

dallara

03/2010

MAGAZINE

PUBLISHED
BY DALLARA

THE PURSUIT OF EXCELLENCE

GP3

THE NEW SINGLESEATER
PASSES THE TEST IN THE
TWO DAYS OF PRACTICE AT
THE PAUL RICARD CIRCUIT

FORMULA 1

DALLARA HAS A 22 YEAR HISTORY WITH F1:
FROM THE BEGINNING WITH
SCUDERIA ITALIA TO THE
ENORMOUS WORK DONE
TO ALLOW THE HISPANIA
TEAM'S DEBUT IN THE
2010 CHAMPIONSHIP.
HERE IS THE ENGINEER'S STORY



INDYCAR

TONY KANAAN SPEAKS OF HIS GREAT
RELATIONSHIP WITH THE FACTORY
AND PROMISES "I WILL WIN THE 500 MILES"



TEST PASSED

AFTER THE FIRST TESTING OF LAST YEAR, PERSONALLY CARRIED OUT BY MARK WEBBER, THE NEW CAR PASSED WITH FLYING COLOURS, EVEN ON THE FIRST TWO DAYS AT THE PAUL RICARD CIRCUIT, WHERE ALL 30 CARS TOOK TO THE TRACK WITH GREAT SUCCESS

After last year's tests, during which the newly created Dallara GP3 was developed and was also baptised by F1 driver Mark Webber (who being the joint owner of a team, tested the car himself), the years first pre-season testing was held at Circuit

Paul Ricard. The car has changed engine to the Renault Turbo 240 hp which is equipped with a Hewland 6 speed gearbox with steering wheel paddle control and also Pirelli tyres, developed especially for this category. On the 4th and 5th March the ten

participating teams took the thirty cars, which had not participated in January and February, out on the track. Despite the fact that the weather could have been better, all the cars went out on both of the scheduled days, putting many miles of track under their belts.

Michael Christensen
MW Arden team's danish driver





After just a few sessions getting to know the car, there is already a group of drivers fighting for position and for the best time, just like a real race; an unusual situation to see on the first test of the championship with a completely new car! It has given us a taste of what can be expected during the season!

All of this has really impressed the technical director of GP3, Didier Perrin, who expects to see “great things during this season”, similar to the opinion of organiser Bruno Michel, who said he is convinced that they “have got off on the right foot”, with at least 13.300 km covered in the first two days of

testing. As expected, there are no free seats: all the teams have demonstrated that they are ready and prepared to face the championship. Amongst the historic world teams of the continental courses, such as Carlin Motorsport and ART, already big names in F3 and GP2, the opinion is shared by many team managers of the great support given by Dallara and the other technical partners that has allowed all the objectives to be achieved ready for the 2 days at Le Castellet. The amount of technical preparation by the ten teams is clear, they have been given permission to enter all thirty of the cars on the grid when

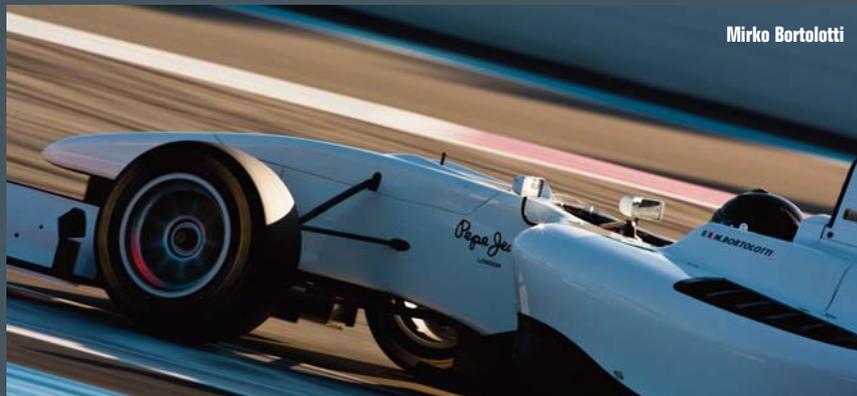
the pit lane is first opened! The drivers have a similar view, they immediately had a good feeling about the new single-seater, they are optimistic about the work to be done and for the excellent training that will provide for the launch into Formula 1 they are hoping for.

The next two events will be a further two training sessions, again at Paul Ricard and then at the Circuit de Catalunya, before the official championship debut which coincides with the F.1 weekend, again at Barcelona, on 9th May.

