

THE NEW DALLARA IS A MARRIAGE OF REVOLUTION AND EVOLUTION: THE UPGRADED ENGINE, A MORE EXCITING LOOK AND A DEVELOPMENT KIT THAT HELPS TO KEEP COSTS UNDER CONTROL HAVE ALL COMBINED TO REKINDLE INTEREST IN THE CATEGORY. ENGINEER PIGNACCA, THE PROJECT MANAGER, PROVIDES THE DETAILS

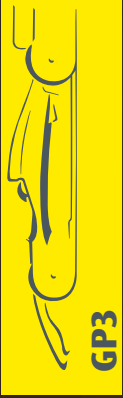
GP3

FORMULA SAE

THE EIGHTH EDITION OF THE EVENT DEDICATED TO ENGINEERING STUDENTS, WHICH TOOK PLACE IN SEPTEMBER, WAS A GREAT SUCCESS. TWO THOUSAND YOUNG PEOPLE FROM 13 DIFFERENT COUNTRIES TOOK UP THE CHALLENGE UNDER THE WATCHFUL GAZE OF ENGINEER DALLARA: AN EXPERIENCE THAT THE MOTORSPORTS "WIZARDS" OF TOMORROW WILL NEVER FORGET

ZANARDI

THE INSPIRATIONAL ALEX ZANARDI PLAYED A STARRING ROLE AT THE PARALYMPICS IN LONDON WHERE HE WON TWO GOLD MEDALS IN THE HAND-BIKE EVENT, AND AGAIN SHOWED THE WORLD WHAT A TALENTED AND ENTERTAINING PERSONALITY HE IS. HOWEVER, MOST PEOPLE PROBABLY DON'T KNOW ABOUT THE SPECIAL "VEHICLE" THAT WAS DESIGNED FOR HIM IN COLLABORATION WITH DALLARA



THE NEW DALLARA GP3 NOW FEATURES A TRUE RACING ENGINE AND FORMS AN INTEGRAL PART OF A FAMILY THAT INCLUDES GP2 AND F.1, THANKS IN NO SMALL PART TO ITS EXCITING NEW LOOK. AT THE SAME TIME, THE CAREFUL DESIGN ALLOWS TEAMS TO KEEP COSTS TO A MINIMUM. TOGETHER WITH THE PROJECT MANAGER, ENGINEER LUCA PIGNACCA, WE TAKE AN IN-DEPTH LOOK AT THE CAR THAT HAS ALREADY RECEIVED WIDESPREAD APPROVAL FROM THE TEAMS. WE ALSO TAKE A LOOK AT THE CURRENT AND FUTURE PROSPECTS FOR SINGLE-SEATER RACING

REVOLUTION AND EVOLUTION

What is the underlying concept behind the new GP3? The stress seems to be on evolution rather than revolution.

«Both, in reality. There has been a significant revolution in terms of its placement in the context of the single-seater scene, between F.3, Renault World Series and GP2. Performance has been increased significantly: the old GP3 was slightly faster than the F.3, whereas the new model is closer to the GP2. There is still an appreciable gap, which is deliberate, but there is now a net distinction between GP3 and F.3. This revolution is mainly due to the new engine. We have replaced the old engine, which was derived from a production 4 cylinder in-line turbo unit, with a true, V6 racing engine (although this was also, originally, derived from a production model. However, our aim was to satisfy a requirement of the teams who, just like everyone else, are feeling the effects of the financial crisis and were unable to afford a brand new car. In order to keep costs to a minimum, they asked us to create a kit, and from this point of view we are certainly dealing with a kind of evolution».

The bodywork is very similar to its big sister, the GP2. What other modifications have you made?

«We have made a number of modifications. For example, neither the drivers nor the sponsors liked the noise that the old GP3 made, they thought it seemed inadequate and that it wasn't exciting enough. In other words, it had a detrimental effect

on the category's image in the eyes of the public and those who work in the sector. The new engine will make everyone happy, in fact we believe the new engine sounds very similar to the GP2.

