosphere was just like an enormous party with everyone intent on enjoying themselves. People were walking around with portable fridges and cold-boxes full of beer. Some people wrap socks around their beer

to avoid getting their hands wet, while others bring armchairs with holes in the armrests for their cans."

A PARTY EVERYONE'S INVITED TO

"In the city, the inhabitants of Indianapolis let young people from all over America use their lawns to camp on, hold barbeques, dance and sing. There's a great party atmosphere everywhere you go in the city, and a sense of patriotism that infects everyone, both young and old. On Saturday we went to see the museum inside the circuit. For the centenary, all the cars that have won the race since 1911 were on display. The amazing thing is that most of them are still running. We were



Matteo Tirinnanzi and Uli Thaler are "up for" the legendary Indy 500



Matteo and Uli with the winner's trophy

especially pleased to see the 1998 winner, the first Dallara to win at Indianapolis, driven by Eddie Cheever.

We visited the museum together with several other people, but we left at least an hour after them. Let's just say that we got a little carried away by our passion for engines so that we found ourselves carrying out detailed inspections on the cars, and commenting on the technological evolution of each component! After the museum, we went into town to watch the parade with the various university bands, cheerleaders, pace cars, veteran Indy cars, and the drivers who line up for the public according to the starting order. A thing that really impressed us were the numbered seats

positioned along the way; these were reserved for individual people, and, naturally, everyone was in the right place".

ALL EYES ON THE DALLARA

"Sunday at last: race day! We got up at the crack of dawn to make sure we made it to the stadium on time. Some people had even been waiting since the previous evening, sleeping in their cars. Before the race there was another parade, followed by singing, and finally the American national anthem: 400.000 people on their feet facing the flag, and a silence that sent a shiver down your spine. At the end of the anthem there was a flyby by a B2 jet, which you don't hear

until it passes right over your head and tears away through the sky. Before the actual race there was a parade of old Indy cars, including the first winner from 1911. Dallara's two solutions for the 2012 season, the road configuration and the oval circuit configuration, were positioned in front of the pagoda close to the main entrance to the circuit. We waited around for a little while to listen to what people had to say: almost everyone commented on the appearance, the form, the lines, the colors, but no one seemed too interested in the technical aspects.

THE HUMAN FACTOR

"Here, the onus is on the drivers. Danica Patrick, Tony Kanaan, Dario



Franchitti, Helio Castroneves: they're the real stars, the ones people come to see. Whereas, in Formula 1, people see the machine as being more important than the driver, here it's the man who takes control of his car risks everything to overtake his rival. People don't only support Penske or Ganassi, the Real Madrid or Manchester United of IRL. They also cheer for the less favored drivers and the underdogs, and they're genuinely pleased when a driver from one of the minor teams wins, because the most important thing is to take part, to give your all and to

put on a great show. This mentality reveals a more human and less technological side to the event. Contact with the team, the car and the driver forms a fundamental part of the show: openness and approachability. And finally, the Race. It's the overtaking and crashes that really get the public excited, but there's never a dull moment: the cars never stop jockeying for position, there's always something going on and you can keep track of the race positions thanks to the enormous column located in the center of the track, which

is updated in real time. People who can't get hold of tickets for the stands can watch the race on the mega-screens set up inside the circuit, where there are also numerous shops for those who prefer shopping. You can also hire radio receivers that let you listen in on the conversations between the drivers, team engineers, race managers and the spotters (there are two spotters for each driver and their job is to provide them with a wide range of useful information: who's on the inside, who's on the outside, when there's an accident,





etc.), so that you feel totally involved in the race”.

AN IMPRESSIVE OVAL

“One of the most impressive things is the slope of the track on the bends, which reaches an angle of 8-10 degrees: in fact the TV coverage doesn’t do justice to this aspect, known as banking.

