dallara MAGAZINE

Nr. 27
Year 2013

PUBLISHED
BY DALLARA

"Periodico regolarmente registrato presso il Tribunale di Parma (n.16, 03/09/2010)"

THE PURSUIT OF EXCELLENCE

INTERVIEW WITH GIAN PAOLO DALLARA

THE FOUNDER OF THE FACTORY STRESSES THE IMPORTANCE OF MEETING FUTURE CHALLENGES WITH AN OPEN MIND AND ATTENTION TO A SERIES OF FUNDAMENTAL THEMES: INNOVATION, COST MANAGEMENT AND ATTENTION TO MATERIALS. BECAUSE TOMORROW'S RACING WORLD BELONGS TO TODAY'S YOUNG PEOPLE

MOTORSPORT AND INDUSTRY

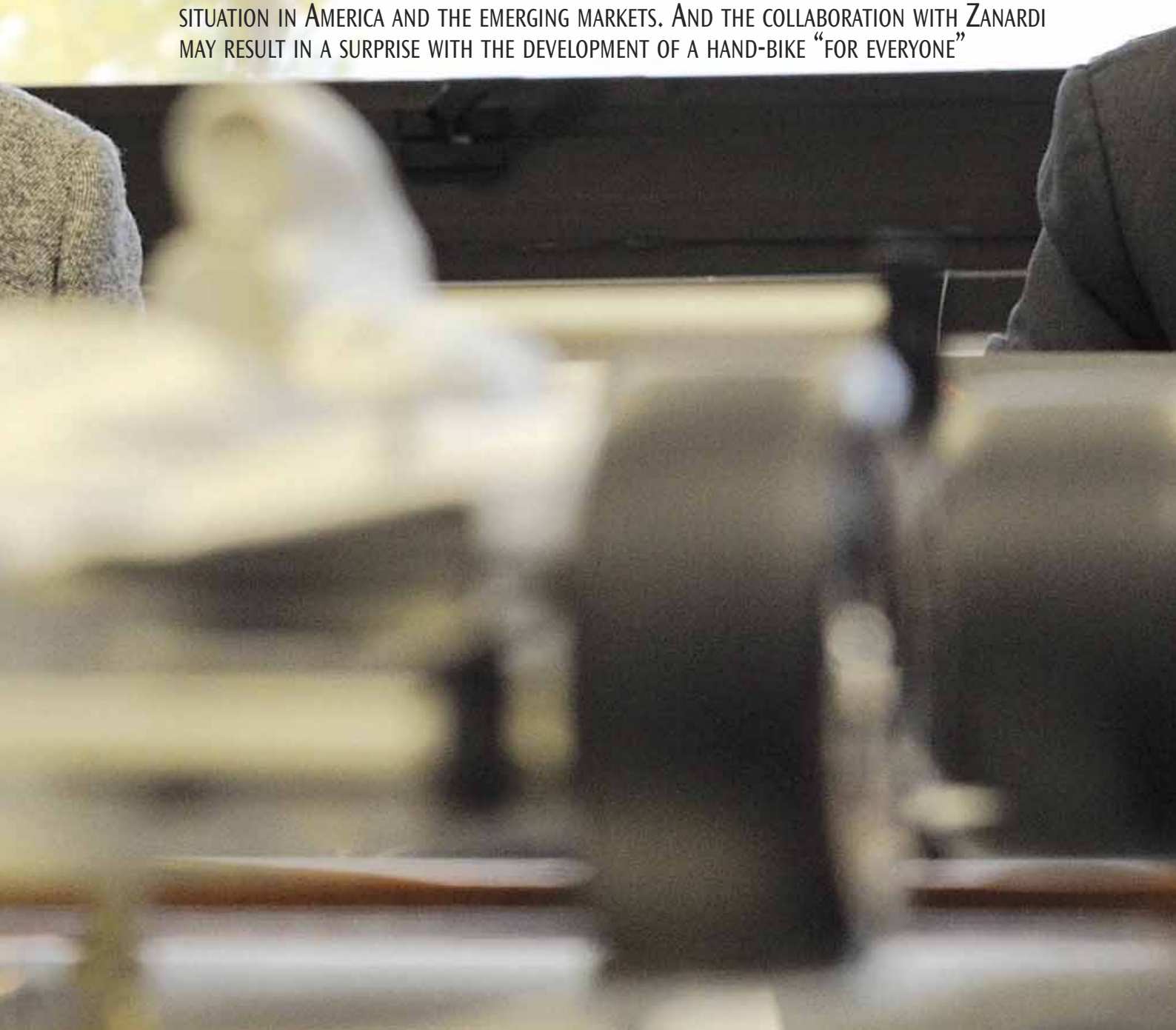
WE TALK TO THE MANAGING DIRECTOR OF DALLARA, ANDREA PONTREMOLI, ABOUT THE IMPACT THAT ITALIAN AND WORLD MOTORSPORTS CAN HAVE ON THE ECONOMIC CRISIS. RACING REPRESENTS A WEALTH OF HUMAN AND TECHNOLOGICAL RESOURCES THAT CAN OFFER TANGIBLE BENEFITS TO THE WIDER INDUSTRIAL COMMUNITY

THE FUTURE OF INDYCAR

THE ONUS IS ON SAFETY, AS REQUESTED BY THE DRIVERS, BUT WITHOUT COMPROMISING THE EXCITEMENT THAT IS THE ESSENTIAL ELEMENT OF AMERICAN MOTORSPORTS. IN A FULL AND FASCINATING INTERVIEW ENGINEER TOSO REVEALS ALL THE SECRETS OF DALLARA'S AMERICAN ADVENTURE

«MOTORSPORT MUST INVEST IN YOUNG PEOPLE»

In an increasingly globalized world, the factory in Varano de' Melegari is well-prepared for the new challenges facing motorsports. In an exclusive interview, Engineer Dallara underlines how his company will continue to invest in innovation, in intelligent management of costs and "green" materials, while keeping a close eye on the situation in America and the emerging markets. And the collaboration with Zanardi may result in a surprise with the development of a hand-bike "for everyone"



Engineer, the experts are predicting that 2013 will be another difficult year, for the global economy and for motorsports. Do you at Dallara intend to continue investing in research and innovation?
«We will continue to invest in research and innovation, even though I have to admit that 2013 does not look like being a particularly difficult year for Dallara. We have a number of projects underway, and various commitments that have already been scheduled, and this enables us to plan our activities, and that includes a great deal of Research and Development».