Project Manager GP3
Antonio Montanari



Dean Stoneman
with the single-seater
of the french team
Tech 1



Mirko Bortolotti





Esteban Gutierrez,
the mexican of the ART team

“ME AND DALLARA, A TRUE LOVE S



STORY”



Tony Kanaan

AN INTERVIEW WITH THE BRASILIAN DRIVER. HE DRIVES IN THE INDYCAR BUT HE FEELS AT HOME IN VARANO DE'MELEGARI

Having raced with so many teams, what, in your opinion, makes Dallara so special?

“With me and Dallara - it's like a love story. Dallara help me when I started to race in Europe, they took care of me like a son. To visit the factory is like visiting your family - you know everybody by their first name. You work with the engineers at the shop or having a delicious dish of pasta and good wine ... we can keep talking about cars & races forever. It's very special!

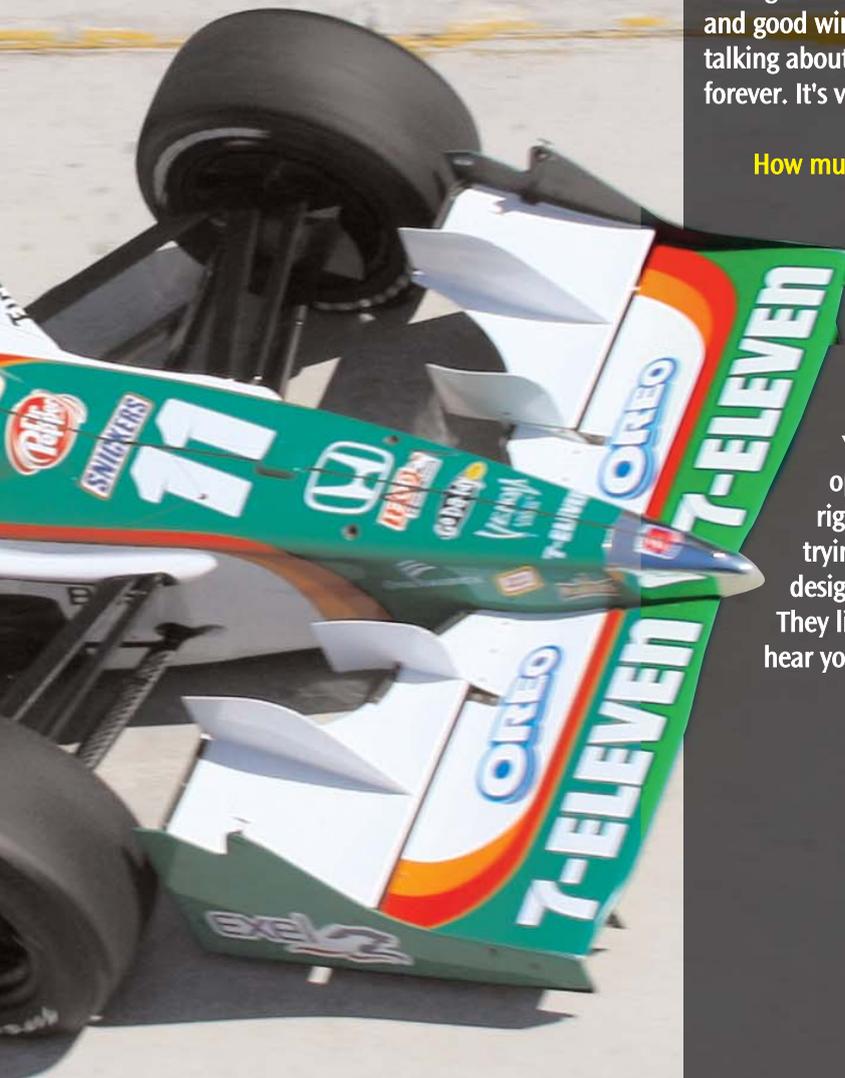
How much do you think you have contributed to the Dallara success?