Back to the race: Hildebrand the rookie American, racing in the colors of the US Army and sponsored by the National Guard, seemed to have what would have been an enormously popular victory in his grasp right up

until the final curve, but he destroyed his car attempting to lap a back-marker and was passed on the final bend.

At the Indy, unfortunately, but also fortunately, there’s only room for one winner on the podium - at the Indy 500 the only thing that counts is victory - and this year, incredibly, the victory went to Dan Wheldon, an underdog. We had the honor of having our photograph taken with him the next day on the brick yard, and we just couldn’t get over how white his teeth were!

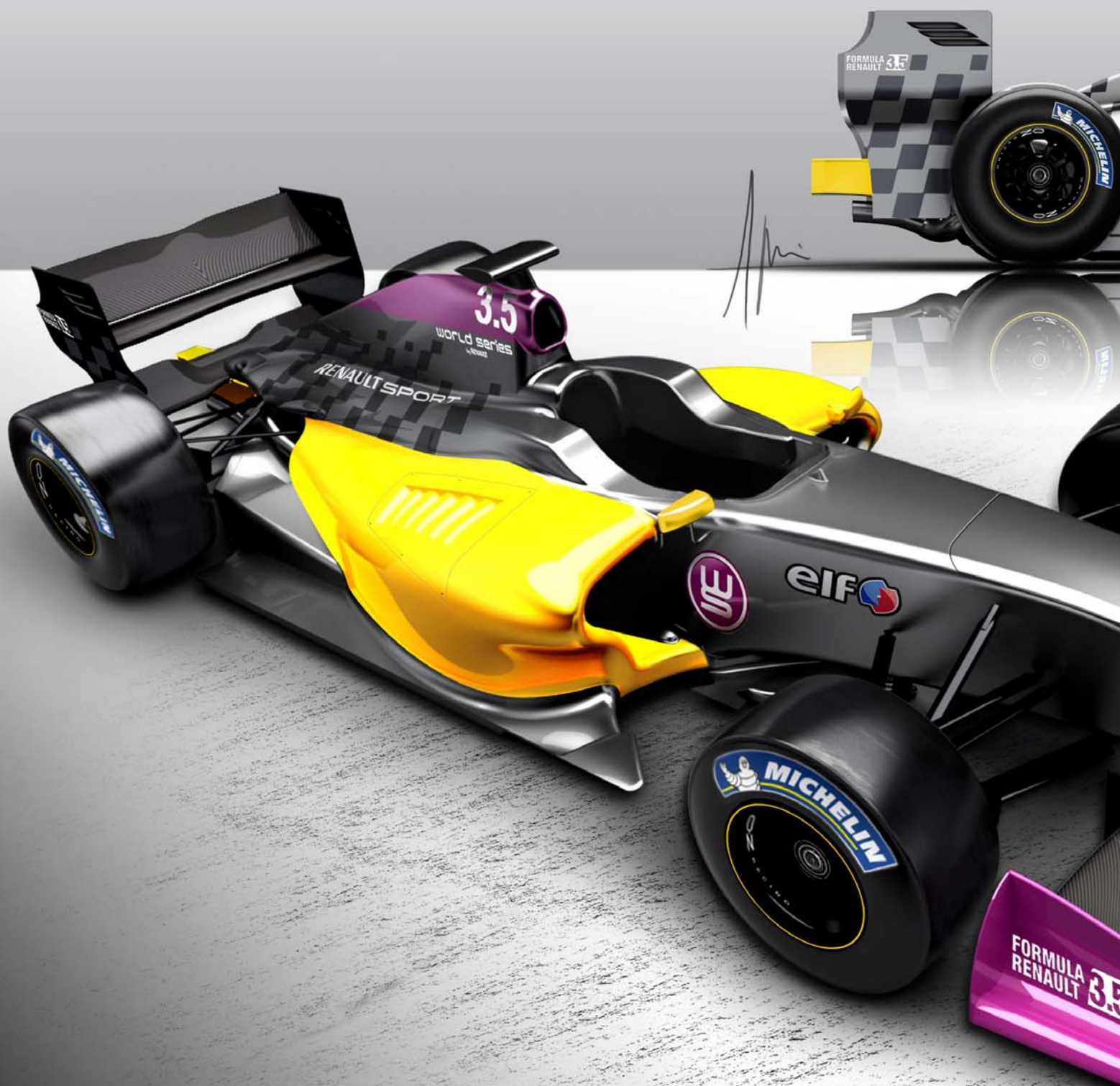
And so to the end of our adventure:

