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E are helping to shape the way we navigate an increasingly urban world

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#### 'Everything counts, even more than before' Lewis Hamilton on motivation, inspiration and why this year's F1 title fight is the best yet



#### **Pushing ahead** with a passion for competition PSA's CEO on building

brands, buying Opel, and why, for him, success is built on lessons learned at the track











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#### **THE FIA**

The Fédération Internationale de l'Automobile is the governing body of world motor sport and the federation of the world's leading motoring organisations. Founded in 1904, it brings together 236 national motoring and sporting organisations from more than 135 countries, representing millions of motorists worldwide. In motor sport, it administers the rules and regulations for all international four-wheel sport, including the FIA Formula One World Championship and FIA World Rally Championship.

#### THE FIA FOUNDATION

The FIA Foundation is an independent UK-registered charity that supports an international programme of activities promoting road safety, the environment and sustainable mobility. It was established in 2001 with a donation of \$300 million from the FIA and is governed by a Board of Trustees. Among its activities, the Foundation participates in various UN road safety and environment-related partnerships and is a member of the UN Global Road Safety Collaboration.

#### THE GLOBAL INSTITUTE

The Global Institute for Motor Sport Safety is an international organisation based in Switzerland that undertakes research to improve motor sport safety worldwide. As the safety research partner of the FIA, it conducts practical research at all levels of motor sport, from professional categories to grassroots racing. It aims to provide motor sport with the means to operate as safely as possible, and to use safety research for the benefit of public roads and society in general.

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#### Dear reader,

This year is proving to be one of great change in our world. FORMULA ONE, the pinnacle of motor sport, is tackling a particularly important season, with a new group in charge as commercial rights holder and with new cars that – so far this year – have delivered some very exciting racing. AUTO features exclusive interviews with two people who reflect this change: Formula One President and CEO *Chase Carey* and the driver who more than any other has made his mark on the sport in recent years, *Lewis Hamilton*.

Our series of exclusives with the key players in the automotive world continues in this issue, with an interview with *Carlos Tavares*, Chairman of the Managing Board of the PSA Group, recently involved in the important acquisition of the Opel marque. 2017 has seen the launch of the first advertising campaign aimed at improving road safety, produced by the FIA along with JCDecaux. Starting in this edition, you can see the photos of actual campaign billboards in some of the best-known places in major cities around the world, as well as interviews with each one of our ambassadors: in this issue we feature the Olympic sprinter *Yohan Blake*.

FORMULA E returned to the streets of Paris this year, just a few hundred metres from our headquarters. The event took place in the shadow of the monuments around Les Invalides and also marked the European debut of a new project that brings together sport and mobility, FIA Smart Cities, which you can learn all about in this magazine. With the launch of F2, the path outlined by the Federation to guide young drivers as they progress towards the top in motor sport is now complete. To learn more about the various routes that exist, AUTO met some of the people that make it happen behind the scenes: managers, talent scouts and those who head up academies, more often than not these days set up by F1 teams.

In the regular heritage section, we present two protagonists that have played a part in the history of sport on four wheels: four-times world rally champion *Tommi Mäkinen* and the *Renault Alpine A110*.

These and many other interesting features can be found in this issue. However, you will have no doubt already spotted a change to the magazine. As we had previously announced, AUTO has a new look as of today, both in terms of its format and design. Our aim was to make it bigger and easier to read. I hope you like it and you are very welcome to send in your ideas and suggestions. Enjoy the read!



JEAN TODT, FIA President



(01)

UP

FRONT

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Carey, to the people shaping driving careers, to rally legend Tommi Mäkinen, this is AUTO







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The A110 was the

to club



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FAST AND FURIOUS

Porsche cannot afford to relax for a second in this year's FIA World Endurance Championship with Toyota stealing a march in the

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# RAIN

WEC SPA 6 HOURS | The number one Porsche 919 Hybrid of Neel Jani, André Lotterer and Nick Tandy pits during a brief but heavy shower at the Spa 6 Hours, round two of this year's FIA World **DANCING** Endurance Championship, held in May. Though the crew finished just off the podium in Belgium, as AUTO went to press they held third place in the drivers' championship

standings behind the sister Porsche of Earl Bamber, Timo Bernhard and Brendon Hartley (second at Spa) and the allconquering Toyota Gazoo Racing TS050 Hybrid squad of Sébastien Buemi, Anthony Davidson and Kazuki Nakajima, who won in Belgium and at the season's opening round at Silverstone in April.



AUTO #19	(01)	UP FRONT
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NIO JOINS AUTONOMOUS RACE After its record-breaking performance at Germany's Nürburgring Nordschleife,

NIO has announced plans to build

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LAP RECORD On 12 May 2017, an electric vehicle recorded the fastest lap of the Nürburgring Nordschleife by a road-legal car. The NIO EP9, with top speed of 313kph, completed the 20.8km track in 6min 45sec, seven seconds quicker than a Lamborghini Huracán. The record may not have lasted long - just two weeks later it was broken by a McLaren P1 LM in 6min 43sec – but the

fact that an electric car can match its combustion-engined rivals is testament to how far their development has come. And don't bet against the NIO returning to reclaim the crown. "It is actually capable of over 1,300 horsepower and I was only running at 900," says driver Peter Dumbreck. "Once we've developed the batteries, there's even more time to be had."





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# (01)

In this issue: how Formula E is helping to boost urban mobility, motor sport bosses work to avoid calendar clashes, marshals are given special thanks in the first FIA Volunteers Day, and how the Global Institute and Toyota have teamed up to provide a boost for motor sport safety

#### Formula E races towards an urban future at Paris e-Prix

The third season of the FIA Formula E Championship witnessed one of its most exciting rounds in Paris in May.

Having first visited the French capital last year, the series once again put on a spectacular and thrilling show on the streets surrounding the complex of monuments known as Les Invalides in front of a crowd totalling 46,000 people over the course of the event. Victory went to Sébastien Buemi, who drove his Renault-e.dams to its fifth win from six races in the first half of the season. Argentina's José María López (DS Virgin Racing) and the German Nick Heidfeld (Mahindra Racing) completed the podium.

The event also hosted a special session of the FIA Smart Cities project involving Anne Hidalgo, Mayor of Paris and Chair of the C40 Cities Climate Leadership Group, and FIA President Jean Todt.

The occasion was marked by the announcement of a partnership between the FIA, Formula E and UNEP (United Nations Environment Programme) with the aim of fighting to improve inner-city air quality, continuing to boost the profile of alternative energy solutions and the increased uptake of electric vehicles.

Commenting on the new partnership, FIA President Todt said: "As we go racing with fully-electric vehicles in some of the greatest cities around the world we are spreading the message and this collaboration with UNEP will help us to reach even more people."

To find out more about FIA Smart Cities, see page 36.



The FIA Foundation supported a UNICEF Philippines meeting in Manila in May, the main focus of which was to ensure children are safe when travelling to school. The 'Safe journey to school' agenda, which is

- lives can be saved"

Participating countries included Mongolia. Papua New Guinea, the Philippines and Vietnam. Each of these countries is looking at ways of improving responses to child road traffic injuries. with Mongolia in particular collaborating with the government to increase child pedestrian safety. In the Philippines, the government will be mapping the risk to child pedestrians on highspeed roads, which are often in close proximity to schools with a student population regularly exceeding 5,000 pupils.



The FIA and UNICEF are supporting a road safety programme in the Philippines aimed at protecting school children

(Below right) FIA President Jean Todt, Head of UNEP Erik Solheim, Qatar Airways Group CEO His **Excellency Akbar Al Baker** and Alejandro Agag, CEO Formula Holdings.



#### **FIA** supports **UNICEF** child road safety agenda

being advanced by the Global Initiative for Child Health and Mobility, is a key part of the Child Road Traffic Injury Prevention programme - a joint operation between UNICEF and the FIA in the East Asia Pacific Region, Latin America, the Caribbean and also South Africa.

"This is an issue where it's clear we have the solutions available to improve protection for children," said UNICEE Philippines representative Lotta Sylwander, who opened the forum. "I'm encouraged that through the Child Road Traffic Injury Prevention programme - and through effective collaboration with our partners

The Manila forum also allowed those present to get familiar with the new 'Save LIVES' package launched by the World Health Organisation, a 60-page guide for improving road safety.



Some of motor sport's leading figures joined FIA President Jean Todt to discuss calendar clashes.

#### Talks aimed at reducing calendar clashes

FIA President Jean Todt and FIA Secretary General for Sport Peter Bayer have met with the heads of several FIA-sanctioned motor sport series to discuss ways of avoiding calendar clashes in the future.

Formula One was represented by Managing Director of Motorsport Ross Brawn along with Global Director, Promoter and Business Relations Chloe Targett-Adams at the meeting in Monaco in May, and they were joined by FIA World Endurance Championship CEO Gerard Neveu and Formula E CEO Aleiandro Agag.