In your opinion, what are the challenges facing motorsports in the short term?
«Getting young people involved in the sector again, by leveraging their customs and habits and using the communication processes that are an integral part of youth culture. The status quo whereby the "driver races and the spectator watches" is fast becoming a thing of the past, and it has become necessary to reinvent the spectator/motor racing relationship, making use of virtual reality applications that will enable young people to challenge the drivers».

And where does the future of motor racing lie? The far east, the emerging markets, or will it always be a predominantly European and American concern?
«It's a global world, and this means that the globalization of motorsports is inevitable. It is important to resolve the problems in the West first, since this is where the sport is most popular. Rather than East and West, I think it's more accurate to talk in terms of mature markets (Europe, USA, Japan) and emerging markets (India and China in particular)».

Will the new F.1 technical configuration that comes into force in 2014 result in any changes in the other main racing categories?
«It's very likely: the engines will probably become lighter, smaller and more efficient; a process that is already underway throughout the automotive sector. There will be increased onus on energy recovery: I would expect to see much more widespread use of hybrid systems».

What will the increased us of green engines mean for chassis builder, such as Dallara?
«I don't envisage any particular problems, apart from the need to design stronger battery compartments and to modify the way the weight is distributed».

What evolutions do you expect to see in the minor championships, starting with F.3?
«The regulations for F3 have already been defined. Given the ever increasing importance of cost, the decision to opt for unsophisticated motors is entirely reasonable. Over the next few years, the engines will also be downsized in other categories, such as World Series, GP3, GP2, etc.»

Will there be any further developments on the Dallara simulator?
«The simulator is set to play an important role in preparing drivers, cars and technicians, as well as in the efforts to make the competitions more accessible to the spectators. This process is still in its infancy, and there will be continuous developments over the next few years».

What are Dallara's long term objectives in the USA?
«It will be necessary to increase the number of components produced for the American racing car market in our American factory, which will become an engineering center at the same level as here in Varano: the two factories must work together on coordinated R&D activities designed to create high performance production models. For this reason, we intend to expand the operation along the lines that have already been tried and tested in Italy».

What did you learn from the extraordinary experience of working with Alessandro Zanardi?
«You cannot put a price on the privilege of working with and getting to know a real man like him, it's indescribable. He is an example and a stimulus to everyone who has the good fortune to meet him, thanks to his constant positive attitude. He's a great driver, but an even greater man».

Do you intend to extend the handbike project from the Paralympics to everyone, able-bodied and differently abled alike?
«It depends on what Alex wants to do, on how much time he has available, on how much time we can spare from the projects that are already in progress, on the results of our research into whether there is a viable market for it. We're keeping our options open».

Are racing cars still valid as a source of ideas for production car?
«It's not like a hundred years ago when motor racing represented the best way of proposing new solutions, however there are still certain areas where motorsports has an important role to play. I'm thinking, for example, about the spread of the aerodynamic culture, the widespread use of composite materials and energy recover technologies: tomorrow's cars will be more energy efficient thanks to use of lighter materials and improved aerodynamics».

2013 sees the 90th anniversary of the 24 Hours of Le Mans: would you like to race on the Sarthe circuit again?
«Our company isn't big enough to participate directly, and we lack the necessary skills. However, we have always been fortunate enough to collaborate, on specific areas of the cars, with various companies that do compete in the 24 Hours».

What do you think of systems, like DRS, that, while not exactly in the spirit of racing, increase the excitement on the track?
«The competitions have become so boring in recent years that I would welcome with open arms any initiative designed to promote overtaking, which is the essence of the competition».

Which driver from the past would you have liked to see in a Dallara?
«We've had so many great drivers that I couldn't ask for anything more».

One last semi-serious question: is there more chance of Dallara returning to F.1 or Parma winning the Scudetto?
«There's more chance of Parma winning the Scudetto».

Alessandro Santini

"YOU CANNOT PUT A PRICE ON THE PRIVILEGE OF WORKING WITH AND GETTING TO KNOW A REAL MAN LIKE HIM, IT'S INDESCRIBABLE. HE IS AN EXAMPLE AND A STIMULUS TO EVERYONE WHO HAS THE GOOD FORTUNE TO MEET HIM, THANKS TO HIS CONSTANT POSITIVE ATTITUDE. HE'S A GREAT DRIVER, BUT AN EVEN GREATER MAN"


GRANA PADANO
Barilla
Share Your Dream

Andrea Pontremoli

«PEOPLE ARE THE SOURCE OF INNOVATION»