Another problem was that the car was very difficult to drive: when you look at the starting grids from last year's GP3 championship, there was just one second between 20 cars. This made it difficult for the talented drivers to emerge. To remedy this we have increased the power from 270 to 400 horsepower, while maintaining everything else more or less the same. For example, the tyres are the still the same. You mentioned the look, and we also received a very specific request regarding this aspect: we were asked to increase the "family feeling" with respect to the "big sister", in order to stress the idea of communality between GP3, GP2 and F1. I think we have succeeded in our objectives: the fairing is similar to the GP2, as is the nose, and the car is now 100 millimetres longer because we have moved the oil tank from its old lateral position, where it was more exposed in the event of an accident, to its new position under the hood between the engine and the gearbox».

Aerodynamics is a fundamental element in the design process: what's changed?

«With the exception of the chassis, the bodywork is completely new. The wings have not been changed, which saves the teams from buying new ones – this "Carry over", as it's known in the jargon, all helps towards keeping costs down».





Did the new AER 400 hp V6 engine make it necessary to modify the braking system too?

«We still use Brembo brakes with steel disks, but we had to install bigger calipers, disks and shoes because the old ones wouldn't have been up to the job».

So, is the new car easy to "set-up" or is it more challenging from this point of view too?

«It will be fairly easy to set-up, just like the old model, if a little more "nervous" due to the new engine. All things considered, there is less torque than the previous turbo version. In a nutshell: the trackside engineers will find it easier to set-up, but the drivers will find it more challenging».

Which aspect of the design was most satisfying for you?

«Without a doubt, installing a completely different engine without obliging the teams to change the chassis, and avoiding the necessity of modifying numerous components, such as the radiator. We were also particularly pleased with the way we managed to change the appearance of the car so radically by modifying the bodywork».

How did testing go, and what were the results?

«It went very smoothly, and the results were positive. The tests were largely aimed at the newly installed engine, and we didn't

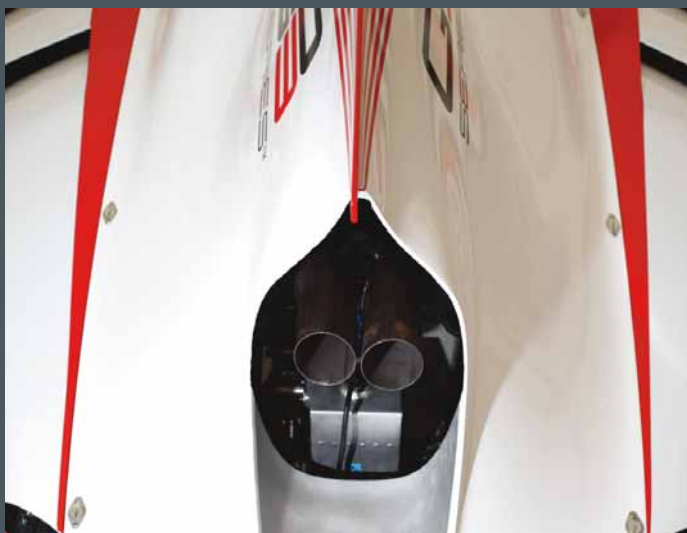
experience any problems».

What has the initial feedback from teams and drivers been like?

«Very positive. The GP3 was in a critical situation. A lot of teams were contemplating a move to another championship. When it was announced that the new car would be more powerful, it reawakened a lot of interest, and as soon as they saw the car, many teams changed their ideas. The reception has been very good».

What can we expect from Pirelli for the new tyres 2013: will we see accelerated degrading like in F.1?

«I don't know yet. The old tyres were indestructible, there was practically no degrading during the race. GP2 has requested tyres that are similar to those used in F.1, in order to avoid situations where the positions tend to stabilise towards the end of the race, thus killing off any excitement. GP2 is more similar to IndyCar: excitement is more important than pure technique. Therefore, the ideal situation is that, towards the end of the race, the cars become more difficult to handle, which tends to favour the drivers that have taken better care of their tyres. This is open to discussion, but as a solution it certainly helps to prepare drivers for F.1. I wouldn't expect to see any radical changes from Pirelli in GP3, although they have just completed a series of tests with us





with an eye on next year. In effect, a more powerful car might well cause the same sized tyres to wear out more quickly, but we have not yet reached the effective limit of the GP3 tyres so we don't know to what extent, if any, they will degrade».

What is the expected working life of this car?
«Three years, as usual».