three days that went by in the blink of an eye.

The three days just flew past, but the Indy remains inside you. And you realize that, even if you don’t know the first thing about drivers, strategies, cars, suspensions, hub carriers and wings, you would enjoy yourself just the same. Because what you take away with you is the enthusiasm of the public that grabs hold of you and won’t let you go”. This is Indy, this is the 500, the greatest spectacle in motorsport.

Alessandro Santini







LIKE F.1, BETTER THAN F.1

PRESENTING THE T12, THE NEW DALLARA FOR THE 2012-2014 RENAULT WORLD SERIES. A RADICAL DEPARTURE FROM THE OLD CAR, INTRODUCING CUTTING EDGE TECHNOLOGICAL SOLUTIONS SUCH AS ENGINE ANTI-STALL AND THE DRAG REDUCTION SYSTEM. A SOLUTION THAT WAS INSPIRED BY, BUT NOT COPIED FROM, THE SENIOR COMPETITION. ENGINEER LUCA PIGNACCA, THE PRODUCT MANAGER, ELABORATES

From 2012 to 2014, the starting grids of the Renault World Series will feature Dallara's T12 single-seater. Although the car is not completely new, it does represent a radical re-working of the current T08. The Zytec, 3.5 V8, 530 CV engine is new, as is the gearbox, the hub carriers, the hub-bearing unit, the brake air intakes, the front and rear wings; in addition the weight has been reduced and we'll be using a brand new Michelin tire compound. The aileron will be fitted with a driver-operated nolder that creates a system capable of reducing resistance to the vehicle's forward motion, similar to the effect produced by the movable wing in Formula 1, although Dallara's concept is different. There is also an anti-

stall system that ensures the engine does not stop in the event of a spin, for example, enabling the driver to get back into the race. In addition to our traditional collaborators: Michelin for tires, Brembo for brake calipers, Carbone Industries for brake disks, Ricardo for the gear box and OZ for the wheel rims, a number of other partners were involved in the new T12 project: Zytec for the engine, Cosworth Electronics for data acquisition and engine management control, Shiftec for the pneumatic gear change system (the previous system was hydraulically operated), and XAP for the wiring, the steering wheel and the control unit that replaces the batteries. Dallara Engineer Luca Pignacca explains the innovations.

What is the most important innovation on the Dallara WSR 3.5 T12?

"Without a doubt the Drag Reduction System, which was introduced in Formula 1 this season. It was the part we enjoyed the most during the design stage, because we decided not to imitate the solution implemented in Formula 1, but to go a step further and create something completely new for the world of motorsport. The Dallara T12 driver pushes a button on the steering wheel to activate a nolder that enables him to gain more speed on the straights. Just like in Formula".

How did you evaluate the efficiency of the system?

"We started by running a numerical computer simulation,



using the CFD system, after which we carried out tests on scale models in our wind tunnel, before moving on to Paris where we performed 1:1 scale tests together with Renault technicians”.

In your opinion, will the other modifications make the new car much faster than the old one?

“We calculated that the car will be at least 2 seconds per lap faster, thanks to the full set of innovations, including the new Zytek engine and the decreased overall weight of the car. Initially, the project was based on the old engine, but then Renault signed an agreement with Zytek. At this point we had to make a number of modifications, and at the same time, the English manufacturer

fulfilled all our requests in a highly professional manner and implemented all the necessary modifications as quickly as possible”.