Following discussions about the current calendars, the group agreed to work towards a better alignment of motor sport championship schedules in the coming seasons.

Commenting on the progress made, FIA President Todt said: "In close collaboration with its promoters, the FIA has in recent years worked hard to build and consolidate a wide variety of championships that provide great entertainment for motor sport fans.

"As such, it is important that everyone involved in our championships works towards. ensuring that fans have every opportunity to enjoy them to the full.

"Today, in collaboration with our partners, we have begun the process of harmonising our sporting calendars and I look forward to continuing this effort as we define our series schedules for next season and beyond."

#### Nissan Launches 'Signal Shield' to Tackle **Distracted Driving**

Nissan has developed a compartment in which drivers can store their mobile phones to prevent them from being a distraction on the road.

Working like a modern day Faraday Cage, the Signal Shield blocks all incoming data signals, so that call, text, and online notifications cannot distract the user whilst on the move.

The concept is built into the armrest of the Nissan Juke crossover, and once a mobile device is placed inside it creates what Nissan are calling a silent zone, effectively giving drivers the option not to receive notifications whilst on the road.

Distracted driving has become a major problem for road safety. According to a study by the RAC, the number of drivers admitting to handling their phone in the car has increased substantially, from 8 per cent in 2014 to 31 per cent in 2016.

Nissan's own research found almost one in five drivers (18 per cent) admitted to having texted behind the wheel.

A number of countries have introduced stricter penalties in 2017 for drivers caught using mobile phones behind the wheel. In the UK, for instance, a driver can now receive six penalty points and a £200 fine.

Alex Smith, Managing Director of Nissan GB believes the Signal Shield could help alleviate issues on the road. "It presents a possible solution for removing smartphone distractions while driving." He said. "Some drivers are immune to smartphone activity but for those who struggle to ignore them, this concept provides a simple solution."



Nissan's Signal Shield compartment blocks incoming data signals. so that calls and texts cannot distract drivers

RONT

**United effort** 

backed by the FIA Foundation.

**Safety Week** 

ORCES

**REAR** VIEW Tommi Mäkinen Renault

**P18** 



Motor sport stars also pledged their support to Global Road Safety Week, including every Formula One driver at the Spanish Grand Prix and all 20 FIA Formula E drivers at the Monaco ePrix. Another high-profile road safety event took

place in Jamaica on May 10, where Prime Minister Andrew Holness was joined by Olympic sprinter Yohan Blake to support the campaign.

To mark Global Road Safety Week, the FIA released a video on speeding starring 13-time Dakar Rally winner Stéphane Peterhansel. It also worked with member clubs to encourage road users to check their vision before driving and will include in its 'Golden Rules' for road safety.

Speed contributes to around one third of all fatal collisions in high-income countries, and up to half in low- and middle-income countries. The World Health Organisation estimates that a five per cent cut in average speeds could result in a 30 per cent reduction in the number of fatal collisions.



#### Motor sport volunteers celebrated worldwide

The first-ever FIA Volunteers Day paid thanks to and celebrated the commitment of individuals who freely give up their time as volunteers at motor sport events.

The FIA organised six events on May 12 to mark the special day over a variety of disciplines, where volunteers were rewarded for their efforts. Marshals at the FIA Formula One and Formula Two championship races in Spain were invited for

pictures with drivers and given special tours of the respective garages.

FIA World Touring Car Championship marshals

Formula One and F2 stars celebrate the first FIA Volunteers Day at the Spanish GP near Barcelon





**Drivers and marshals** oined together for a group photo at the World Touring Car event in Hungary

in Hungary were invited to the pre-event press conference and marshals at the FIA World Rallycross Championship event in Belgium posed for photos with drivers. In Monaco, FIA Formula E drivers and officials came together for a special family photo.

Some drivers in the FIA European Truck Racing Championship actually began their careers as volunteers and they swapped stories with the current generation. Double ETRC champion Norbert Kiss said: "Quite often these volunteers are out of the limelight, so today is a good opportunity to celebrate everything they do."

FIA President Jean Todt said: "It's wonderful to see so many people around the world engaging with the first FIA Volunteers Day. We want to say thanks to the thousands who give their time freely so that motor sport events can happen - without them it simply wouldn't be possible."

Stars of the FIA World Rallycross Championship celebrate with volunteers at the Belgian WRX event

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#### NEWS **Motor sport's** wonder women meet in Monaco



The Formula One Paddock Club in Monaco played host to a special meeting of the FIA Women in Motor Sport Commission in May, featuring some

Team principals Claire Williams (Williams) and Monisha Kaltenborn (Sauber) were joined by ex-F1 test driver and Dare to be Different founder Susie Wolff, plus junior racers Tatiana Calderon (GP3) and Marta Garcia (Formula 4), and FIA F2 chief

Ferrari duo Lucia Pennesi (Marketing and

Sponsorship Director) and Francesca Venturi (Chassis Design Engineer) were in attendance, as were FOM Global Directors Kate Beavan (hospitality and experiences) and Chloe Targett-Adams (promoter and business relations).

Founded in 2009, the Women in Motorsport Commission has been working to improve access to motor sport for women around the world. "We have women in competition in nearly all

disciplines today: racing, rally and karting," said Commission President Michèle Mouton

FIA President Jean Todt joined FIA Women in Motor Sport Commission members at their meeting in Monaco on May 27.

"We have also increased the number of women working in different areas of motor sport - team principals, engineers, officials, in marketing and design - proving that efficiency and competence are more important than gender.

FIA President Jean Todt echoed this, saving: "We see women in leadership, in management and in technical positions throughout motor sport. These women have become role models because of their ambitions and I hope that today's young girls are inspired to join this group in the future."

#### Global Institute to harness **Toyota's processing power** on new safety project

The Global Institute for Motor Sport Safety and Toyota Motor Corporation have launched a four-year research project using Toyota's Total Human Model for Safety (THUMS) software to further improve motor sport safety.

The joint project covers research on collisions across motor sport disciplines, and will include the analysis of safety elements such as seat structures and seatbelt positioning. The Global Institute, which is the safety research partner of the FIA, will use the results to put forward proposals to update motor sport regulations and safety equipment.

Although crash dummies are commonly used in tests, they do not allow for easy and detailed analysis of how collisions impact the brain, internal organs and other parts of the body. As a result, Toyota Central R&D Labs developed THUMS, which runs computer simulations of actual conditions during a crash and of the mechanisms of injury occurrence, including to internal organs and other parts of the body.

The simulation of the human body is made up of more than 10 million elements that accurately reproduce the human form, from precise bone strength to the structure of organs.

Global Institute General Manager, Research Laurent Mekies said: "The processing power of THUMS is impressive and will offer new levels of data for our research. It provides a huge amount of detail about what happens to the body in a high-speed accident." •

Toyota's THUMS software has been used to give a better insight to motor sport injuries, including hose in sportscar racin







**REAR VIEW** Tommi Mäkinen Renault

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SHOULD **MOTOR SPORT** CONTINUE **TO BE ALIGNED** WITH **ROAD CAR TECHNOLOGIES?** 

As debate begins over the shape of a number of major racing championships, including F1, AUTO asks three sporting insiders for their thoughts on technology versus entertainment

#### (02)

#### **JAMES** BARCLAY TEAM DIRECTOR, JAGUAI **RACING FORMULA E TEAM**

Put simply, technology transfer between motor sport and road cars is really important. The level of relevance between track and road in any particular discipline is the main determining factor for how many manufacturers are involved - and how deep their involvement is. This ultimately has a huge impact on the success of the championship - it creates a better spectacle for everybody when you have manufacturers competing against each other, and for us at Jaguar it was key to entering FIA Formula E.

We have a motto for our Formula E project. which is 'Race to Innovate'. At its core this is about taking what we learn from the race track and applying it to make better cars for our consumers in the future. It's the essence of why we're racing here and even in our first year we're seeing that manifest itself. We've long said that as an industry we have an electric future and we are already seeing products being shaped by what we do here - the I-Pace concept has recently debuted in Los Angeles.