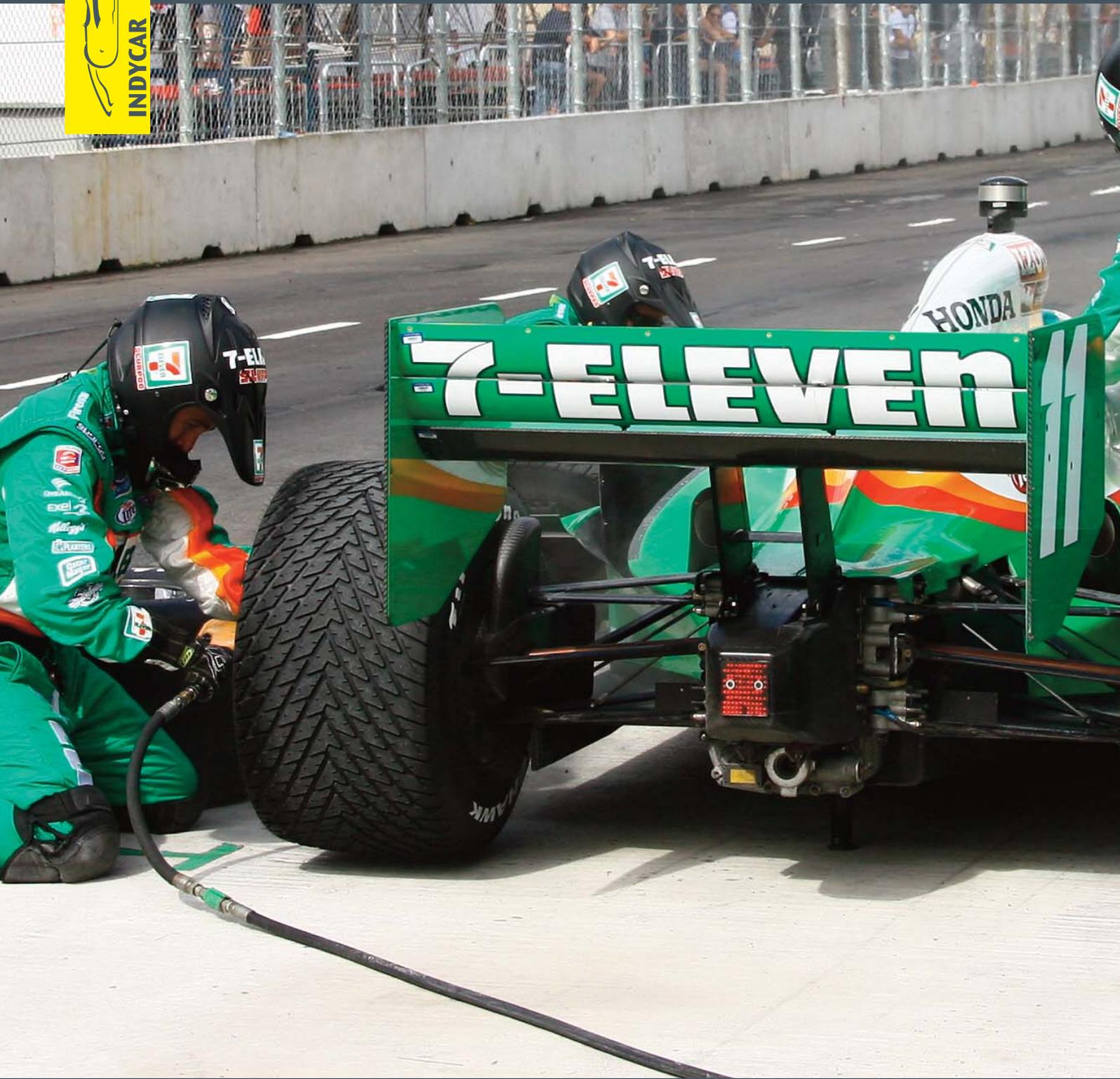
“Sincerely, for me it's an honor and a privilege to work with Dallara. You give them some opinion and they are right on it - always trying to improve in design and development. They listen to you - they hear your arguments and

do their homework. If I was able to help then...great! But, the true is - they help me much more - giving me great cars to race and setting new standards of safety and technology”.

You race with so many different singleseaters in so many series (F.Abarth, F3 in Europe, Indy Lights an Indycar in Usa) : have you any regrets since you never been on a F.1 starting grid?