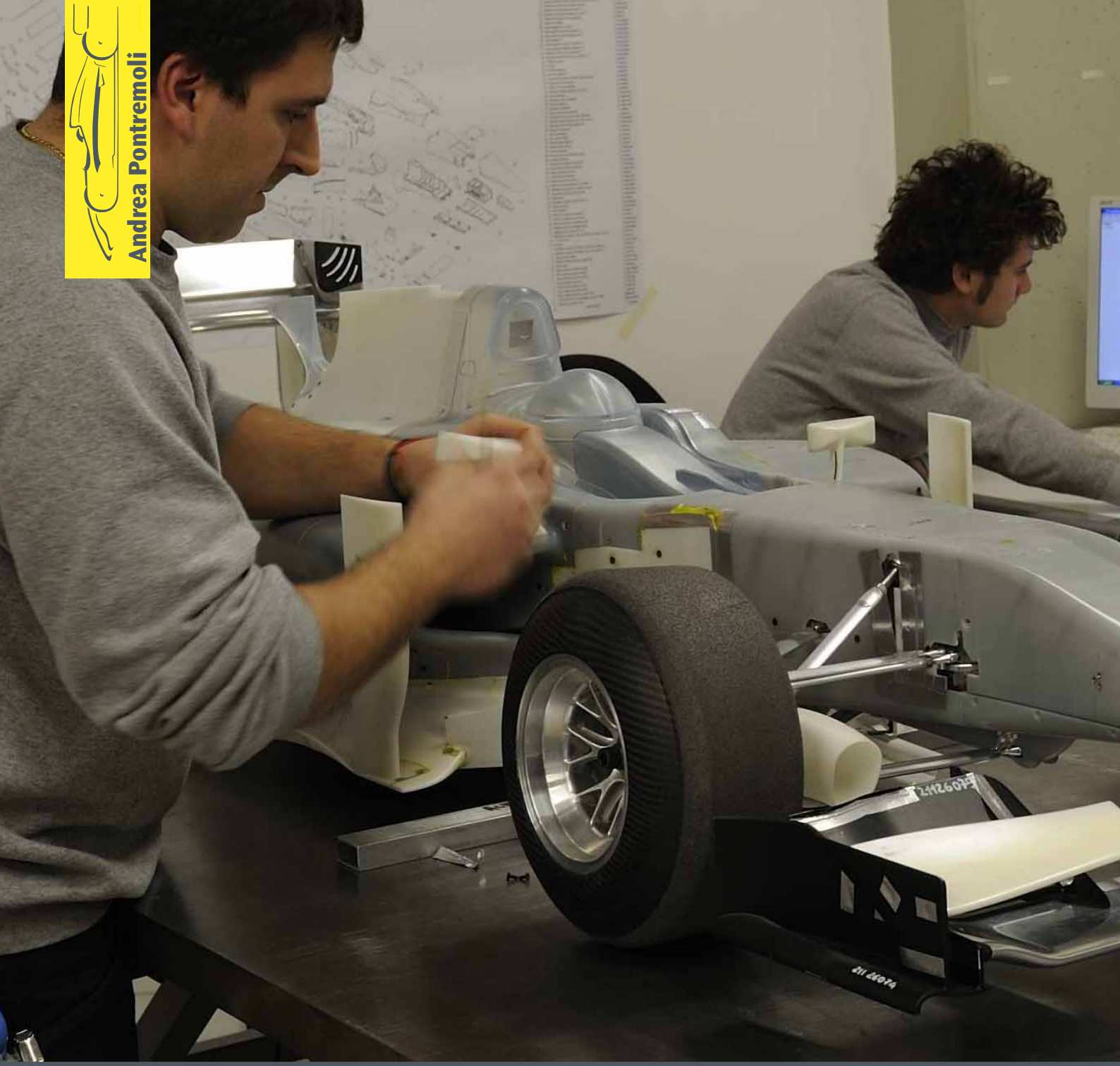
THE ITALIAN MOTORSPORTS INDUSTRY MAY HAVE A SIGNIFICANT ROLE TO PLAY IN THE ECONOMIC RECOVERY IN ITALY, PROVIDED IT IS PREPARED TO LOOK TO THE FUTURE, INVEST IN HUMAN AS WELL AS TECHNICAL CAPITAL AND INCREASE INTEGRATION BETWEEN THE EDUCATION SECTOR AND THE WORKPLACE, IN CONJUNCTION WITH OTHER LOCAL PLAYERS. ENGINEER PONTREMOLI, CEO OF DALLARA AUTOMOBILI, TELLS ABOUT THE NEXT CHALLENGES FACING THE COMPANY

Engineer Pontremoli, to what degree can the Italian motorsports industry make a contribution to the economic recovery in Italy?
«Its contribution depends on the extent to which it is regarded as an industry, taking example from Great Britain, where it is viewed as a niche industry using highly advanced technologies that have the potential to be implemented in other industrial sectors. In contrast to other sports, which concentrate exclusively on competition and entertainment, motorsports is heavily reliant on innovation and technology: two areas where Italy has always excelled on the world stage».

How has Dallara positioned itself as a business model for companies wishing to take up the challenge of expanding from a local base?
«As I always say, the most important thing to bear in mind is that company cannot expect to be competitive if it is not competitive in its own territory. In a global market, the competition is increasingly played out at a local level, rather than in terms of single companies.
With this in mind, we have been concentrating on establishing close working relationships with our neighbours, with companies located in the Emilia Romagna region, with our customers and suppliers, and local schools and educational establishments with the aim of getting back to the idea of learning a trade, of knowing how to do or make something. This is not valid only for Dallara and our local region, but for all those Italian companies that cannot count on the advantages of economies of scale or low labour costs, and are therefore obliged to rely on specialization and differentiation in order to compete on a global level».

What is the basis for a "people friendly" factory capable of competing at a global level in terms of excellence?
«It's born out of the concept that a company is not innovative because it has innovative technology, but because it has innovative personnel. It's important to make the distinction between innovation, which is a state of mind, and technology, which is the product of innovation. A company must build its future on the passion, motivation and innovation of the people who work for it».

How important is the integration between the world of education and the workplace? And how should it be managed?
«The distinction between education and the workplace is vanishing fast. Nowadays people will change jobs at least ten times during their working lives and it is vitally important that they continue to learn and never stop studying. It is important to introduce students to the working environment as early as possible, through visits and work experience schemes, so that they begin to form their ideas about the world of manufacturing and production while they are still at school. This relationship should then be allowed to develop over time, so that young people gradually spend more time at work, and less time at school, but without ever completely abandoning their studies. The other important concept is that the employment market is rapidly polarizing into two distinct categories: intellectual jobs and highly manual and skilled jobs that require workers to learn a trade. Both categories have the same prestige and it is essential to maintain one's studies in order to be up to the numerous challenges that they present. The remaining types of jobs - all those that involve carrying out relatively simple and repetitive activities - will sooner or later be performed exclusively by machines or robots».



Is there any place for phrases like "solidarity" and "the common good" in today's industrial world?
«Increasingly so, thanks primarily to the concept of inter-territorial competition that I mentioned earlier. Companies must go beyond the standard, and strive to achieve more than their industrial goals. Companies that think in these terms have an eye on the future, but those who do not will not be around much longer».

What opportunities can motorsports offer young people, engineers and specialized mechanics who are looking for work?
«The sector's position at the forefront of technology and innovation means that there are virtually no limits to the opportunities it is able to offer. Motorsports is first and foremost a results driven business, and this encourages youngsters to think in terms of merit rather than justifications. Young people have become too used to making excuses: "I couldn't come to school because….", "I couldn't do it because….". We have to re-establish a results-based culture».

Oxfordshire in England versus Motor Valley in Italy: competition or collaboration?
«These two areas, which represent the birth places of world motorsports, are in direct competition for the control of a global market. Oxfordshire was the first to visualize and develop motorsports as an industry. But we have inventiveness and a capacity to react on our side. The winner will be the one that manages to attract the emerging nations such as India, China and Brazil».

How important is Dallara's American experience in terms of growth?
«It's important because it enables us to draw on the American motorsports mentality, where entertainment is paramount, and the customers are those who pay for the tickets, in contrast to Europe, where everything revolves around the technology and the customer is the driver. Another important factor is what we

can learn from their practicality: "innovation that matters", concrete innovation that serves a purpose. Last, and not least, is that it gives you the chance to access an enormous market, if you've got what it takes».