This approach is not new for Jaguar, in fact I'd say it's true to the ethos of our brand. Right back at the beginning technology transfer was central to our approach – look at the C-type, the first car to use disc brakes, that was something we developed in racing. It was proven on the track, it won the Le Mans 24 Hours, and we took that success and applied it to our road cars, which was undoubtedly a huge step forward for the automotive industry at the time. We are committed to Formula F and it's our objective to be successful

Of course the macro environment of motor sport is something we keep a close eve on, especially in those areas where future technologies are being brought into the mainstream. We're an active part of the FIA Manufacturers' Commission and we feel it is important to have an open dialogue with the FIA and other manufacturers to develop a healthy sporting future across various categories. When we looked at returning to motor sport we looked at a lot of different categories. The defining factor with the Formula E Championship is that we see the growing significance of electrification for us as a road car manufacturer, and how useful a direct link between a motor racing series and a technology development path can be. We're also excited by the fact it's the only global platform for promoting battery electric vehicles in the centre of incredible cities. I have to pinch myself every time I come to one of the tracks – we're in places that have never experienced motor sport, and were are bringing the message of both the potential performance and the environmental benefits of battery electric vehicles. For us, it's a compelling case for why Formula E is the place for Jaguar to go racing. 4

#### TOM **KRISTENSEN** LE MANS LEGEND, PRESIDENT OF THE FIA DRIVERS' COMMISSION

Motor sport is a moving target, which is why it's so fascinating. It inspires a lot of passionate and brilliant people, and that keeps it at the forefront of technology. However, speaking as the son of a race car driver - I was born at a gas station - as a former race car driver and also as the person heading up the FIA's Drivers' Commission. I would say that for drivers the sporting aspect is always the most important element of what we do. All of the other things contribute - technology, circuits, engineering – but for drivers the sporting aspect is the overwhelming motivation.

That doesn't mean that we aren't fascinated by technology. Most of us work closely with engineers and that often means fine-tuning new technologies. In that sense you are connected to innovation but the human factor has to remain the deciding factor in what happens on the track. The complexity of making cars and setting them up is fine, but when you are talking about who wins the trophies we want that element still to be in the hands of individuals. I think for people watching it's also the thing they want to see: where is the heroism? Has a drive done more than his rivals to win, has he put in maximum effort for maximum reward? Having said that, for major manufacturers getting involved in motor sport - and the sport needs manufacturers - there has to be a technological side to the racing that is of relevance to what they do at a broader level

I think it would also be fair to say that the easiest way for marketing people to get approval at board level for a motor sport programme would be to directly connect it to an agenda the company is pursuing in its wider business.

I worked with Audi in the past, and continue to do so, and road relevance is hugely important for them. In the DTM it's more a visual relevance but the connection is still there, however in endurance racing the technology developed there has been very beneficial to Audi's road cars.

Are there series that need more of a connection to road cars than others? I'd say yes. The World Endurance Championship, for example, with its four classes has the widest appeal to car makers. But rallycross, which has great appeal thanks to its short races and unpredictability, probably doesn't need that crossover. It's a fine balance and you need to examine each series individually.

#### WOLFGANG HATZ FORMER HEAD OF R&D, PORSCHE AND FIA CONSULTANT

In racing the big advantage you get as a young engineer is that you are given a lot of responsibility, whereas in road car engineering young engineers only get a small part of the whole picture. Racing helps you to understand much better and much more quickly what a car has to do - you understand the whole car. That helps you later on the road car side.

In racing you also always have the result right in front of you. On the road car side it's a bit more difficult to compare. So, the opportunity to learn broadly and learn quickly in motor racing is a real bonus for manufacturers

Tom Kristenser

What I appreciated at Porsche when we built up the team for the 919 Hybrid programme was that I was able to use some people from other areas of the company. For example, with the hybrid system we chose people from the 918 production car programme because they had good knowledge of those systems and we transferred that to 919, and now their experience there is feeding back to other road cars.

On the 919 Hybrid we have a 900-volt system We learned a huge amount from that system and that is the reason why the first pure electric Porsche, the Mission E, will also feature a highvoltage system

In my new role as a consultant to the FIA, I'm helping on new technologies because we are now deciding new regulations for many championships, including Formula One, endurance racing, even Formula E.

Formula One always has to be a challenge It has to be extreme, but you cannot go back and have a normally aspirated, 20,000rpm engine and say that's the future as it clearly is not. F1 needs to be the pinnacle of technology as well. There is already broad agreement on those aspects among all the stakeholders. The development they have done in F1 with the powe unit is amazing, but now we have to say 'how much of that do we need?'

We have to find a way that all the partners in the process can be happy with the solution - technology, show, excitement, cost and competition. That is the same for all championships I think. •





**P24** 

# **Red star** rising



A winner in every major category he's raced in, 19-year-old Ferrari Academy driver *Charles Leclerc* is this year embarking on his toughest challenge yet taking the final step on the FIA's racing pathway to Formula One by aiming for F<sub>2</sub> title glory

техт JUSTIN HYNES

#### You came into this season's Formula 2 championship as GP3 champion. How difficult has it been taking on the F2 cars compared with the cars you were racing last year?

In Formula 2 it's all about tyre management. There is so much degradation. It will be a big part of this year. I'll have to learn to manage that well. F2 has a lot more downforce than GP3 and more power.

The biggest difference in driving style is in the race, because with more power you can't afford to do more rounded corners like you could in GP3 and you need to do more V-lines so as to not kill the tyres after two or three laps. It's interesting, but the key to the championship is definitely going be to tyre management.

You made a lightning start with two wins and another podium from the first races, but you're up against some old rivals from GP3, including Alex Albon and Antonio Fuoco who is your team-mate. You're also racing a lot of drivers with a lot more experience of this championship than you. So, are you taking this season as the one to learn and then next season to win?

No. I hate to take the first season as a season to learn. I think we will do everything to win and the goal is definitely to win. So, we will give everything for this. We need to keep pushing but we'll do everything to win and if this year is not our year then I hope next year will be our year.

#### You're racing with defending GP2 champion Prema Powerteam this year and that's been facilitated by being part of the Ferrari Driver Academy, which you joined last year. How has that experience helped you?

| It has two sides. First, they help me grow as a driver, and on the other side the image of being an Ferrari Academy driver is always an important thing in your career, for the sponsors and teams looking at you. The first image of the person is more positive. So on both sides it's really positive.

#### How much has being part of Ferrari's F1 programme helped you with your racing this year? Does it expand your skillset; broaden your ability to see around a race?

Yes, definitely. Participating in Kimi [Räikkönen] and Sebastian [Vettel's] briefing to see how they work, how they describe the car, what are the issues and how they speak and how they manage with all the engineers is really helpful to see.

In junior categories the set-ups are definitely not as technical as in Formula One. There are lots of restrictions, which is good in junior categories as it makes the racing closer. But to see the other side, how Seb and Kimi work and how they give feedback, looking at every little detail, it helps a lot.

Having the support of a major team is obviously of great benefit in defining how you will make the right steps, but before that how difficult a decision is it for a young driver to choose the series in which he or she will race?

Very difficult. Until 2011 I was making those choices with my father. There's a lot of responsibility because in racing things change quickly. In the early stages of a career it's manageable, but obviously the higher up you go the harder it is. If you make an error it can cost you a year. Up until 2011 we made quite good choices. Then we went with [manager] Nicolas Todt and to be honest he has been amazing with all the choices we've made.

#### Prior to your time in GP3 and F2, you raced in the FIA F3 European Championship. Was that a good platform to learn in?

Definitely. The most positive point of Formula 3 is the calendar and the way the weekends are organised because for a young driver it is really important to drive a lot and in this series you have. I don't know how many weekends of races, but you have three races per weekend, two qualifying sessions. That gives you a lot of track time. You also have good freedom to play with the car's set-up. It's a small car but you can change lots of things on it. So it helps you to develop technically.

#### There is now FIA F4, F3 and F2. How important is it for young drivers to have a clear pathway to the top level?

It's really good because talents will group in one series instead of going to some others and getting lost a little bit. Now they know what the path to F1 is and I guess most drivers will follow it. Part of the issue is the budget. I think many drivers stay in karting for budget reasons simply because they don't have the money to step up to Formula cars. But people are out working on it to make it more accessible for young drivers, talented drivers. That would be aood for the future.

#### Looking at Formula One, you made your F1 debut with the Haas team in testing at Silverstone last year and then two days later tested for Ferrari. How was it to go from GP3 to firing up an F1 car?

It was crazy. I think even for me, who had been in motorsport for 10 years, I definitely didn't expect the step to be that big. It is really impressive. The power of the new engines, with the energy recovery system, it's absolutely unbelievable. The first lap you are at 50 per cent throttle and you think, 'Okay, now I'm flat.' But there's so much more... 60, 70, 80, 90; it's really crazy.

With Ferrari you feel pretty proud to be in the team, especially when they are running just one car in the day and you're the one to drive it. You do feel really special and it's an amazing feeling.

#### Some of the drivers you've raced against in junior series -Max Verstappen, Lance Stroll and Esteban Ocon – have already made it to F1. How impatient does that make you?

| I'm not really impatient. I'm going step by step. I'm on my own path, trying to be as ready as possible if one day I get the chance. I think they've all shown that young drivers can do it, that we are quick. I'm quite happy to see them to do well. It gives me motivation but not impatience.





"I hate to take the first season as a season to learn. I think we will do everything to win and the goal is definitely to win"





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# Pressing the accelerator

#### (04)

Car manufacturers are embracing the world of start-ups to speed up the development of automotive tech and stay ahead of the game

TEXT MARC CUTLER

If you think that cars are just for driving you may have to change your perspective. The new generations of cars can park themselves, tell us the weather and even warn us if we're unfit to drive.