“I've always followed F.1, I'm very good friends with Rubens and I knew Ayrton Senna well and used to go to the races with him. My main goal when I was little was to come to Formula One and obviously as time goes by, you don't get a good opportunity or a, chance to do it so you've got to try to make a living out of racing. Thanks to Honda - I've earned the opportunity to drive F.1 when I won the IRL Championship in 2004. It was definitely a dream come true from me, I had fun and enjoyed the opportunity. I can tell that story to my son one day”.





«SINCERELY, FOR ME IT'S AN HONOR AND A PRIVILEGE TO WORK WITH DALLARA. YOU GIVE THEM SOME OPINION AND THEY ARE RIGHT ON IT - ALWAYS TRYING TO IMPROVE IN DESIGN AND DEVELOPMENT. THEY LISTEN TO YOU - THEY HEAR YOUR ARGUMENTS AND DO THEIR HOMEWORK. IF I WAS ABLE TO HELP THEM...GREAT! BUT, THE TRUTH IS - THEY HELP ME MUCH MORE - GIVING ME GREAT CARS TO RACE AND SETTING NEW STANDARDS OF SAFETY AND TECHNOLOGY»

TONY KANAAN

Tony Kanaan



This year you're part of a very new team, owned by Michael Andretti, with a brand new car: how do you rate your chances in the championships?

"I'm very excited about the future of the team and I'm looking forward to being a contender again in 2010. Everyone at Andretti Autosport is 100 percent focused on winning races and championships. I can't be happier with Michael Andretti as my race strategist and veteran Pete Gibbons (Michael and Mario Andretti's engineer at Newman/Haas Racing in the 1990s) as my engineer. The boss is with me now. I think Michael, being a race car driver, he understands all the pros and cons and I always have had a very close relationship with him. He was the one who hired me to drive for him – to replace him actually – back in '02 and I came to the team in the '03 season. It's awesome because I can talk straight up and he will know exactly what

I mean. I think he did a great job his first year calling the races for Danica so it's always nice to have the boss around."

You already won the IndyCar Championships and got the pole at Indy 500, but you never won the "the race". If you could choose will you pick a new championships title or the first win in the Indy 500?

Whenever I talk to my boss, Michael Andretti, about Indy, he tells me, "Don't worry. You're going to win it." This is coming from a guy who went through the same thing but never won it. Should I believe him? Honestly, I think so. To do otherwise would be detrimental. It also wouldn't be much fun. The key is to remain positive, and I have plenty of reasons to do so. Every time I've raced in the Indy 500, I've had a chance to win. The only way you can win the race is by being consistently fast in it. You have to be able to put yourself in position to win this race, and you can't do that unless you're fast. We've proven year after year that we can be fast in the Indianapolis 500. We have put ourselves in position to win it. The next logical step is to actually win it.



F.1 DALLARA: A TWENTY-TWO Y

Dallara and F1: the chassis designed for Hispania Racing Team is just the most recent chapter of a long story. An adventure that began twenty-two years ago and continues to come up with surprises. Everything began in 1988, in Brescia Italy, with the Scuderia Italia, founded by Giuseppe Lucchini, who worked in the steel industry and had a passion for cars with some experience as a competitive driver: all for Dallara except the Ford Cosworth engines. After the Brazil debut in a Dallara F3000 car that was adapted to F1 regulations (which was possible at that time), Alex Caffi achieved encouraging results, considering that it was a new team and a new car for him. The second year was even more impressive.

Caffi's Dallara was in second place in the US Grand Prix at Phoenix, unfortunately after an attempt at lapping his own team mate, Andrea De Cesaris who started in sixteenth, the two Dallaras were forced to retire. The two drivers redeemed themselves however: in Monaco, where Caffi finished fourth; and Montreal, where De Cesaris took an incredible third place and put a small team on the podium, a truly exciting result! Unfortunately it is was not repeated in 1990. De Cesaris, Emanuele Pirro and (in reserve) Gianni Morbidelli did not achieve the desired results and the team had to face the dreaded pre-qualifying in 1991. For the new season with the Ford-Cosworth (Judd 10 cylinder) engines, Pirro joined the Fin JJ Lehto, who finished in third position at the San Marino GP. 1992



The Scuderia Italia's Dallara 191 driven in 1991 by J.J Lehto. 1992 was the last F1 season for Dallara



YEAR HISTORY

The Scuderia Italia's
Dallara 188 driven
By Alex Caffi in 1988



F.1 DALLARA: A TWENTY-TWO YEAR HISTORY



saw a move to a Ferrari engine and would be the final year for the Scuderia Italia's Dallara.