In future, will we see a decrease in the number of single-seater categories, as Gerhard Berger suggests, or do you think it is in the interests of the teams and drivers to ensure that the various championships continue to survive?

«It's difficult to say. Everyone has been saying that there are too many single-seater categories

for seven or eight years now. In reality, only the SuperLeague and A1 GP have disappeared, and even that was replaced by Auto GP. I think that the advent of GP3 caused the decline of Euroseries Formula 3, but was also responsible for the development of a number national championships. The number of places in GP3 is limited, the budget is quite large, therefore it was only natural – unfortunately – that Euroseries would become less important, while the German, British, Spanish and, hopefully, Italian F.3 competitions became more important, even though, at the present, the latter championship is not in the best of health. There's no denying that the crisis has affected everyone. In the future I would expect the FR 2.0 , F.3, GP3, World Series and GP2 categories - and naturally Indycar in America

– to do well. To be honest, I don't know how the rest survive, since they have to face the same difficulties as the categories I just mentioned, but without the benefits of a large organisation to support them. I think that it's important to maintain some degree of variety, although a little pruning may be necessary. Ideally, everyone should ask themselves how they can reduce costs. At Dallara we are always being asked to keep costs to a minimum, and we do whatever we can. If everyone were to follow this lead it would not be a bad thing, despite the inherently high costs involved in this sport, and the increasing difficulty of finding drivers at the right budget. To summarise: discover good drivers, the true talents, on the right budget».

Stefano Semeraro



A FORMULA FOR SUCCESS

VARANO DE' MELEGARI AGAIN PLAYED HOST TO FORMULA SAE ITALY AND FORMULA ELECTRIC ITALY, WHICH WAS ATTENDED BY ENGINEERING STUDENTS FROM 13 DIFFERENT COUNTRIES, RANGING FROM GERMANY TO ITALY, THE USA TO INDIA. MORE THAN TWO THOUSAND STUDENTS TOOK PART IN THE EVENT, WHICH WAS HAD DALLARA AUTOMOBILI AS ITS MAIN SPONSOR, AND THREE OF THEM WERE AWARDED A HIGHLY SOUGHT-AFTER PRIZE: A TEST DRIVE IN THE SUPER-TECHNOLOGICAL DALLARA SIMULATOR





Two thousand students from thirteen different countries, four days of racing, challenges, and hard-fought competition, but also fun, sharing and sportsmanship. Four days to remember, and an experience that will prove invaluable in the future for anyone in a position of responsibility in the engineering field, and in particular in the motorsports sector. The eighth edition of Formula SAE Italy and Formula Electric Italy, which was held at Varano de' Melegari again this year, was a success, featuring record numbers and results that underlined the importance of the event promoted by the Associazione Tecnica dell'Automobile, with the active support of Dallara in the person of Engineer Gian Paolo. The competition is open, but not limited, to undergraduate and recently graduated engineering students from all over the world, who are required to design, build, promote and race prototype cars that represent their first real challenge from both a technical and a managerial point of view. The competition was first held in the USA twenty years ago, between students from Austin and Arlington universities in Texas, and has now become a worldwide event. The event in Varano was divided into two categories, 1C, for vehicles with combustion engines, and 1E, for electric powered vehicles. The 1C category went to the Rennteam from the University of Stuttgart, with the runners-up spot going to Cat-Racing from the University of Coburg and third place to the Aristotle Racing Team from the homonymous University in Salonika in Greece: demonstrating that, even in times of economic crisis, there is no limit to the preparation and creativity of European students.

Germany also prevailed in the 1E category, where the WHZ Racing Team from the University of Zwickau finished ahead of the Darmstadt Racing Team, but there was also an Italian presence, thanks to the Turin Polytechnic Racing Team, who took third place. The team from Piedmont, racing with the "diabolical" number 666, gave a very good account of themselves both during the Static Events (design, cost analysis and vehicle presentation categories) and the Dynamic Events (where the teams compete against each other in various track trials). In fact, the Racing Team came first in the 1E category Presentation Event, completing an Italian double thanks to the winning performance of the team from the University of Rome La Sapienza in the 1C category, while finishing third in the 1E category Design and Cost Events. The latter event in the 1C category was won by another Italian team, from the University of Calabria. The team from Turin Polytechnic also did well in the Dynamic Events, winning the Autocross trial, and finishing third in Acceleration. The SAE cup for the best team in the dynamic events was presented the director of Formula SAE Italy Paolo Coeli, but there was a host of other acknowledgements on offer for the future "wizards" of world motorsports. Among the trophies presented by Dallara, perhaps the most keenly contested was the one awarded to the fastest drivers in the Autocross trial: the incredible chance to take part in a test drive session on the world famous Dallara Simulator, which is used by the top drivers from a wide range of championships. The following students were granted the opportunity to sample this fantastic experience: Norman Jersch, of the Hawks Racing Team from the