What can motorsports draw from sectors such as aeronautics and aerospace, where Italy has always been a leading player in the past?

«A great deal. We have only recently started looking into these aspects and we have already discovered a number of areas in the fields of simulation, aerodynamics and composite materials – our three "core expertises" – that could give rise to important synergies and help in the development of our industry».

What advice would you give to Italy's next government on how best to manage the industrial and economic capital represented by the Italian motorsports sector?

«My first suggestion would be to decrease taxes on labour costs. Italy has a very powerful engine, but it needs a starter motor to get it moving again, giving an impulse to the firms and companies allow them to start taking on staff again, especially young people. If we can get that motor running then everything else will follow. We are currently in the doldrums; it's time to start releasing our energy, and motorsports teaches us how to release energy efficiently».

On a personal level, what is your next challenge as MD of Dallara

«My aim is to see the company continue to grow, not in size but in terms of skills in our three strategic areas (vehicle dynamics and simulation, composites and aerodynamics), as well as developing our interests in other business sectors and geographical areas. Another important objective is to develop the territory, starting from Motor Valley before expanding into Italy as a whole».

Alessandro Santini

LOOKING TO THE FUTURE

We conducted a long and interesting interview with Engineer Andrea Toso, in order to find out what we can expect from the prestigious American single-seater championship in 2013. Despite the impact of the economic crisis, intelligent cost containment policies mean that the teams will be able to devote all their energies to racing over the upcoming seasons, whilst also benefitting from new and innovative safety parameters, as specifically requested by the drivers themselves. The champion American driver Ryan Hunter-Reay was the star of an enjoyable and moving visit to Varano; Engineer Toso takes us behind the scenes...

Engineer Toso, what are the aims and expectations for the IZOD IndyCar 2013 season?

«The 2012 season was very hard on the teams: in the middle of a global economic and financial crisis the team owners were obliged to buy new cars, new engines, new equipment, whether they liked it or not; inevitably, drivers and engineers asked the owners to invest in time on the test track, in wind tunnels, simulators and in a range of laboratory tests in order to get to know the new product. In addition, the teams were forced to divest themselves of their existing cars, and all the associated spare parts, without any way of recouping their costs and, in a wider sense, to relinquish all their data, know-how and experience. The 2013 season is far more promising since there have been little or no modifications to the cars or the engines, with the exception of a series of requests on the part of the organizers and the teams in light of their experiences in 2012: this means that the teams will be able to revert to their normal management regimes, concentrating on costs, profits, and efficient organization of their personnel and activities for the next four seasons».

What are the new developments for the 2013 season?

«Every modification represents a cost, and someone, somewhere in the system will have to pay for it, with the exception of safety devices, where the cost of implementing is generally less than the potential cost of not implementing them; this is why safety measures can usually be introduced quickly and with little or no resistance. An example of a safety-related improvement concerns the risk that the drivers run of rolling their cars in the event of a lateral impact against the barriers at high speed on the oval tracks; this is exacerbated by the fact the bodywork on the new Dallara Indycar is actually wider than the tyres, so that it is the first part of the car to come into contact with the barriers in the event of a lateral impact. The risk of rolling was not particularly high during the preceding season, and no drivers were affected by it; however we became aware that there was still room for improvement in this area.

Thanks to a number of suggestions from the drivers, and in agreement with IZOD Indycar, after having already modified the structure of the bodywork during the season, at Dallara we have designed and built lateral structures that will be mounted in the cockpit at the same height as the driver's shoulders. These structures will be mounted internally so that they are not exposed to the external air flow; this solution enabled us to avoid altering the car's performance or its aerodynamic stability while improving the passive safety in the event of an accident. The growing popularity of street circuits, which enable city authorities (for example Baltimore and, in the near future, Providence) to boost the local economy by attracting a new class of tourist, prompted us to introduce further modifications. In response to the violent braking and low average speeds that typify these circuits, we have developed intakes that increase the quantity of cooling air that reaches the brakes: the team engineers can decide whether to favour lap performance by retaining the current, smaller intakes, or install the larger brake intakes in order to reduce the working temperature of the brake disks during the race and hence the costs associated with the wear and tear on the brakes over the entire season. Another example concerns new structures that are designed to reduce the risk of damaging the brakes during the frequent and frenetic pit-stops: in this case, the cost of the new components is significantly lower than the cost of damaging the brake disks, and both the organizers and the teams were happy to implement it».

From your point of a view as a constructor, what are your suggestions for the further development of the category over the next few years?

«Motorsports in the United States, and especially IZOD Indycar, is primarily a show business event, and this means that it is in direct competition with other sporting events such as baseball, football, basketball and hockey, all of which have vast numbers of fans, both on television and the Internet. It's easy to promise our sponsors increased audiences, improved television coverage and hence greater profits, but it is also important to bear in mind that the Motorsports market, and the sports entertainment market in general, is not infinite and that, in the final analysis, its earnings potential is limited by how much the fans who make up the sector are able to pay: increasing the value of IZOD Indycar implies detracting revenue from other motorsports categories, and from the rest of the entertainment sector, including cinema, video games, tourism etc. In order to achieve this we have to be able to modify the public's habits and interests, and the inclination to spend their money, and this will take time and the right people. In conclusion: in order to ensure that Indycar continues to develop over the next few years, the organizers, suppliers, teams and drivers must simply concentrate on doing their jobs and doing them well: the results will surely follow».

What feed-back have you had from the teams about the new car?

«After July 2010, when Dallara and IZOD Indycar signed the contract, two distinct points of view emerged among the fans, journalists, drivers, engineers and team owners. Some were unwilling to invest and felt that, given the difficult economic situation, it would be better not to change anything at all, whereas others were convinced that, after nine years with the

same car and the same engines, it was time for a radical departure, suggesting, for example, the Delta Wing. Both sides had valid arguments, but in the end they were able to achieve consensus and the Indycar community decided unanimously to introduce a new car, while stipulating that the contents be tailored to well-defined priorities, and at a greatly reduced purchase price: first of all, more advanced safety systems (rear wheel protection and wider bodywork to reduce the risk of contact between the wheels), which immediately attracted the attention of FIA; secondly, increased working life of components; thirdly, performance levels consistent with a spectacle that relies on frequent overtaking manoeuvres».

To what degree would you say that the teams have the desire to increase their influence within the IZOD IndyCar organization?