It seemed like it was over, but the opportunity returned. In 1999 Honda knocked on Dallara's door to ask them to make a car to rejoin the great F1 competition, after exiting way back in 1968. It was supposed to be a kind of exercise in style, a prototype, waiting for a Honda Centre in England to take care of development. Designed together with the British engineer Harvey Postlethwaite, who had previously worked for Ferrari and Tyrell; the car was subjected to long testing sessions both at Suzuka and Jerez, and the Dutch driver Jos Verstappen achieved amazing times with the Italian-Japanese singleseater. Postlethwaite's sudden death from a heart attack and Honda's decision not to devote themselves to their own team, but to support the BAR team with their engines, put an end to the project.

The F1 project did not even take off in 2005 when the Midland owner, Russian-Canadian businessman Alez Shnaider asked, through his director Colin Kolles,

for a Dallara singleseater. Later however, Schnaier took over Jordan and under pressure from the English team's technical personnel, he decided to stop the collaboration with Dallara. After that, the Parma business worked solely



Emanuele Pirro in the cockpit of the Scuderia Italia's Dallara 190 in 1990

on the development of certain aerodynamic details.

And it continued like this until recently, when between 2009 and 2010, Dallara's real second adventure in Formula one began. Not an easy route, but one taken with the Varano factory's usual passion and professionalism. There have been

Right, the Honda 199 prototype designed for the Japanese factory in cooperation with Harvey Postlethwaite



many obstacles: firstly, there was the budget cap which attracted new teams to enter F1, but then failed to materialize; then the financial mishaps of the Campos-Meta team, which in less than a month changed owner and became Hispania Racing Team, managed by Colin Kolles. Then the debut in Bahrain, where the first GP of the season was transformed into a shakedown for the Dallara chassis.

In the Engineer's words

Montanari: "The F1 today? Ultra technological, but does it cost too much"
Pignacca: "We need regulations to help the show"

We spoke about Dallara's F1 experience with the director of production and engineer Italo Montanari, who has been with them since the days of Scuderia Italia.

What is your assessment of Dallara in F1 in these years?

"With regards to the Honda and Midland projects, there was a block that did not come from us, but from the client. With reference to the experience with Scuderia Italia on the other hand, I would say it was positive. We were one of the few small teams to finish several times in the points and to be competitive".

How do you see F1 today?

"It is not good for the small teams. It requires a crazy budget that only the big car companies can afford. It is difficult to stay afloat for a small team. Furthermore, at a technological level, in the past the transfer of knowledge between track and industry benefited the smaller teams who took a lot from the innovations in F1. Now the F1 single-seater is a

world within itself, almost self-referential". Does the technological evolution also bring management problems?

"Yes, I would say almost an exasperation that makes you look around at the others. There is little time to experiment, optimize...". Engineer Luca Pignacca, Dallara's chief designer is on the same wavelength; we asked him what the difference was between today's Dallara and that of twenty years ago. "Compared to twenty years ago, technology has moved forward in leaps and bounds. What is striking is the complexity of all the systems, especially electronic and hydraulic. The Dallara BMS of Scuderia Italia was technologically at a much lower level than today's GP2". Regarding GP2, how is it that in the other categories the entertainment level and the overtaking chances are much higher compared to F1?

"In GP2, for example, the cars are all the same. Therefore more equilibrium is to be expected. In F1 the budgets and the cars are

very different from team to team and therefore the hierarchy of value shows the disparity. There are more regulations, which are not concerned with entertainment. Especially for aerodynamics, in F1 when one car is behind another, overtaking is difficult because of the so-called "stream". Even if it has not been scientifically proven, if the load was lower, they would be less sensitive to the streams.

Which are your best memories of Dallara in F1?

"I have good memories of the experience with Scuderia Italia. We achieved good results, also getting some podium finishes. Many of the little and medium level teams of that time vanished, while Dallara is still here after twenty years, as stronger and reliable as ever".