UAS University of Hamburg, Michael Sommer of Joannaeum Racing from the UAS of Graz, in Austria, and Gabriele Vacchina, member of the Turin Polytechnic Racing Team.

«The Italian teams were much more competitive during the excellent eighth edition of Formula SAE – stresses Roberta Reggiani, Project Manager of the ATA – and this is demonstrated by the results obtained by Turin Polytechnic, and the Universities of Calabria and Roma La Sapienza. After eight years we are achieving very encouraging results, and this has certainly been our most successful edition. The Universities are offering increasing numbers of young people the chance to develop, and the results are there for all to see. Nowadays, all universities have their own Formula SAE team, which means that undergraduates and new graduates have the chance to create their first project before they leave university, and this is our aim».

This result is the fruit of a unique cocktail of passion, creative commitment, design principles and the sporting spirit that Dallara, the event's main sponsor, brings to the event. «A special thank you – continues Roberta Reggiani – goes to Engineer Dallara, who has always supported the event in person, involving everyone at his company, but also to Engineer Pontremoli, Engineer Toso and all the volunteers – judges and technical inspectors – who helped us with the various trials, and without whom none of this would have been possible ». And so to next year, and the next edition of SAE Italy and its "stars" who, as Gian Paolo Dallara would say «are always the youngsters!»

Stefano Semeraro



ALEX'S DREAM

ALEX ZANARDI'S ACHIEVEMENT OF WINNING TWO GOLD MEDALS AT THE LONDON PARALYMPICS WAS ALSO THE RESULT OF THE WORK OF DALLARA'S AERODYNAMICS TECHNICIANS

"I will not live in fear of falling or catching fire. I choose to inhabit my days, to allow my living to open me, to make me less afraid, more accessible, to loosen my heart until it becomes a wing, a torch, a promise": these words by the poet Dawna Markova seem to have been written specifically for a great athlete and a great man like Alessandro Zanardi, capable picking himself up again after his terrible accident in 2001 and coming back stronger than ever, making what for other people might seem extraordinary appear perfectly normal.

At Brands Hatch, a circuit where he had already raced at the beginning of his career in Formula 3000, Alex won a Paralympic gold medal in the time trial; this was followed by another gold in the H4 individual 64 km road race, and a silver medal in the mixed relay.

These results were achieved using a very special hand bike, which was developed principally at Dallara by professionals and old friends that he has known since he began racing in Formula 3 in 1988, in a Dallara.







It all started almost by chance, the result of a visit, and a coffee. Engineer Dialma Zinelli, who is in charge of aerodynamics at Dallara, and the hand bike project, explains:

"Last autumn, Alex came to see us, together with the ex-driver and team owner Chip Ganassi, and he mentioned his intention of participating in the Paralympics for the first time. It was at this point that we had an idea: why don't you come back with your bike a let us see if we can improve it? No sooner said than done: in December Alex came back, together with his bike and Vittorio Podestà (7 time Italian hand bike champion) and that was when the collaboration began".

What were the first steps?

"We started off by looking at simple modifications designed to improve the performance; then I thought to myself: why don't we try a little numerical aerodynamics? So we digitalised Zanardi and his bike, starting from a cloud of irregular points, until we had created a coherent surface that could be codified using the CFD software".

The results?

"Excellent. Using the CFD we were able to identify the areas for improvement and, after a series of tests, the bike began to assume a form that was noticeably different to the original model, in fact, at a certain point it became apparent both to us and to Alex that the best option would be to redesign the frame from zero".

Just like a racing car?