Putting the intelligence into a car doesn't just 'disrupt the market', it changes the way they are assembled. It calls for a whole new - and extremely rare - skill set. Which is why traditional car makers like Daimler, BMW and Jaguar Land Rover are looking beyond the production line and into the burgeoning industry of automotive start-ups.

Jaguar Land Rover has 28 staff working on applications alone and 400 on infotainment systems. It has even launched its own accelerator programme, called InMotion, with the aim of nurturing new creativity in the mobility and transport sector. This rolling six-month programme is currently funding up to 15 start-ups.

Meanwhile, BMW's iVentures accelerator programme has funded 16 start-ups from three continents and mentors them from its offices in in order to hot house them.

New York, Munich and Silicon Valley. But can car makers, with their five-year product life cycles and old-fashioned, linear development processes, match the blistering pace of the start-up world?

Sebastian Peck, MD of InMotion, and Saeed Amidi, founder of Plug and Play, certainly believe that the time is ripe to do so. Each aims to create the perfect mix of ingredients (human invention, financial knowhow, open IT platforms) that can propel the car industry to move at software development speed.

"We're very different to the core business," says Peck at InMotion. "What we're doing is mainly software and it's a very different cycle. We start small, iterate our way towards a product market fit and make sure we're very capital efficient."

#### **PLAY TIME**

Plug and Play is no stranger to the start-up scene but recently turned its attention to the automotive world after launching a joint venture with Mercedes, Volkswagen and Porsche. Every year it reviews 5,000 start-ups across the range of industries going through disruption. It then invests in more than 160 and runs industryspecific accelerator programmes software to

bring new





"We aim to bring together start-ups with large organisations like Mercedes"



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#### Who's who in the fast lane

#### Seven exciting start-ups on the road

#### ΟΤΟΝΟΜΟ

A car data exchange platform that allows auto makers, app developers and service providers to safely exchange car-generated data for a better connected car experience. www.otonomo.io

#### AIRBIQUITY

Lets you see data on your electric vehicle on your smartphone and helps you manage everything from batteries through to your driving range to information about your trip. Includes a reward system. www.airbiguity.com

#### CLOUDCAR

Created by Jaguar Land Rover, it's the world's first in-car payment system that lets you pay for fuel using your car's touchscreen. www.cloudcar.com

#### GOKID

A closed community ride-share platform for schools, sports leagues and families. Carpooling made easy with schedule management and live car tracking. www.gokid.mobi

#### SHEPRD

The modern school bus for families. On-demand micro-transit solution for children that delivers pooled rides in a professionally managed fleet. www.angel.co/sheprd

#### SPLT

An enterprise ride-share platform. Connects employees within organisations to share commutes and provides non-emergency medical transportation for patients. www.splt.io

#### товоот

Secure delivery to the boot of the car to ensure customers never miss a delivery. Designed to improve the experience for shoppers, retailers and couriers alike. www.toboot.co



#### "Much of the innovation in the world gets its momentum in California: the culture is amazing"

SAFED AMIDI



Plug and Play founder Saeed Amidi says the firm is working to link start-ups with car manufacturers



Sebastian Peck, MD of InMotion, is working to ensure car brand maintain their relevance

"It's the automotive industry's turn for disruption." says Amidi, Plug and Play has the experience and efforts of these inventors. The that it has 180 venture capitalists that it can work closely with.

gets its momentum in California because the culture here is amazing," says Amidi.

Plug and Play now intends to focus its energies on the mobility sector. "We aim to bring together entrepreneurs and start-ups with large organisations like Mercedes, Porsche and VW along with all of their suppliers, such as Bosch and ZF. We have all the big names - Nissan, Peugeot, Ford – and their Tier 1 suppliers and OEMs," savs Amidi.

the world's traditional car making experts and cross-fertilise them with the most inventive new connectivity creatives in an environment in which their talents can be nurtured and financially supported. The result will be a powerful new generation of

Soon, in-car systems will be able to offer advice and help on a variety of topics

vears. But it turned to Plug and Play world and source the elusive subsequently helped to create a Start Up Autobahn.

bus service.

multiple fronts.

InControl Apps

popular or custom designed.

The queue-busting app dynamics of the automotive industry. Despite their vast incubated by Accenture.

everything will be subject to become upgradable.

know-how to harness the creative advantage of a Silicon Valley HQ is "Much of the innovation and entrepreneurial spirit in the world

The plan is to bring the elite of

connected car apps that add new dimensions to mobility.

One case in point is Slice, a start-up incubated by Plug and Play, that offers car insurance based on the amount of time you drive rather than merely owning a car.

#### TIME TO DISRUPT

In 100 years, the car has gone from liberator to liability (in big cities) as costs have soared and congestion worsened. Today, the average speed of a car travelling down London's Piccadilly is the same as it once was for the horse and cart.

While journey times can never be shorter the heightened experience can make them feel quicker. That is why softwaredefined car journeys are the future of the automotive industry.

Software competence is increasingly becoming one of the most important differentiating factors for the industry, in key areas like safety, connectivity and infotainment. Revenue from these services (predicted to be around \$1.5 trillion by 2030 by McKinsey) will be vital.

In the race to develop applications, InMotion and Plug and Play can offer a sort of 'catalytic conversion' that could help motor manufacturers burn off the competition. A technology that could help Mercedes improve its fuel efficiency or safety would traditionally be developed in a five-year product cycle. Accelerators could reduce that cycle to 18 months.

Mercedes employs 350 people in its own laboratories in Silicon Valley, which have been established for 20



in order to connect it to the start-up entrepreneurial ingredients it needs. "Which is a great compliment to us." says Amidi. Plug and Play has

Stuttgart-based accelerator called By contrast, InMotion started as

an in-house incubator. It created a temporary car insurance innovation app, Synaptiv - a mobility data platform – and Boot, a delivery service to the car boot. In May, it launched Sheprd, a smart school

Sheprd demonstrates the need to provide mobility as a service rather than a car and will force traditional auto manufacturers to compete on

This is why car makers like Jaguar Land Rover are increasingly finding themselves in new unexpected areas, such as its showcase at the Mobile World Congress 2017 in Barcelona. There it revealed its new infotainment system along with its application platform, LIVE and

LIVE is laguar's embedded web platform by which apps can inform drivers and passengers of real-time updates on everything from traffic problems to flight delays at an airport. Its smartphone integration platform InControl Apps can cater for a catalogue of applications, ranging from global to local, be they showcased in a Land Rover - Fill Up and Go - exemplifies the new resources, it wasn't created by either a petrol giant or the car maker but by MobGen, a digital start-up

Connectivity and autonomous technology turns the car into an environment where drivers and passengers will have time to use new types of service and take part in new personal activities. As constant change, so must cars

The end goal for both InMotion and Plug and Play is that fantastic car brands retain their relevance. As Peck says: "I want us to be the instinctive choice for anyone who wants to get from A to B and directly interact with an environment." •

#### The club perspective



Jörg Beckmann, founding CEO of Touring Club Switzerland's Mobility Academy in Bern, is no stranger to the start-up world thanks to his background in European transport policy-making and research. Here, he explains some of the opportunities and challenges faced by FIA clubs around the world.

#### Is this an exciting time for start-ups in the mobility sector?

Absolutely! Already the past decade has seen a tremendous ascent of new and innovative players that have disrupted established transport markets in cities across the world. The electrification of motorised transport, led by Tesla, has enabled new ways of conceptualising everyday mobility by transforming the fossil-fuelled, analogue motor car into an electrically propelled and increasingly digital mobile device. With Uber, Didi, Lyft, Blablacar, Nextbike and others individual, private transport has become public and collective. For the next decade, this colossal transformation will gain even more momentum due to the rise of autonomous vehicles enabled by companies like Otto or Mobileve. While ICT and OEM giants are trying to trim their products and business models for this new auto world, a vast terrain opens up for new ideas and services from innovative start-ups across the transport sector.

#### What do you see as the biggest trends in the sector at the moment?

I see three, if not four, 'big Ds' governing the flight of transport development over the coming years. Decarbonisation remains the key challenge for transport policy-makers across the globe. Any new policy plan or innovative business offer will have to be judged by its contribution to reducing greenhouse gas emissions from transport. Deprivatisation

and the rise of shared mobility is reforming the traditional culture of automobility and separates individual car use from private car ownership. Digitalisation will turn the car into a self-driving mobile device offering to its users a lot more than simply the transport from A to B while generating data as both a resource for a more efficient transport system and new automotive markets. The fourth 'D' refers to the trend of demotorising urban transport by promoting more active mobility and thus making cities more liveable.