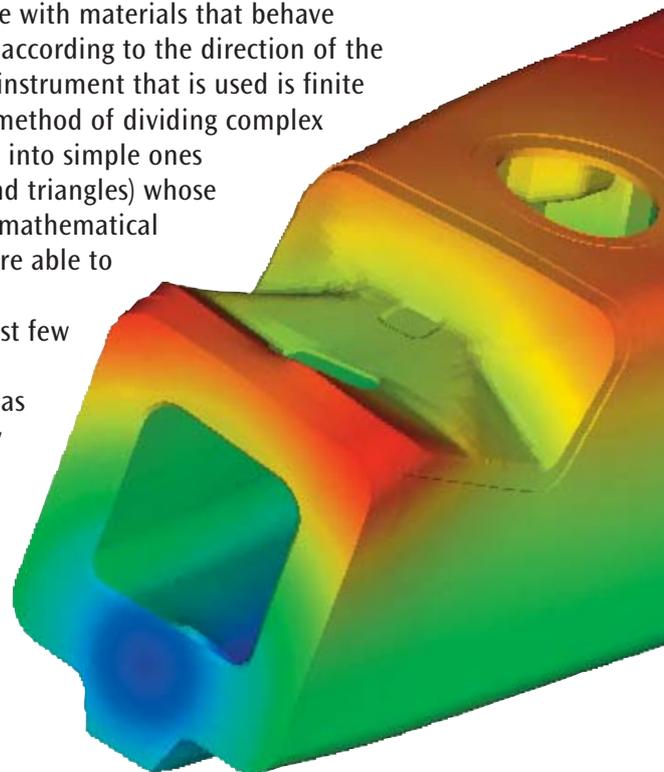
Dallara and F1: a history that began in 1988, with fascination and incredible emotions and it is a partnership that should never be written off.