"Exactly. We used the same phases and methods, in accordance with a set of technical regulations that established the dimensional and functional limits that should be adopted to a system with the mechanical parts exposed. After a significant amount of work with the CFD, we moved on to the FEM (Finite Element Methods) structural analysis stage, before starting laboratory testing. At the same time, we built a mannequin in order to evaluate the riding position, after which we designed and built the first prototype, which was ready in July".

How did it go?

"Alex immediately noticed the difference in terms of rigidity, riding accuracy, and smoothness with respect to his old bike. In order to decrease the weight, we built a second prototype that we delivered on the 1st August, and which became the bike that he used in London".

What was the most difficult part of the process?

"It was defining the correct riding position, with the correct height and a comfortable shell, in the short time we had at our disposal, in order to enable Alex to transfer the maximum amount of power during each stroke. Our job was made much easier by Alex, whose driver's sensitivity enabled him to give us precise feedback about each modification".

And how was the experience for you?

"Fantastic, emotionally intense, above all thanks to Alex who is disarmingly uncomplicated and approachable: whenever he came to the factory he would always find the time to say hello to everyone, and the people at Dallara responded to that: the team was very highly motivated".

An anecdote or two?

"Roberto Ciura, who supervised the assembly stage, was in charge of Zanardi's car when he was competing in F3: destiny I suppose. Alex would joke: I break my toys, and Roby fixes them for me".

The result of this challenging job was a unique prototype made to measure for Alex, almost like Cinderella's slipper; however, both Dallara and Alex felt that, in the future, it might be possible to use the same design principles to create a version suitable for anyone, including able-bodied people, who might be interested in taking up a new and exciting open-air activity. In fact, Engineer Dialma Zinelli volunteered to act as the "guinea pig" for a hypothetical prototype.

Engineer **Andrea Pontremoli**, the MD of Dallara, had this to say about the collaboration: *"Alex managed to get the whole company involved in his dream, and we are all so proud of the success achieved by this truly exceptional man. It also helped to promote the image of Italy as a country where things work".* Engineer **Gian Paolo Dallara** concurred: *"A unique person, who enriches everyone who is fortunate enough to meet him".*

Following his achievements, **Zanardi** had a heartfelt message for the team at Dallara: *"You can only show people your appreciation if you believe they deserve it; however, when you also have the friendship of people like Engineer Dallara, Engineer Pontremoli and so many other people who work at Varano, you feel almost*

obliged to do something really special together with them.

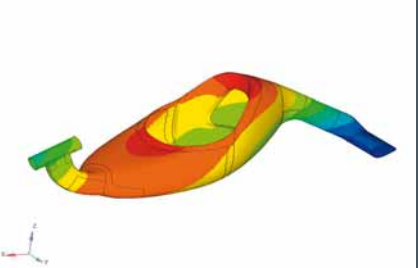
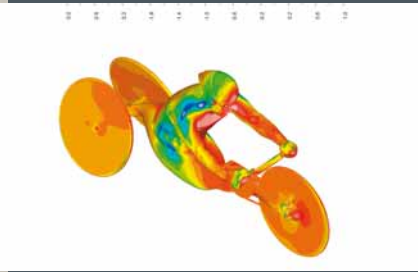
When I was a "youngster" I drove a Dallara in a Formula 3 Championship, where the only way you could expect to be competitive was in a single-seater designed and built in Varano; it was almost like driving in a single-brand category.

I had to invent this new, exciting sporting adventure so that my Friends could experience, alongside me, the emotions that only the most demanding of competitions can offer, and so that, when it was all over, I could say with a sense of pride that every single one of them had contributed to my little achievement.

Dialma, Francesco, Giacomo, Andrea, not to forget Roberto, Carlo, Nicola, Fabrizio, Leonardo as well as everyone else who helped to design, or "tighten the nuts" on this fantastic vehicle: they were all there with me during the races at Brands Hatch and they all merit a share in one of the greatest joys of my sporting career.

At the risk of sounding sentimental, and until we all have time to raise a glass together (which will be refilled more than once!) my dear friends, I thank you!"





A truly inspiring story which serves to remind us of the importance of seriousness, professionalism, technique and innovation, but above all that the greatest limit to what a person can achieve does not lie in their muscles, but in their head and their heart. People like Alex Zanardi help us to rediscover the art of living with a smile on our faces and remind us to challenge ourselves continuously, even in the face of indifference, discouragement and the laziness of others.