«To answer that question it is necessary to take into account the cultural differences between motor racing in the United States and the rest of the world, predominantly Europe. In Europe and the rest of the world, with the exception of the United States, FIA controls both the technical and the economic aspects of the sport, the main category is Formula 1, which represents the ultimate goal for drivers, technicians, constructors and sponsors alike. In contrast, the United States supports a number of top level motor racing championships, such as Nascar, Midgets, Dragster and Indycar; this means that, for many American racing fans, Indycar does not necessarily represent the pinnacle of the sport.
With this in mind, the people who are directly involved the IZOD Indycar Series constitute a tightly-knit community, similar to a travelling theatre company, and with a specific demographic of passionate fans. Therefore, it is entirely natural that each "actor" in this company occasionally feels the desire to play the leading role; but all the actors, from those who supply the tyres, electronics, engines or chassis, through the drivers and the engineers that use them, the team owners who decide when and what to buy, the sponsors who finance the teams and the race organizers, to the fans who pay for the whole show, are well aware that they all have their own equally important part to play, and that the success is always positive for theam all because it makes it possible to repeat the show and invest in new events the following year».

How has your relationship with the leadership of the category developed?

«Essentially the Indycar leadership hasn't really changed at all. The Indianapolis circuit and IZOD Indycar are controlled by the Hulman-Georges, a historic Indiana family, and a number of collaborators who have extensive experience in the sector. The most important change was the departure of the managing director, Randy Bernard, who dedicated a great deal of time energy to promoting the category and was responsible for bringing new sponsors on board and organizing events in new locations

L'ingegner Toso con Ryan Hunter Reay in visita alla Dallara

(Baltimore, Houston). However, after three years in such a highly demanding role, he felt that it would benefit both the organization and himself if he were to move on. In fact, there will be little or no change at Indycar, which is entirely in keeping with the traditional character of the Hulman-George family, who prefer to remain behind the scenes. The Hulman-Georges and Dallara have been working together for fifteen years and have built up an excellent relationship that goes well beyond the terms of the contract. A relationship like ours, built on mutual trust, is simply priceless».

Hunter-Reay visited the factory in Varano recently: tell us something about the man "from up close"?

«Ryan is a "man of value". He has dealt with family bereavement and competed for a number of years in Champ Car and Indycar with limited success before swallowing his pride and relaunching his career by dropping down to the minor championships: driving is his passion, but winning is not his obsession. Ryan is a serene person, fully aware of how quickly success can become "yesterday's news"; while still a boy at heart, the man in him is capable of recognizing beauty in life wherever it lies. A couple of annecdotes illustrate Ryan the man. After a session on our driving simulator in Italy, he grabbed a helmet and tracksuit, pulled on a non-descript raincoat and took the KTM X-Bow out onto the circuit in Varano despite the rain, despite the fact that there was no one there to watch him; after he'd finished, he dried the car off and then made his way to the workshop to thank all the mechanics and engineers: it was like a scene from the book "The Art of Racing in the Rain". I recall another episode from his stay in Italy. Ryan participated in a meeting with about a hundred students from local schools and Dallara's collaborators: he was charming, uncomplicated, polite, displayed genuine interest in anything that anyone had to say, and was more than happy to reply to in full to any questions, he even went off on his own to find a chair when it was time for an autograph session, and stayed on until the last guest had left, approachable and with a smile in his eyes and his heart».

Did Hunter-Reay express any requirements or requests on the part of the drivers?

«Ryan is an all-round professional, capable of racing at high speed on the track in Indianapolis or on the bends at Long Beach. Just like every intelligent driver who realises that motorsports are not video games played out by invincible heroes, but hard mental and physical work, whit respect for both his colleagues and for the potentially fatal risks involved, Ryan urged us never to let up in seeking to improve his safety and that of his fellow drivers in the event of an accident».

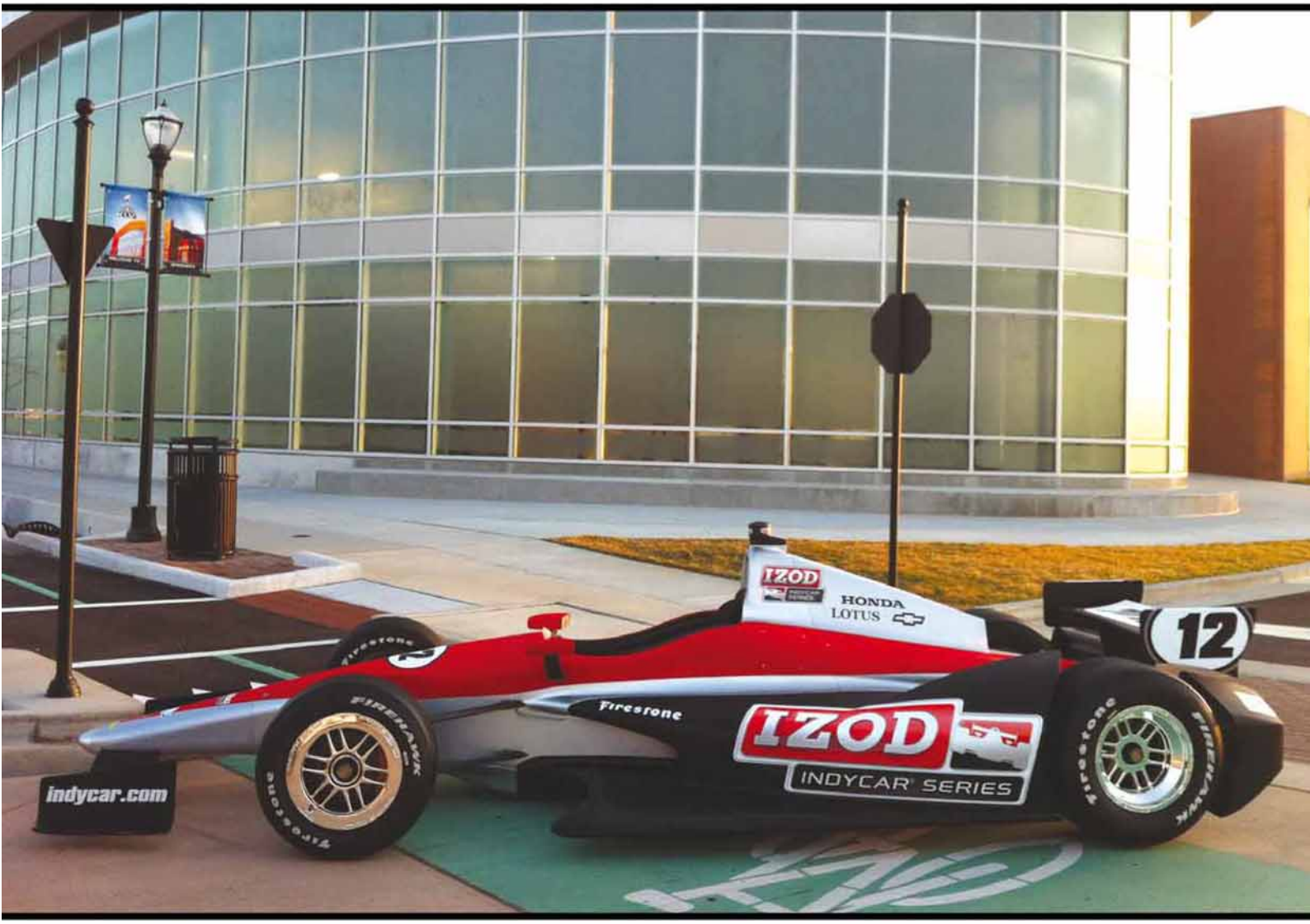
The green revolution is a recurrent theme in F.1: in your opinion could IZOD IndyCar also decide to increase the environmental compatibility of its product? We are not talking about the just engine but also materials, circuits and technological solutions in general.