AND SO SPEED IS “CON

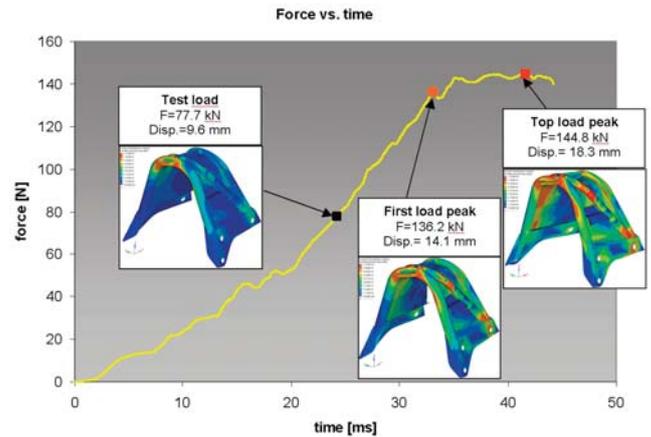
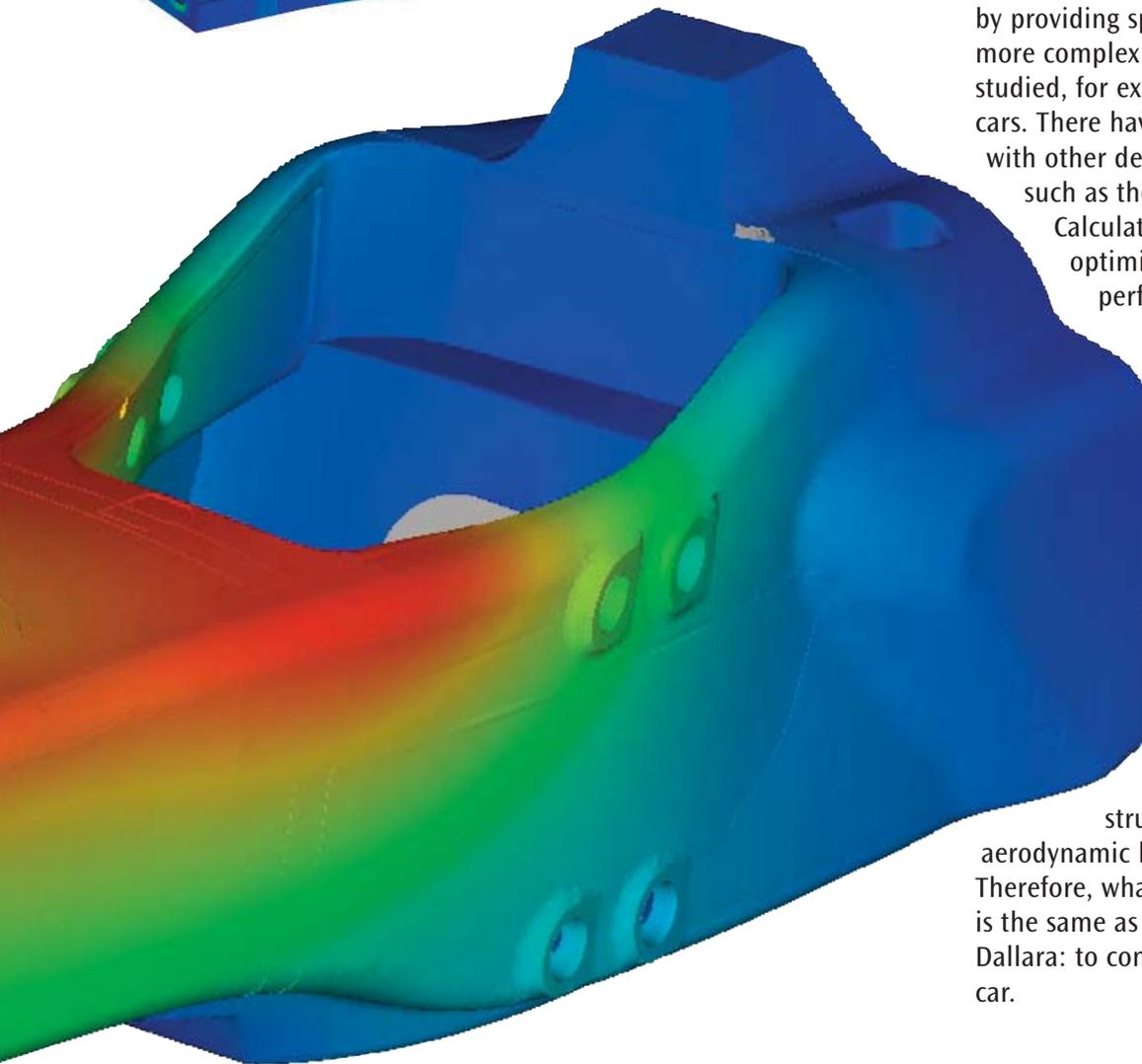
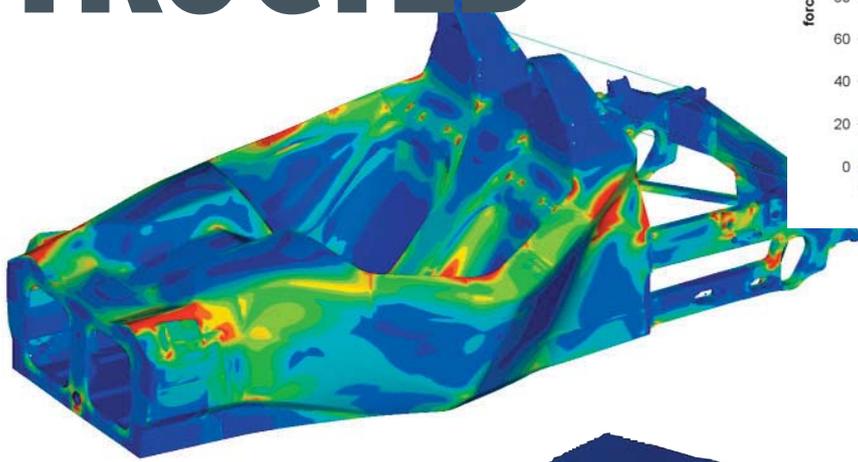
IN THE LAST 50 YEARS THE STUDY OF THE MATERIALS AND STRUCTURES OF RACE CARS HAS MADE GIANT STEPS FORWARD. TODAY, THE LEVEL OF THE DRIVER’S SAFETY IS VERY HIGH, BUT FOR MECHANICS AND ENGINEERS THE PROBLEM OF FINDING SOLUTIONS FOR IMPROVING PERFORMANCE ON THE TRACK REMAINS, TOGETHER WITH MAKING THE SOLUTIONS COST EFFECTIVE. AN ALMOST IMPOSSIBLE SITUATION, WHICH HAS HOWEVER RESULTED IN THE COOPERATION BETWEEN THE FACTORY’S DIFFERENT DEPARTMENTS AND THE DEVELOPMENT OF NEW TECHNOLOGIES