In order to decrease the weight of the T12 Renault you even considered removing the batteries...

“We didn’t just consider it, we did it! And it hasn’t got a starter motor either.

Another important innovation was the introduction of the anti-stall system. If the driver goes off the track or spins, the engine does not stop running, thus making it possible for the car to re-enter the race. This solution also contributed to decreasing the weight of the T12. The anti-stall system was produced by Cosworth Electronics”.

The T8 was in use for four seasons, instead of the usual three. This means that the car construction deadlines no longer all fall on the same date, thus alleviating your workload.

“In addition to the World Series Renault, F3 has also increased the working life of its cars by one year. In fact, as things stood, once every three years we found ourselves in a position where we were obliged to produce the Indycar, GP2, Renault World Series and F3 models simultaneously, and deliver them all on time. Now that these times have been staggered, our production sector can breathe a sigh of relief”.

Massimo Costa





RETURN



Klaus Bachler leads the pack

TO THE FUTURE

FORMEL 3 IS ONE OF THE MORE SUCCESSFUL NATIONAL CHAMPIONSHIPS CURRENTLY ACTIVE IN THE MINOR CATEGORY, IT FEATURES YOUNG DRIVERS, MANY OF WHOM ARE DESTINED TO BE STARS OF THE FUTURE.

THE ORGANIZER, BERTRAM SCHÄFER, BELIEVES THAT IN MOTORSPORT, AS IN MANY OTHER ECONOMIC SECTORS, THE WORST OF THE CRISIS IS NOW BEHIND US, EVEN SO IT REMAINS FUNDAMENTALLY IMPORTANT TO OFFER THE HIGHEST PERFORMANCE AT A REASONABLE COST:

“AND THE TRACKSIDE ASSISTANCE THAT DALLARA OFFERS US IS INDISPENSIBLE”



Mister Schäfer, are you satisfied with the development of F.3 series in Germany? Which are its strenghts? Among European F3 where would you place it in the charts?

"I am really satisfied with our series especially with a look on the decreasing development in other national series or f3euroseries as well. One of our biggest advantages is that we are the most competitive series regarding cost-benefit equation. So at the moment we see us on a good developing level".

Do you think Volkswagen participation in rally will take away means and resources to F3 or, on the contrary, could increase the commitment of the engine supplier in other series too?

"Our package with Volkswagen is fixed for the next three years (2012-2015) and will not see any detracton due to the new rally engagement of Volkswagen in the world championship".

Which is the influence of the economic crisis on German motorsport? Do you judge the decision of keeping the old car version a successful choice?

"I think that the negative trend has stopped already and everything starts changing to get back on a healthier basis. Keeping costs low and still having a competitive championship is the philosophy of our championship. With having a look on the costs of chassis or engine and without reducing the quality of the performance we did well throughout the last years with our well-priced formula-3-series".

How do you consider the world state of art of F3 category from your German point of view? Which new markets F3 series could address to?

"The F3 category is still one of the most important series to be in for an upcoming driver. If your coming from karting and other feeder series you have to be in F3 to learn everything in professional motorsports. Formula 3 offers better and more driving and a stronger learning curve than any other category in this part of a drivers career. And not to forget on a fair prize. Asia and also North America will be good markets for successfull formula-3-series".

Which is Dallara's surplus value to German F3 series? Could you explain us how the relation between the Italian car manufacturer and the F3 series develops? Which are the strenghts of Dallara's project and what would you suggest to Italian engineers for the next car release?

"Dallara is the important chassis manufacturer. The best quality of a chassis on reliable costs are very important for feeder series. The service at the track is one of the biggest needs each series has and a great support Dallara is offering within our championship".

Which drivers now attending your series do you bet on for the future?