«That's an interesting question and it deserves proper and adequate answer. The initial response is that the new Indycar has improved aerodynamic efficiency (less resistance for the same downforce), and that the capacity of the new engines has been reduced while still producing the same amount of power, and the total weight has been reduced. However, if we look beyond such considerations, which exploit the "green" concept to justify new activities and increased turnover, we are all too aware of how often technology tends to complicate products, making them seem almost alien to those that use them and those who are interested in them; by the same token, the principal reason for using exotic and expensive materials is frequently lost on the general public, and may not even be justified by the results achieved in terms of improved performance or reduced consumption. To be perfectly frank, I think it's rather difficult to establish any significant correlation between the "green" economy and motor racing competitions that rely so heavily on overtaking and braking manoeuvres, performed repeatedly on the track under highly risky conditions, and I'm tempted to recall William Faulkner's story "Pylon", which I discussed with Dan Wheldon a few days before he died. This is especially true in the case of Indycar and the other American motor racing championships, where the onus is on entertainment, at the expense of the technical aspect, with the exception of safety».

What do you think about Alex Zanardi's latest ambition to compete in the Indy 500?

«I'm hoping to speak to Alessandro over the next few weeks, to find out more about the motives that may or may not inspire him to take up this latest challenge. In any event, who am I to judge the achievements, dreams and motives of such a brave man as Alessandro Zanardi? All I can do is offer him my support when he makes his decision and the experience (and numerous mistakes) from my Indy 500 career, during which I competed in 16 races, winning twelve and losing four».

INDYCAR EXPERIENCE



The Dallara IndyCar Factory is located less than 1/3 of a mile from the istoric Indianapolis Motor Speedway. More than 22,500 square feet of interactive and hands-on exhibits centered around engineering and technology of the world's fastest sport! While you're here enjoiy Street-Legal IndyCar 2 Seater, Racing Simulators, Dallara factory tours, Green Screen Photo Op, and Gift Shop.

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«I'VE GOT A CRUSH ON... DALLARA!»

She didn't start racing until she was twenty, but it was like a bolt from the blue when the Italian driver encountered the single-seaters from Varano. After her experiences in the F.3 Open and the German championship her love for racing will be put to the test by the rigours of the continental championship

La Cerruti con la monoposto della F.3 Open

The FIA European F.3. season will feature a young lady from Italy. Her name is Michela Cerruti, she will be driving a Dallara 312 featuring a Mercedes engine, and will be the figurehead of a new team that has been created practically for her, with the involvement of Romeo Ferraris, the noted engine designer and Superstars series team owner. Unlike 99 per cent of drivers, Ms. Cerruti, didn't start racing until she was 20, and made her debut directly in covered wheel categories. She only moved into single-seaters towards the end of 2011 when she plucked up enough courage to take part in winter testing on the GP3. But from then on nothing has stood in the way of her rise through the ranks. In fact, she raced in the F.3 Open, before moving onto F.3 in Germany, and now she's ready to for the important and difficult challenge of the European championship.

You began your career in GT and Touring cars, so I don't suppose you knew much about Dallara did you?

«Not really, I only started to hear people talk about them when I began to get involved in motorsports. And I have to say that people only had good things to say about them. I began to find a lot more about them and their work in 2011, when working as a co-commentator for Sky on the IndyCar Races, where the cars are all produced by Dallara. It opened up an incredible new world for me and one day, out of curiosity, I went to visit their factory, which took my breath away. They were happy to show me around the whole premises, every aspect of their activities, and it was just incredible. Another time I went back to Dallara to try out their amazing simulator. I'd used quite a few different simulators in the past, when training for the Touring races, but theirs is truly unique, I think it must be the most complex machine →

Sopra, Michela con la GP3.
A sinistra, con la F.3 tedesca

"I competed in the F.3 Open, initially in the 308, but it was the 312 that I really sealed it for me! The car drives and handles even better than the previous model, and it was this, together with the experience in F.3 in Germany that convinced me to make the move to the European championship"

on the face of the earth! The driving sensation is impressively realistic, and so are the modifications to the set-up, the circuits, and the lap times. Once, when I was there, I met the Indycar driver Kanaan; he was trying something out for Indianapolis and it was an exceptional experience».

It was love at first sight for you with the single-seaters…
«The first time I tried a formula (the Dallara GP3 for the record), I understood right away why everyone always says that the sensation you get at the wheel of a single-seater is unique. I have to admit that, at time, I found it quite hard to get used to a type of car that I had never driven before; let's just say it was a learning curve».

Then you moved on from the Dallara GP3 to the Dallara F.3…
«And I fell in love with the category straight away. I competed in the F.3 Open, initially in the 308, but it was the 312 that I really sealed it for me! The car drives and handles even better than the previous model, and it was this, together with the experience in F.3 in Germany that convinced me to make the move to the European championship».

How difficult do you expect the European challenge is going to be for you?
«I like to think that I will be competing in a highly competitive championship, full of really fast drivers. There's nothing I like better than a challenge that seems impossible. My whole career so far has been a series of leaps in the dark, and every year has brought a new and more difficult challenge, and I fully expect this to be the most demanding».