#### In what ways are FIA clubs getting involved with mobility start-ups?

More and more FIA clubs have come to understand that innovation, transformation and disruption cannot necessarily grow on rigid internal procedures and traditional club structures. Hence clubs, just like major companies, are now engaging with startups through boot- and bar-camps, investing directly in early stage companies or setting up their incubators and spin-offs. Yet many clubs still need to step up the pace and be more courageous in addressing the major transformations within the transport sector and society at large.

#### So how can FIA clubs benefit from these fastpaced developments?

There is a growing need for reinventing part of the very raison d'être of a mobility club - a club that, in essence, often and still is a (private) car club. Instead of being defensive towards mainstream urban transport policies today and ignoring the business threats deriving from the collaborative mobility movement, traditional car clubs and their 60 million members worldwide now have a unique chance to be part of a pioneering movement - just as much as they have been one themselves, when the motor car was disrupting an outdated and unsustainable horse-driven individual mobility regime more than a century ago.



TCS's Mobility Academy operates the world's first electric Cargobike Sharing (carvelo2go) in more than 10 Swiss cities with over 150 premium eCargobikes.



Tommi Mäkinen Renault

Porsche's race to road

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# 'Same game, new, attitude'

Meet the new F1 CEO, *Chase Carey*, who believes that Formula One still has plenty of room to grow, wants to collaborate with the FIA to promote motor sport globally and build a pathway for the F1 greats of the future



JAMES ALLEN

hase Carey has been CEO of Formula One since January, when Liberty Media completed its takeover of the company that owns the commercial rights to the FIA Formula One World Championship. Contending that the days of the

'one-man show' in F1 are over, he formed a management team together with Sean Bratches, Managing Director, Commercial and former F1 team owner Ross Brawn, Managing Director, Motorsports and between them they are building for the future.

It's fair to say that things are moving pretty quickly. One early deal was the changeover from GP2 to FIA Formula 2, thereby completing the pathway from F4 to F1. The new team has opened up some freedoms to drivers and teams in F1 to use social media, and a major research exercise is going on to assess the impact of this as well as identify what works and what doesn't in order to best shape the F1 of the future and its commercial opportunities.

Carey, 62, comes to Formula One after a long and distinguished career in senior management at 21st Century Fox, including a stint as President and Chief Operating Officer of NewsCorp. He fronted the Liberty Media takeover of F1 along with Liberty CEO Greg Maffei.





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#### "We want to take a great sport and bring some fresh energy but with respect for the history"

Carey has come into F1 because the investors he represents see an opportunity to grow the sport from where it is today, so what are the key indicators that make him believe he can do that?

"I think in many ways just looking at what was not being done to really maximise the value and opportunity in the sport over recent years," he says. "When you don't have a marketing organisation, you don't have a research organisation, when you don't have a digital organisation, meaningfully you have a one-man sponsorship crew. I think it speaks to the resources that are not being deployed to maximising growth in the sport.

"In today's age you need to be able to use all the tools you have available to grow; like digital platforms and social media, they could probably become the strongest driving force in growing a sport and to some degree it's improving now. If you look at the growth in video platforms, video digital platforms just in the last few months, it's a three- to four-fold growth in one year by just giving it some energy and opening it up. So I think there's a real pent-up appetite to engage with Formula One in a much deeper way."

Carey and Liberty Media see the opportunity and the means to grow F1, but it's important to recognise that it starts at a very high level already in terms of global reach and the quality of its audience. These factors make it quite unique as a global sporting property.

"Well, those are some of the characteristics that made it uniquely attractive for Liberty, for us to come into the business," says Carey. "We think events, particularly global events, are disproportionately going to grow in value and importance and F1 is unique. Probably with the Olympics and World Cup which are once every four years it's a sport that connects with hundreds of millions of fans around the world and it does it with a sport that captures their imagination. "One of the things that makes sport so

Carey is an admirer of F1's past, so probably had plenty to talk about with triple champion and Mercedes non-executive chairman Niki Laud

interesting to fans and everybody else is it's tremendously emotional," he adds. "People get really connected to it so when you have that passion and that sort of defining competition I think it begs to have a structure that helps make it a business which can be managed, while respecting what it should be as a competition."

#### OLD AND NEW

One senses with the new owners that the history of Formula One, its iconic venues and teams and its rich tales of triumph and tragedy, are a huge part of the appeal. Perhaps this is partly because they are American, and Americans tend to appreciate history more than Europeans, who often take it for granted.

F1 has many valuable and historic properties with strong traditions; teams like Ferrari, McLaren, Williams and Mercedes and on the race venue side you have Monaco, Monza etc...

"Tremendously important; I think the history is one of the most important assets to have," says Carey emphatically. "You want fathers and grandfathers and sons to grow up through it and remember experiences, and I think the drivers, the teams, the races, the tracks are an incredible part of what makes this sport special and really distinguishes it from other sports out there today.

"When I was at Fox and we first got in business with the NFL we had a slogan: 'Same game, new attitude', and I think it applies here. We want to respect the traditions that made this sport great and build on those. We're not looking to gimmick it up, we want to take what is a great sport and bring some fresh energy and innovation but with complete respect and admiration for the history that is an incredibly important part of F1."

This inevitably triggers the next question, whether Carey and Liberty will put emphasis on trying to maintain some of the 'classic' events in the F1 calendar that seem to have been under perpetual threat in the past decade, with depressing headlines suggesting GPs at Monza or Silverstone are "on the brink". Will Carey be aiming to ensure that those races are properly sustainable and part of the ongoing fabric of F1?

"Very much so," he replies. "We have great events around the world, but the foundation of this sport is Western Europe, which is largely where the tracks you're talking about exist. That's tremendously important and what we want to do is to build, but very much recognise that the foundation is critically important. So not grow at the expense of the foundation, but I think your foundation needs to be strong and continue to make it stronger and then we can add the dimension of further growth. But those historic events are an incredibly important part."

"One of the accusations thrown at me is that I'm going to 'Americanise' Formula One and I say clearly not'. It goes back to what I talked about: the history and the foundation. We respect that. I moved to London to do it, I didn't say 'Lets run t out of New York'. So I think we recognise the truth, the traditions

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done that well.





"There are aspects of what American sports do reasonably well that can benefit us and I think one of those is taking events and making them a larger event with the sport at the heart of it. That's the rallying factor and the reason, but it is the event that engages peoples' imagination and attracts new and different fans because they want to be part of the experience. So I think it helps attract young fans, female fans; it's not just going to a race. And I don't want to minimise the importance of the race - that is the defining element - but if we create other interesting things in the level of excitement and energy around it: food, music, information, exhibitions, things like that, engage the whole city, I think America has

"And Formula One really lends itself to that because it is such an event, there's only one in each country. So it should come to town and take over the city it's in for the week and we want to bring that type of energy and excitement to it."

The takeover of F1 by Liberty Media was only completed in January, so it's still early days. But the early signs are positive; for example, the meeting FIA President Jean Todt held with the major promoters of FIA championships - including F1, the World Endurance Championship and Formula E - at the Monaco GP to align the different calendars to avoid date clashes in future.

Another example was the ease with which Liberty and the FIA were able to conclude a deal by which GP2 became Formula 2, thereby completing the FIA's single-seater pathway from F4 to F1. Talks are ongoing about moving F3 onto the same race support programme as F2 and F1, thereby showcasing the best upcoming talent.

Asked whether the smooth F2 negotiations are a positive sign of relations between F1's new management and the FIA, Carey replies: "Very much so. We've had a number of meetings with Jean Todt and the FIA. They've been very constructive meetings, I think we have a shared

"We've had a number of constructive meetings with the FIA. I think we have a shared vision of where we want to go and we have a very good working relationship" Carey, with FIA President Jean Todt and his partner Michelle Yeoh, at this vear's Spanish GP. Carey says relations between motor sport's governing body and F1's new manag team are healthy.

vision of where we want to go and we have a very good working relationship. We speak fairly regularly and are really looking to figure out how we can build some momentum into that relationship that will facilitate having more of an organisation of people with responsibilities who can communicate with their counterparts. It's not just me and Jean Todt - I want people who have the responsibility and authority to make decisions and can engage with their counterparts and try to do things that will help grow the sport."

"Formula One is the ultimate race for us and I think as part of making F1 great you want to ensure you're doing what you can to provide the right training ground and opportunities for the next great drivers to learn and emerge and come through... Not just sit here at Formula One [level] and wait to see who pops out, but play a role and help develop the sport and the drivers.

"The drivers are our stars. Talent will ultimately win out. Obviously the teams, the brands and the other things are important, but the drivers are our stars and we've got to make sure we're doing everything we can to find the drivers of tomorrow. I want to work with the FIA to make sure we're doing what we can to provide the right development paths."

Carey sees Formula One as the pinnacle of motor sport and plans to build it into an even more successful business than it already is, thanks to harnessing the power of new media and communication tools. But he's seen enough of the sport already to know that it has a certain responsibility as the most prominent motor sport category to pull people in and encourage them to explore other disciplines and categories.