"We are early in the season but the strength of our international field is great. Series leader Richie Stanaway from New Zealand or Marco Sörensen from Denmark have all the skills to be successfull. Furthermore Alon Day from Israel and also Tom Blomqvist from Sweden are developing fast now. German-speaking participants like René Binder or Klaus Bachler have shown their strength already and start to establish as front-runners".

Alessandro Santini





Tom Blomqvist



Marco Sorensen



“THE COM



ANGELELLI: MEBACK STARTS HERE”

THE VICTORIES AT LIME ROCK AND WATKINS GLEN BREATHED NEW LIFE INTO THE CHAMPIONSHIP CHALLENGE OF THE ITALIAN DRIVER AND RICKY TAYLOR, AT THE WHEEL OF THEIR CHEVY-POWERED DALLARA

The two races at Lime Rock and Watkins Glen have re-opened the Grand Am. Championship. Max Angelelli, Ricky Taylor and team Dallara-Chevy Suntrust have pulled off a surprise double victory, kick-starting a season that, although it got off to a promising start, had failed to live up to

expectations. Angelelli and his Chevrolet-Dallara are now hot on the heels of Team Ganassi's Riley-BMW driven by Memo Rojas and Scott Pruett, and with six races left, there's still everything to play for. Dallara has played an essential role in team Suntrust's renaissance, as Angelelli is keen to underline. →





"Absolutely. The team's technical director was relieved of his duties in November, and his two assistants were appointed in his place. The result was a wide-ranging series of technical changes, which were made possible by Dallara and their technical staff. Without their help, we would never have been able to replace a management system that was not achieving the desired results, or become so competitive so quickly". A fundamental move that helped to accelerate the necessary operations, while shielding the team from the technical upheavals. "Dallara offered their full support. The engineering team from Varano were responsible for setting up my car before each race, working until 2 or 3 o'clock in the morning". At this point, the aim is to build on these results, and continue to make up ground on the

championship leaders. "And overtake them, obviously, otherwise we won't be happy ...", explains Angelelli, who has become used to spectacular and exciting comebacks over the years: "I'm going to try my hardest this time too", smiles the Bolognese driver, "although I know it won't be easy". According to Angelelli, the technical turnaround is the result of a back-to-basics approach: "Thanks to the... stubbornness, shall we say, of the old technical management structure, over the last couple of years, my Dallara was always being modified. Too much really. But now I'm back to driving the standard car, the one that we took delivery of in 2008, which is exactly as it was when it left Dallara's factory". Max the Axe, as Angelelli is known in the USA due to his ability to "chop down" his

adversaries on the track, is also keeping an eye on Dallara's expansion in America, beyond the world of Grand Am. "I often drive past the site of the new Dallara factory in Indianapolis and you can see the progress being made there. The strange thing, for me, is that it's located right in front of the old Riley factory, which was like home for me for a number of years. Riley is an important brand name, and while they were in Indianapolis they sold a lot of cars, but now the factory's closed they're feeling the consequences. On the other hand, Dallara has relaunched by building its own, hi-tech factory under the eyes of its old rival, and the difference is there for all to see: decadence versus innovation". According to Angelelli, the decision to establish a significant presence in the USA



Refuelling
at the SunTrust box

is a guarantee of success.
"It's not up to me to offer advice, but I think Dallara should be aiming to "americanize" a little bit. It's a highly successful Italian company, but the new factory is fundamental because it means that American motorsports tends not to view it as a foreign influence, but as an important part of the environment, and not only on a technological level". For the time being, Angelelli is hoping for more success on the track. But he doesn't rule out that, one day, his extensive knowledge of motorsport on the other side of the Atlantic may help him to fill a different role: With Dallara, naturally. *"They know me too well to offer me job at Varano", jokes Angelelli. "But I can't deny that, if such an opportunity were to arise, it would make me really proud. You just can't do enough for the Engineer".* Starting with the comeback in Grand Am.

Stefano Semeraro



Ricky Taylor
and Max Angelelli
proudly display
the Winners' Trophy

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