Why did you decide to move to a new team, almost a "family concern" as it were?
«A series of coincidences, and some expectations that were not fulfilled during 2012, convinced me and my advisers to opt for this solution, not least because at least now we know exactly who we will be dealing with. Ferraris has always been supportive and it's definitely the wisest choice. It's going to be tough, and I'm going into it with very little experience, but that's the way I like it».

The European F.3 championship will mostly be held concurrently with DTM (German Touring Car Masters) events this year. Do you like the idea?
«It's always been my favourite category, I debated the idea last year with a group of directors from BMW who were following the races in Italy **(Editor's note: Michela has also competed in German GT cars)…**
However, I've noticed that there are almost no female drivers left in DTM these days, they tend to go for top quality, ex-F.1 drivers, so I think it will be very difficult for me to break into that world one day.

Massimo Costa

TOTAL DRIVING

A long "session" on the Dallara simulator with Engineer Moroni, who reveals its secrets and potential applications. A highly versatile tool that is perfect for testing cars, tracks, configurations.... and drivers with incredibly realistic results, and enables teams to save both time and money. Many of the world's top drivers have been impressed by their experience at Varano, but not all of them were able to get the better of Dallara's technicians....

Engineer Moroni, the Dallara simulator has achieved "cult" status among Italian teams and drivers. Would you mind summarizing the type of technology it's based on for us?

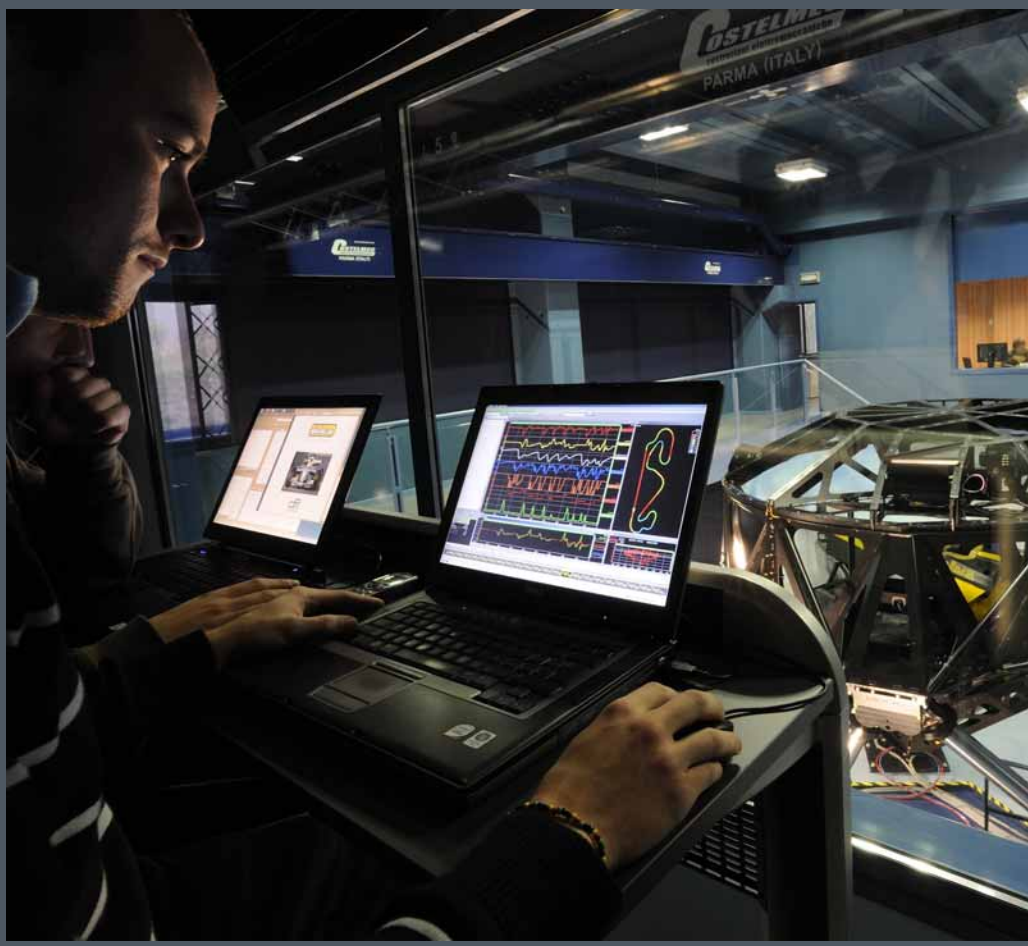
«The basic idea was to create a test bench capable of reproducing the car's performance, or rather its effect on the driver. A realistic test bench that would make the drivers feel as though they were actually driving the car. The key is to make the drivers feel that they have to drive as if it were a real car. In other words: in the event of a skid, they must react as if they were on the track, and the mathematical model of the car will respond as the real car would on the under real conditions. If the system does not fulfil this aim, drivers will react as if they were playing a simple videogame, and the chances are that the input they provide the model with would not correspond to reality. And that, in a nutshell, is the engineering value of a simulator".

A kind of reality-effect obtained by using mathematical models?

«It's obtained by combining two elements: Highly detailed mathematical models that provide a realistic representation of the car, the road, and the tyres, together with dynamic stresses that ensure that the driver in the simulator perceives these details: if the car is over-steering, if the road surface is smooth, if the aerodynamics that you have modelled for two different wing configurations actually makes any difference. In the absence of either of these components the simulator may still be used for other purposes - for example, for learning the track layout, the order of the bends and curves, what gear to use - but it cannot provide drivers with complete training».

What types of tests can be carried out on the simulator?

«It allows drivers to prepare for the conditions they will experience when they are on the track, and this is extremely useful in the case of championships that provide very limited opportunities for free practising. They can experience a whole range of in-race situations such as the start, wet road surfaces, various wind conditions, and driving the car when it is affected by wear and tear. It also provides technicians with useful information about the car's behaviour. In other words, it's like having an infinite telemetry that describes the behaviour of the car. Provided that they include an adequate range of tests, carrying out couple of trials on the simulator enables the teams to complete 80% of the work before they even reach the track».



Is it also possible to analyze a driver's racing style using this system?
"Certainly. It's never possible to make an exact comparison between two drivers on the track because the cars may be different and track conditions may vary from moment to moment: on the simulator it is possible to isolate all the variables, modifying one parameter at a time. This means that you can be sure that the car and the track are always the same. It's the perfect tool for comparing two different drivers».