"One of the things I've found as I've gone around some of the tracks is that there was [with the previous management] a bit of trying to exclude other forms of racing from our events. To some degree I want to invite them. We want [F1] to be the pinnacle, but if there are things we can put on that interest fans, that's why we're doing this.

"We're doing this not for our purposes and not for the teams but for the fans and to create a great experience for them. If the fans enjoy other forms of motor sport, if in Australia they want the V8 Supercars, I don't want to preclude that. I should take advantage of that and get the Supercar fan there who hopefully becomes a more passionate F1 fan, and that's good for everybody."

Formula One has had a love-hate relationship with the United States, struggling for a permanent foothold since the days of the Long Beach Grand Prix 30 years ago, although Austin has been a success and Carey sees it having a strong future. >

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He says he'd like to add another race in what he calls a 'destination city', somewhere like New York, Miami, Las Vegas - the idea being not to take away from Austin's audience and appeal, but to put another race in that North American time zone, to provide a beachhead to grow the sport in that part of the world and more value for rights holders in the world's largest market place.

**AUTO** #19 Q2

One of Carey's first hirings after taking office was Matthew Roberts, a former ESPN executive, as head of research - one of many roles being created within Formula One Group that had not existed before. Carey believes that there is a large latent following for F1 in the USA, established over many years of broadcasts and the peripatetic race hosting in the country over the last two decades. It's a question of finding the best ways to engage them.

"One of the encouraging things in the US is you can track the followers we're gaining digitally," he says. "When we start to get the research we can track it. The sport is not going to be the NFL, so we're not deluding ourselves, but I think there's a much bigger fan base that is untapped. And to some degree because we've done nothing to try and connect and engage those fans, I think there is a much bigger base than people realise."

There are some major threats, of course. Among them no doubt in the future will be the threat to the foundations of motor sport from autonomous cars; if the public of the future no longer thinks about driving a car, and in a world where fossil fuel cars are no longer permitted in some countries and the car becomes solely a mode of passenger transport, will they care about the idea of a competition to find the best drivers?

Traditionalists say that it's like equestrian events, which are still hugely popular even though a century has passed since the horse was the primary mode of transport for most people. Others, including futurologists, are not so sure.

#### "The sport is not going to be the NFL, so we're not deluding ourselves, but I think there's a much bigger fan base that's untapped"

Is all of this too far ahead for Carey to consider it a threat to his business?

"I think the answer goes back to 'it's a sport'," he says. "And it's a sport with great contests that captivates with the combination of power, athletics, skill and technology to keep maximising the sport and puts it on a different path. Where's the car world going; [the car] that you're driving? It's not going to be a reflection of the path that we have to follow.

"I don't really call it a threat, I think it's the world we live in and we've got to figure out how we define our place in the world. But it's certainly going to be with great drivers driving incredible machines with hopefully great competition."

But short term the most difficult immediate challenge for Carey's administration, together with the F1 teams and the FIA, will be deciding how to balance entertainment and technology. Many fans feel F1 has become too complex in its technology and regulations. With his priority



Carey sees a strong future for the Austin GP, but would like to add another US race to the Formula One calendar n a 'destination city'

being fan-friendliness, will Carey insist that entertainment is given clear priority?

This is a delicate area, one that Ross Brawn and his team of F1 technical experts are devoting time and resources to on the F1 Group side in collaboration with the FIA technical department.

The decision to move F1 onto hybrid turbo engines in 2014 aligned the sport with the automotive industry, but not all fans are happy and the next steps for that industry will diverge significantly from the interests of motor sport, especially when you start to talk about autonomous cars.

F1 is synonymous with cutting-edge technology, but its strongest appeal lays in the human factors, the drivers as stars, as Carey keeps repeating. So there is a big decision to be made on where the balance lies between entertainment and technology. Should it be a heroic driver taming a monster of a car with a loud engine, doing things with it that none of us could dream of? Many fans would say yes. Or is the emphasis on the 'track to road' story for the manufacturers and fuel suppliers?

Carey picks his words carefully, but it's clear that entertainment, built around superstar drivers, is his priority.

"I think they're both part of what makes the sport special," he says. "It's a competition on one hand, but the technology and engineering are obviously a part of what creates the mystique and interest in F1 and there are certain people who are passionate about that.

"But between the two I think clearly the sporting aspect needs to be the driving force. Our drivers are our biggest stars, we want to put on events that are great with exciting competition and great action. We want the drivers to ultimately be the shining lights, not to be a sport driven by engineers, but a sport where the engineers are adding value.'

And how loud will the engines need to be? "We'd like them to be a little louder. We're working on it," he smiles. 4

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# CITIES IN <sup>©6</sup> MOTION

With the world on a pathway towards increasing urbanisation, ensuring that mobility systems of the future are efficient, clean and integrated poses a major challenge. Through its new Smart Cities initiative, the FIA is helping to find solutions

The future of urban mobility is at a tipping point with technological innovation, changing demographics, sustainability needs and evolving consumer attitudes and preferences all placing challenges in the path of those involved in designing urban mobility solutions for citizens and business.

City authorities are being confronted with issues such as congestion, air quality, road safety, use and availability of data, and transparent consumer information – but are committed to implementing long-term sustainable policies.

The FIA is contributing to this process through its long experience in transport and mobility, together with the expertise gained in motor sport: on one side, the FIA as regulator of motor sport promotes cooperation between industry players (car manufacturers, suppliers and IT companies) to ensure solutions deployed on the track are safe, standardised and efficient; on the other, the FIA and its member clubs are involved on a daily basis in promoting mobility solutions that are affordable, practical and flexible enough to respond to their different needs.

The combination of these two backgrounds creates a unique framework to test new approaches to mobility in cities. Cities, after all, play a key role in achieving sustainability targets, considering urban settlements are growing and attracting new populations.

According to the World Economic Forum, by 2025 the 15 most populated by mega-cities will register a significant increase in the number of citizens: New York will reach 24 million people (+20 per cent), Shanghai 28m (+40 per cent) and New Delhi 33m (+43 per cent).

Two major observations recur in the debate on the future of cities: innovation and sustainability. Cities have started using data to improve operations, but big changes are already underway in future-focused cities. Just as individuals have embraced wearable technologies to monitor health, physical performance and daily habits, so cities are turning to sensors to track the vital signs of the urban landscape.

Through this 'Internet of Things', sensorequipped water pipes can identify leaks, electric meters can track power use, parking meters can automatically flag violations or tell drivers where to park their car, street lights can adjust to traffic flows and smart grids can manage energy supply in a more efficient way, including to a fleet of electric vehicles.

As a catch-all, this activity has become known as Smart Cities and more and more metropolises are taking a strategic approach to getting smart.

#### THE DECISION MAKERS

The concept of Smart Cities has become one of the most rapidly growing frameworks applied in all sectors of urban development, including transport and mobility systems. Smart Cities symbolise urban areas that flourish, that connect with their dwellers and that comply with the highest safety standards.

Engineering consultancy Arup defines the smart city as one where "the seams and structures of the various urban systems are made clear, simple, responsive and even malleable" through technology and design.

Innovation doesn't refer only to technologies, products of services, but also affects policies. City planners need to rethink what infrastructure they require and how they function as a whole; how the amount of data generated by sensors and vehicles can be integrated, protected from hacking, reused for ensuring better service to citizens and opportunities for private initiatives to further generate services.

Ultimately, in order to keep up with this change, planners must make important decisions in regards to mobility and the way this will be ensured, regulated and designed.

This consideration then leads us to the second element of the urban debate – how to increase sustainability.



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#### FOCUS

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**VIEW** Tommi Mäkinen Renault

Last October, the UN Habitat III Conference in Quito, Ecuador gathered global leaders in the field of urban development who concluded that all dimensions of urbanisation should be more sustainable and inclusive. The New Urban Agenda Declaration, the outcome of the conference, reaffirms that mobility is an engine for sustainable and efficient urban growth. The document outlines three objectives that cities should pursue when designing efficient transport policies: a stronger focus on road safety in land-use and infrastructure planning; new forms of investment in sustainable, safe and accessible urban mobility modes for all road users, and the use of technology and

innovation in transport systems. These three pillars of sustainable urban mobility are incorporated in the framework of the new FIA Smart Cities initiative, a global programme launched by the FIA last March in cooperation with the FIA Formula E Championship and a number of global players such as Michelin, Enel, Julius Baer and Digital Leaders Ventures.

The initiative is a collaborative platform that brings expertise gained in motor sport, as well as knowledge in the field of mobility, to cities committed to promoting sustainable transport.

The Formula E Championship, where electricpowered cars race in the heart of cities around the world, offers a unique environment to showcase the role of innovations in transforming urban mobility - and represents an excellent opportunity to make city authorities meet mobility stakeholders and industry players to seek efficient urban mobility solutions together.