In the Formula 1 of the sixties one in eight accidents carried serious consequences for the driver, sometimes even death; today the figure is one in fifty. Seeing Kubica coming out unscathed from the crash he had in Montreal 2007, gives a good idea of the safety levels in current cars. Nowadays, the car acts like a protective cell around the driver, so much so that almost every year the FIA modifies the rules, demanding that cars pass ever more stringent tests. Such rules are then extended to the other categories so that more drivers are able to benefit. Each part that covers one of the driver’s essential organs is subject to tests: static tests that require a certain load for a specific amount of time; other active tests where the chassis is subjected to crashes at various speeds and directions. To get an idea of how difficult the tests are to pass, think that the roll bar is subjected to a load of around 12 tonnes, whilst the force recorded in side impact is around 15 tonnes. Being able to pass the tests is necessary in order for a car to race, but for it to win it must also have other characteristics: it must be light and rigid; and if the category is a single brand it must also be “affordable”. It becomes immediately obvious that these different needs overlap and contradict each other. How can the best configuration be put together, to satisfy all these requirements?

That is the job of the department for Structural Analysis. In the last year we have worked a lot, looking at solutions that may satisfy the various requests. For example we created reinforcements for more tests that also would have the effect of improving the rigidity. We have introduced unbalanced laminates, so that we could improve the rigidity and resistance, without affecting the weight whilst being able to abandon the ballistic type of (heavy and expensive) material to absorb energy. But how is it possible to predict the behaviour of a structure in various complex forms made with materials that behave differently according to the direction of the fibre? The instrument that is used is finite elements’ method of dividing complex geometries into simple ones (squares and triangles) whose behaviour mathematical formulae are able to explain. Over the last few years the company has continually invested in this



STRUCTURED”



technology, firstly by increasing the number of dedicated staff, and therefore by providing specialist programmes. Ever more complex problems can therefore be studied, for example the collision of road cars. There have also been collaborations with other departments of the company, such as the attempt to define the Calculation Office's target for optimized rigidity with regards to performance and the ever more precise introduction to the study of fatigue's methodology. The collaborations between colleagues become ever closer, working together on materials, toward the ideal performance evaluation of new composites and with the new aerodynamics department, in particular CFD, for the definition of distortion in structures subjected to aerodynamic loads.

Therefore, what is our work's objective? It is the same as everyone who works in Dallara: to construct a faster and safer car.

Andrea Giubellini
Manager Structural Analysis

A quest for glory

HALF WAY THROUGH APRIL, THE CATEGORY THAT IS BEST AT PREPARING YOUNG TALENT FOR THE DIFFICULTIES OF F1 WILL BEGIN ITS SIXTH YEAR. IT INCLUDES A CAR, THE DALLARA T08, WITH POWER, TECHNICAL EVOLUTION AND SAFETY FEATURES THAT BRING IT VERY CLOSE TO ITS FORMULA ONE EQUIVALENT



Jean-Eric Vergne
Junior Red Bull driver's

Last week's group testing at Alcaniz brought the pre-season 2010 of World Series by Renault to a close, and it is now just over two weeks until one of the most interesting and competitive continental championships for the singleseater begins. The series began in 2005 following a discussion that began with the World Series by Nissan in 2002 and has continued to rely on the collaboration with Dallara, a combination that has made the category, promoted by Renault, the ideal series for preparing drivers for a carrier in Formula One. After the Dallara T02 took to the track in

the three years between 2002 and 2004, when the Nissan name was still being used, and the T05 (2005-2007), this year will see the turn of the T08, development of which began in 2008 and which has now reached its third year in existence. A car that can comfortably draw nearer the F1 car at a technological level, especially in terms of aerodynamics and safety. The Dallara T08 is the same size as an F1 car, with Michelin tyres, and has passed the strictest crash test set by the FIA. With 500 horsepower at 8500 rpm delivered by a Renault V6 3.5 litre engine and kept grounded

by the very efficient aerodynamics it is the ideal trial for driver wishing to get used to the performance of the top categories. Amongst the drivers that shined in the World Series by Renault and moved directly to F1 are Robert Kubica, Sebastian Vettel and Jaime Alguersuari. The championship will begin on the 18th April on the Motorland Aragon circuit in Alcaniz, and will continue with a further nine dates, all in Europe: Belgium, Germany, France, Monaco, Hungary, Czech Republic, Great Britain and Spain. The winner will be given a test with the Renault F1 team.