Are there any objective studies that demonstrate how faithfully the simulator reproduces the experience on the track?
«Numbers only tell a part of the story; to get a better idea of how accurate the simulator is, it is worth considering the types of tests that the technicians here at Dallara and the engineers that accompany the drivers carry out during a session. It is possible to carry out tests where the angle of a wheel is modified by one tenth of a degree, or some other configuration parameter is varied by a single millimetre: this gives an idea of just how accurate the simulation is. It certainly wouldn't be possible to alter a wheel alignment in a video game and then observe the effect on the action».

Will the simulator ever replace track testing completely?
«No, a 100% substitution will never be possible. There is no limit to the tests that can be carried out using the simulator, but it can never reproduce the specific weather conditions on a given day of the year, or a particular track condition. The simulator permits us to evaluate a series of combinations and define about 80-85% of the set-up for a car/driver pairing. And the advantage of a simulator like the one at Dallara is that, rather relying simply on calculations, it uses calculations that are evaluated in real time together with the driver. However, it will never be possible to replace the uncertainty factor introduced by specific conditions on a specific day».

Computer, wind tunnel, simulator: how do these three elements fit together?
«In a company like Dallara, the simulator is effectively used to collect information from all the other departments. It imposes and promotes interaction between different departments. Since it is necessary to create a model that represents the entire vehicle, each sector responsible for providing a certain feature of the car - designing the suspension, calculating the aerodynamic performance on the computer, performing measurements in the wind tunnel, etc. – is obliged to work towards completing the model that will be used on the simulator. The simulator is like a mirror image of the real car: the various sectors work for the simulator, in the same way as they would on the finished car, while the simulator also works for the different departments by evaluating the effectiveness of an aerodynamic solution or a suspension system designed in a certain way, together with the driver».

How many hours is it in use every month? How many people are required to operate it?
«Part of the time the simulator is used internally by Dallara to improve our current and future projects, while the rest of the time it is allocated to external customers. For example, we are currently using it to develop the Super Formula for the 2014 season, before we build the actual prototype. Our own test drivers use it around 50% of the time, while the rest of the time it is available

to individual drivers, teams with more than one driver, or companies involved in designing racing and production cars. The simulator is used for these two purposes to varying degrees every week. Naturally, during the racing season, we leave more time for those who want to prepare for a race».

How many circuits and types of car is it possible to test on the simulator in Varano?
«It can be configured with all our cars: Gp2, Gp3, Formula 3, World Series, IndyCar, Grand Am, and an ever increasing variety of tracks. We currently feature all the circuits used for the Gp2 and Gp3 championships, a large number of European circuits and about half the American circuits; and we intend to keep expanding».

Do you expect to add any new circuits in 2013?
«We are increasing the number of Italian and European Formula 3 and World Series circuits, and adding extra Formula 1 circuits».

Could you give us a brief summary of a typical session on the simulator?
«In the case of Gp2 or World Series, we play host to the entire team, including the data acquisition technicians and the drivers. While a typical working day is very similar to a working day on the track, a single session on the simulator is equivalent to 3-4 days of track time. If you consider that it is possible to change the configuration in the same time that it takes to change a spring, or that you can replace an entire suspension or a gearbox in a few seconds, it gives you an idea of how much work the teams can get through in a day on the simulator. The best way to think of it is in terms of an extensive, open test carried out by a team on the track over a period of a few days. In such cases, we provide the teams with all the tools they need to manage the machine configuration, and the data that they produce, autonomously and safely. Everything ends up on their computers. Our role is limited to providing assistance in operating the test bench".

How many people are required to operate the simulator?
«In situations like the one described above, no more than one or two operators are necessary. However, sometimes we receive requests from drivers who want to compare two different cars, for example drivers who are thinking about stepping up from Formula 3 to a higher category. In this case, the driver will not be accompanied by a team and will not have a pre-established test program. And that's where we step in: the vast majority of our personnel have experience of working trackside and this means that we can help our customers to prepare a tailor-made test program. If a driver wants to experience specific racing conditions, practise starts, experiment with tyre heating, work on exploiting the half hour qualifying period, short or long runs, we can help to implement a test plan that is designed to meet his or her specific requirements. It only takes a few minutes to carry out the transition from one car to another. The simulator features a vast range of tests».

How long does a typical day last?
"The day is divided into two four hour sessions. It's possible to get an enormous amount of work done in a single session, in fact a team can complete as many as 100/150 laps of a medium length circuit in just four hours. Testing may range from a single four hour session to several days, during which a team may allow various different drivers to have time on the simulator».

Who are the most famous drivers to have used the simulator?
«We've had the majority of drivers from GP2 and World Series, and this includes some that have already moved on to Formula 1, or who are about to. We have also hosted drivers such as Gianmaria Bruni, who helped us to set the system up. One of our most satisfied customers is Jean Alesi, who came to us to prepare for the Indianapolis 500. We have recently been expanding in the American market so we have also had visits from Ryan Briscoe, Tony Kanaan, Ryan Hunter-Reay, Marco Andretti, Scott Dixon, to name but a few».

Any amusing stories to tell?
«One of the must entertaining sessions was with Kanaan, in the autumn of 2011. He came to try out the Indycar for the following season together with his technicians; the car was already in production and there were only three months to go before the teams started taking delivery. Tony is a very friendly person, as well as being a model professional, and he hit it off immediately with the Dallara personnel who were present during the tests. In fact, they got on so well that, once the session was over, he asked which of our technicians was the best driver and challenged him to a race on the simulator. Unfortunately for him, what he didn't know was that our man had recently carried out hundreds of hours of tests, setting up the model, the tyres, and the track, so he was more than ready for him! Tony accepted his narrow defeat with a smile, and even presented his rival with the gloves that he used the last time he raced in the Indianapolis 500 as a prize! A true great».

Have you ever tried the Dallara simulator out yourself?
«Yes; I'm part of the model-vehicle development group, and we are personally responsible for making sure that everything functions as it should. Some of the other lads at Dallara are much better than me, but I have to admit that testing the GP2, taking into account the type of car that it is, and driving the IndyCar round the oval at Indianapolis are very special experiences».

Admit it: have you ever had a "virtual" crash?
«You know how it is: a non-professional driver finds his limit by turning back after realising that he has just exceeded it…».

Stefano Semeraro

dallara

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