Alessandro Santini





EXPO TARO-CENO TOGETHER AGAINST THE CRISIS



Paolo Rossi
in the
KTM X-Bow



In times of crisis, there are regions, businessmen and institutions that unite their forces in order to strengthen relationships, create synergies and show the market that they are even stronger than before.

This is the spirit behind the Expo Taro Ceno, which took place on 25 and 26 August in Compiano, a charming village in the Province of Parma, with a fairytale castle that dominates one of two river valleys: the Val Taro. The other valley, the Val Ceno also takes its name from the river that runs through it, and together they give their names to the Expo.

In times of war the medieval corporations would take refuge in the castle in order to protect the local skills and crafts.

In the same way today, in the face of an economic-financial storm, businessmen and craftsmen retired to this medieval stronghold in Compiano to pool their resources, demonstrate their products but above all to highlight an increasingly rare quality that forms a fundamental part of Italian culture: that “know-how” which comes from manual and material skills, and from a knowledge rooted in the desire to keep improving the products and services they provide, thanks to a spirit of perseverance and tenacity.

The Expo was organised by the “Andrea Borri Foundation”, “Compiano Art and History” association, and the “Valceno Study Centre” in collaboration with the “Agostino Casaroli Study Centre”, with the support of the local, provincial and regional authorities, and was attended by a wide variety of companies and craftsmen, covering such areas as forestry resource management to skilled woodworking (doors and windows, furniture, chairs), from

sandstone (processing and geological formation) to the green-fingered (plants and flowers, landscape gardening), from high-tech to gastronomy, from tourism (farm holidays, bed & breakfast) to metal (from pre-history to modern art).

Over fifty companies and craftsmen participated at Compiano, including Dallara, who were present in the high-tech area: carpenters, stonemasons, builders, greengrocers, artists, cutlers, lute makers, agricultural producers, companies with expertise in coating, coal and mechanical processes etc.

During two days of round table discussions, important contributions and presentations by the presidents of various associations (Small Traders Confederation, Parma Chamber of Commerce) and university professors, there was also time to present the “Compiano Sport” award to the member of the 1982 Italian World Cup winning team, Paolo Rossi, who was attracted to Dallara’s stand and insisted on having his photograph taken in the KTM X-Bow designed in Varano.

The closing debate was chaired by the President of the Val Ceno Study Centre and M.D. of Dallara, Andrea Pontremoli, who summed up the event as follows: “The main purpose of the initiative was to get to know each other better. Only by reaching a collective understanding of our region will we be able to develop a common dream; despite sleeping in different beds. In an increasingly globalised market, companies will only be able to compete if the region where they are situated is competitive too”.

Together with the director of the Val Ceno Study Centre, Engineer Potremoli also

organised a survey of all the exhibitors, from which it emerged that all the participants at the Expo had certain characteristics in common: a passion for their work, the desire to make or produce something unique, and a strong sense of local identity, which generates feelings of pride and loyalty in their collaborators.

The problems that emerged were: excessive bureaucracy, lack of support from the authorities and associations, a credit market that favours tangibles over ideas and initiatives, and a failure to promote the local region sufficiently.

The event concluded with a series of proposals. In response to the need for more high level training in the high-tech sector, a training centre is to be set-up at the confluence of the two valleys, in Fornovo Taro.

It was suggested that the agricultural sector would benefit from improved co-ordination regarding the different types of products produced in the area, while moves towards the centralisation of resources, such as a call centre and/or website, could benefit both transport and promotional services. The discussion also stressed the fundamental importance of a marketing strategy designed to bring the unique qualities of the local area to the attention of the world.

An event designed to draw attention to the mountain community, to widen the scope for development in the two valleys, to create a “doc” mark that is not limited to a specific product, to create a message of hope in the future, determination, business leadership and courage: and to provide an example for other regions.

Alessandro Santini

dallara

www.dallara.it

THE PURSUIT OF EXCELLENCE

On the road since 1972.

- Consultancies, design and production of racing cars and high performance road cars.
- Aerodynamics: wind tunnel and computational fluid dynamics (CFD).
- Research & development: vehicle dynamics and driving simulator.



www.dallara.it