The FIA Smart Cities has a threefold structure: the first part being the FIA Smart Cities Forum, a multi-stakeholder conference organised on the day before selected Formula E races. Local city authorities will be joined by representatives of the automobile industry, academia and think tanks to reflect on how innovations can pave a way for cleaner, safer and more sustainable mobility solutions. A unique aspect of these forums is their location in direct proximity to the Formula E track. which will allow participants to get a first-hand experience of innovations featured though series.

Three forums have been organised this year in Mexico City (March), Berlin (June) and Montréal (July), which is the end of the Formula E season.

"Racing has always been a laboratory for the development of technology in the motor industry," says series promoter Alejandro Agag of the FIA-inspired initiative. "[In Formula E] 10 teams want to win, and they create and develop technologies to win - that is the big motivation. They then filter the same technology to their road cars, which will improve electric vehicles and the experience for road car users all over the world.

"We have big challenges ahead of us - we have climate change, inner-city pollution and the problem of producing energy in a sustainable way all over the world. Formula E wants to play a role in providing a solution, to help more people buy and drive electric cars. We aim to make the switch to electric cars make sense for consumers, to make it more efficient and affordable."

FIA president Jean Todt. Mayor of Paris Anne Hidalgo and MEP Rachida Dati at the FIA Smart Cities Talk in Paris.



Formula E is providing

inspiration to urban

planners as well as a

base for holding forums. This is NextEV Nio driver

**Nelson Piquet in action** 

during the race held in

Paris.



The first FIA Smart Cities forum in Mexico City focused on green mobility. Sustainable urban mobility is one of the core policy priorities on the agenda of Mexico City - a global capital with more than 21 million residents. The issues of congestion, infrastructure and air quality is a concern for public authorities that are committed to meeting the mobility needs of different communities while complying with sustainability targets.

The Mexican government has recently set an objective whereby 35 per cent of its electricity will be generated through more environmentallyfriendly sources by 2024. The forum created an opportunity not only to debate how this national plan can support the work of cities, but also present some concrete projects and innovations that can be deployed in support of these targets.

Speaking at the event in Mexico, entrepreneur and FIA Senate member Carlos Slim Domit said: "The Formula E platform provides an innovative way to address conventional issues in the transport sector: we need to scale up crosssectorial cooperation and public awareness to make sure that urban mobility is sustainable, safe and accessible for all road users."

FIA Vice-President José Abed added: "By 2050 the world urban population is expected to double. expanding demand for transport services and mobility solutions. City leaders should set illustrative examples of strategies to tackle issues of congestion, pollution and road safety to help ensure that rapidly growing urbanisation is sustainable and inclusive."

The FIA Smart Cities forum also has a more flexible format - FIA Smart Cities Talks, organised in conjunction with international events and more limited in time. A special FIA Smart Cities Talk was

held in Paris on May 20 at the conclusion of the UN Global Road Safety Week with a specific focus on road safety in urban mobility

There, FIA President and the UN Secretary General's Special Envoy for Road Safety, Jean Todt, and Mayor of Paris and President of the C40 network Anne Hidalgo discussed how to mplement effective road safety interventions in cities to address a pressing and growing concern in parts of the world. Experience has shown that soon after motorised transport entered city streets, fatal crashes rose.

Speaking at the event, President Todt said: "We must use sport as a worldwide loudspeaker for the environment and road safety. That's why we are here. We are convinced that by working together we will be able to make a difference.

"Solving the mobility challenge will require bold, coordinated actions from the private and public sectors. I hope the FIA Smart Cities initiative can contribute to designing better cities for those who live in them now and for future generations."

Ms Hidalgo added: "Formula E is boosting its research on electric mobility and that will allow the public to probably use batteries in vehicles that last a long time [in the future]."

#### **CONTEST OF PROGRESS**

The second pillar of the programme is the FIA Smart Cities Awards. It is a competition among all cities hosting a Formula E race on their progress in implementing concrete sustainable mobility solutions. Cities can learn from each other and the idea of collecting experiences from around the world would help spread the best practices.

There is a third element of the FIA Smart Cities initiative, which is to give support to cities in implementing effective and scalable programmes that can improve mobility for citizens. The FIA Smart Cities Start-Up global contest is an international entrepreneurship competition launched to identify, support and invest in innovative and impactful technology companies within the smart cities ecosystem. FIA Smart Cities partner Digital Leaders Ventures has committed €1 million to invest in the most promising start-ups.

The contest is focused on the themes of road safety, the Industrial Internet of Things, autonomous driving, e-mobility, hardware and smart infrastructure, big data and artificial intelligence, the sharing economy and digital services.

In Mexico City, for example, Econduce, a Mexican start-up promoting an electric moped ride-sharing scheme, has been offered an investment of US\$100,000 to further extend the programme in that country.

This is Smart Cities: a forum to debate, a platform for cities to exchange best practices and learn how technology piloted in motor sport can be applied to road applications, and a firm investment in entrepreneur solutions that have the potential to transform mobility in cities. This is a global challenge and the FIA is committed to mobilising global partners and working with cities to find the right path to the future. 4

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Andreas Mikkelsen wishes he'd sought medical advice sooner after suffering a concussion at the 2012 Circuit of Ireland rally.



James Hinchcliffe believes quick-thinking medics at Indianapolis saved his life after his leg-piercing 2015 crash



Kazuki Nakaiima was grateful for the clear advice he received from medics after a vertebra-breaking WFC crash at Spa





After fracturing two vertebras at Le Mans in 2012, Anthony Davidson's ecovery included practice in a go-kart to allays fears about a return to racing



# 06 **Roads to** recovery



Recovery from injury is a test that most top sportsmen face during their careers and in motor sport it is no different, with several high-profile drivers having managed to get back behind the wheel after a major crash

Injury in competition is a risk for all top-level sports, but this is especially the case in motor sport where even relatively minor collisions and crashes can end up with a driver in hospital. Accidents can cause various injuries from

sprained limbs to spinal fractures, all of which can hugely affect a driver's career. Fortunately, they now have the highest-level care from the circuit to the hospital and throughout their recovery.

FIA Medical Commissi

says every step in an

President Gérard Saillant

injured driver's treatmen

is key to their recovery.

Every step of this process is essential, according to Gérard Saillant, President of the FIA Medical Commission. "It is important to consider that a chain is only as strong as its weakest link," he says. "That begins at the track and after it's a safety chain with the extrication of the driver, the care at the medical centre, the transportation to the hospital, the recuperation and the post-hospital care."

So what happens to drivers when they are injured during a race or rally? It all begins with the first contact post-crash.

#### **FIRST RESPONSE**

When things do go wrong on track, the actions of the first responders can be crucial. They must assess developing situations and work to ensure the safety of all competitors - and potentially spectators - involved in an incident.

At the 2015 GP2 race at Spa-Francorchamps,

Dutch driver Daniel de Jong suffered an enormous accident when he went off the track at 300km/h (186mph) at Blanchimont corner.

De Jong, who suffered a fractured vertebra in the crash, lost consciousness three times as the Belgian marshals worked to free him from the wreckage of his MP Motorsport car, but he remembers their efforts to keep him calm during the extrication process.

"I couldn't imagine better people around than I had that day," he says. "It might sound weird, but you could see passion in those people who wanted to help me. They just asked me simple questions, no difficult conversations and they told me everything that would happen next in the process. They even joked with me, so that made it all less dramatic."

That passion for helping injured drivers can be vital in life-and-death situations. IndyCar driver James Hinchcliffe, who crashed heavily during practice for the 2015 Indianapolis 500 and lost 14 pints of blood when a suspension part pierced his cockpit and speared into his right thigh, is certain that the quick-thinking actions of the recovery workers kept him alive.

"I have no doubt that the safety crew at the Indianapolis Motor Speedway saved my life that day," he recalls. "I know they had a lot of difficulty getting me out of the car because I was literally pinned to the side of it by the suspension part. But they worked hard and fast and got me out of the car and into an ambulance."

Most injured drivers are taken to the event medical centre first. Here, their injuries will be assessed again and an early review of their condition will take place. The medics will explain the situation to the driver and offer an early diagnosis. It was in Spa's medical centre that de Jong was first made aware of how severe his iniuries were.►



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#### "When you are a racing driver you're a competitive person and the doctors have to know how to deal with that"

TOM KRISTENSEN

"I wanted to walk to the toilet," he remembers, | how to deal with that," he says, "The doctors "as I only felt pain in my chest, which I thought was because of the crash and would be over soon. But I had to stay on the bed because they told me that I had broken my back. I wasn't expecting that.

These early conversations between medical staff and injured drivers can be important moments in their recovery. When Kazuki Nakajima crashed during practice for the 2015 World Endurance Championship event at Spa, the Toyota LMP1 driver also suffered a fractured vertebra.

Although he was aware that he had hurt his back during the incident, Nakajima felt that the conversations he had with medical centre staff helped his understanding of what had happened to him.

"It was good because it was all clear to me what they were trying to do," he explains, "So the communication between me and all the marshals and doctors was clear all the time. When I understood the injury I was a little bit anxious but all the explanations I received meant the result was clear."

#### **HOSPITAL TRANSFER**

Once the staff at the circuit or rally medical centre have assessed the injured competitor, they will either be released, or kept in for further observation, or be transferred to a nearby hospital.

In some severe situations it will be at the hospital where an injured driver regains consciousness, and in such situations it will be up to the medical staff working there to tell them what happened.

"I remember that one of the first questions I asked when I woke up in ICU was, 'when can I get back in the car?" recalls Hinchcliffe. "The doctors just stared at me in complete disbelief. But a few days after the accident I had a very candid conversation with my parents and my surgeon and that's when I really started to understand the severity of it all."

Nine-time Le Mans 24 Hours winner Tom Kristensen, who suffered severe concussion in a crash at a DTM race at Hockenheim in 2007. believes that doctors must make sure drivers understand their injuries to help them reach a full recovery.

"When you are a racing driver you're a competitive person and the doctors have to know

really need to ask them, look them in the eyes, and make sure that they understand the diagnosis and the process of recovery."

#### THE NEXT STEPS

Depending on the severity of their injuries - some may require additional surgery or other treatment - the drivers will begin their recovery process after leaving hospital.

For Hinchcliffe, who did not return to racing until the start of the 2016 IndvCar season, 10 months after his crash, rest was the number one priority for his recovery.

"I did as little as possible," he says. "Since rest was the best thing for my body I made a game out of how much rest I could get in a day. The faster my wounds healed, the sooner I could get back to training and preparing to be back in a car."

Hinchcliffe's competitive nature meant he even made his recovery process a competition, but that intense drive has helped other drivers on their own road back to the cockpit.

Nakajima's recovery from his spinal injury was remarkably swift. One week after his crash he was transferred to a hospital in Nice where he underwent a cementoplasty to fuse his fractured vertebra. Then, after an intense period of physiotherapy and rehabilitation, he returned to race at the 2015 Le Mans 24 Hours, just six weeks after his accident.

More education for drivers on using safety devices would help in the event of a crash, says double WRC champ Marcus Grönholm.



"I went for the operation, but of course I had to think about it because with an operation there is always a bit of risk," he explains, "But for me to race in Le Mans was the number one priority, so in the end we decided to go for it."

Extended periods of physical rehab to build up strength are common parts of recovering from an injury, but some sporting therapies can also be beneficial. Anthony Davidson, who fractured two vertebrae in an airborne crash at the 2012 Le Mans race, was worried that his injuries would affect his driving abilities, so he practiced in a go-kart in an attempt to allay his fears.

"I was probably more scared of not being able to drive again than anything else," he recalls. "So I got into a go-kart a few weeks later just to prove it to myself, encouraged by my physio, which was the biggest confidence boost I could have hoped for."

#### **RETURNING TO ACTION**

Returning to competition can be a daunting prospect for an injured driver. Some feel scared or nervous and this is where the doctor's role is even more important.

As Saillant says: "Sometimes returning to action is very hard. The most difficult time is not iust after the crash but some weeks later because you are alone, the media is no longer speaking about you. So psychologically-speaking this may be a very difficult time."

When the driver is ready to come back to competition it is then up to the Chief Medical Officer of the circuit and the permanent medical delegate of an FIA championship to make an assessment.

"Their job is not to say whether the driver is in good shape to compete in terms of performance but rather to say there is no risk for himself or for other competitors," says Saillant, "The most sensitive decision to take is regarding the after-affects of concussion."

The first few laps back in a cockpit are an moortant moment in any driver's recovery process. Davidson remembers being concerned about feeling pain on his return to action at the Daytona 24 Hours event, seven months after his Le Mans crash.

"I remember being scared that I might feel pain and that I wouldn't know what to do if I did," he says. "I still felt a bit more like a patient than a racing driver at Daytona when I turned up, but that feeling soon went away after a few laps."

Kristensen feels that his Hockenheim crash, which caused him to miss three DTM rounds, changed him. But it was his hunger to race again that helped his recovery.

"You could definitely say that after an accident like that one something changed in me, and mentally you have to be very strong and determined and passionate to get over that." he says. "It really is that combination of determination and passion that brings you back."

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during competitions.

about his symptoms.





#### FIA World Endurance Championship driver Anthony Davidson suffered fractured vertebrae in an airborne crash at Le Mans in 2012

#### **FROM ONE PRO TO ANOTHER**

Although every injured driver will face unique challenges during their recovery process, their fellow professionals can offer advice based on their own experiences of dealing with injuries. Marcus Grönholm, twice a winner of the World Rally Championship title, suffered a brain injury after a crash that knocked him unconscious when his car struck an exposed concrete light pole at an X Games event in Los Angeles in 2012. He was using an unfamiliar HANS device and seat on the day of his crash and believes it would be beneficial for drivers to receive more education on using new safety devices

"We need more education because there is nothing wrong with having more information," he explains. "That is always a positive. It only takes a few minutes out of your life and something can always be done on the safety front "

Andreas Mikkelsen suffered concussion when he had a heavy front-on collision at the Intercontinental Rally Challenge's Circuit of Ireland Rally in 2012. He went on to complete two more stages and finish the rally after the crash, and now believes it was a mistake to wait so long before consulting medical professionals

"I waited a long time to check it out." he says. "I finished and went through all the usual post-rally procedures and then decided to check it out just to be sure. It is definitely better to be safe than sorry, so I should not have waited so long to check it out."

#### LEARNING FROM THE PAST

There is no doubt that safety and medicine have improved hugely in motor sport over the past 20 years, and much of this is down to better education.

For Saillant, this is one of the most important aspects for treatment and recovery of a driver. "There is a lot more education and training for doctors and medical staff involved in motor sport," he says. "For extrication, resuscitation, transportation and so on, education has really improved because we now have lots of training sessions and seminars around the world."

The FIA is working hard to ensure that the medical practices at the top level of motor sport filter down to the grass roots. This is why communication of the latest techniques and practices is essential.

Saillant adds: "We now have a lot more information on the FIA website and in publications such as AUTO+ Medical, which is distributed to motor sport medical staff and volunteers worldwide. Through all of these tools medical education is getting better and better."

Hinchcliffe is also unequivocal in his belief that the knowledge motor sport safety and medical

researchers have accrued over years kept him alive in the aftermath of his accident

"I think the lessons learned in the past played a key role in my survival," he says. "The understanding of the situation and the 'in the moment' decisions made the difference between life or death. Only decades of experience can prepare a group for that."

#### Medicine matters

Some of the driver interviews in this article originally appeared in AUTO+ Medical, the FIA's international journal of motor sport medicine. To subscribe to future issues of AUTO+ Medical, email: medical@fia.com



AGTO ASKS The Big FORCES Charles

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# EMPOWERED TOCOMPETE

Triple FORMULA ONE CHAMPION Lewis Hamilton on motivation, inspiration, the joy of battling Ferrari, and why racing your team-mate is a "vortex of tension that just gets stronger and stronger"

When you were young what were the things that inspired you about motor racing - speed, control, freedom, competition?

"I don't really feel that I was inspired to drive. I loved cars." as all kids do; model cars, anything with a steering wheel. I loved motorbikes; I loved anything with an engine in it. Then when I was five years old, I went on holiday, there were these Formula One bumper cars. Shaped like a Formula One car, but it was a three-wheeled bumper car basically and my parents couldn't get me off it. I just loved driving it. I loved watching my dad drive. I just loved the feeling of it and then once I did it and I could do it, I wanted to do it more. It's difficult to say. I don't feel like I was inspired. I was just... Maybe it's fascination.

"For me, it's the same thing as you say to someone who goes to Disneyland - what's inspired you to go on the ride? You're not inspired to go on the ride, you only want to go on it because it looks like it's fun, and that's what it is. It's exactly the same as anyone going to the theme park. I love driving a car because it's a rollercoaster ride of my own, and depending on how far I want to take it that determines how much fun the rollercoaster ride is."

You've spoken a lot about later being influenced by Ayrton Senna, but were there other people you admired? Other examples you wanted to follow and other people who made you think there's a lesson to learn there, something about their approach to sport or process or discipline?

"As a kid I did watch others, probably because my dad was watching them. Muhammad Ali, for example. Being a black family it was not necessarily always easy for us. There were no black Formula One families on TV for us to really relate to! I felt like I could relate to Ayrton. So it was great to be able to see other individuals from a similar background, and particularly ethnicity, doing great things elsewhere. Seeing how they do it, and how they faced up to the difficulties and challenges they go through." •





Tommi Mäkinen Renault

 THE FIA
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In football, boxing, athletics? "It wasn't in football; it was in boxing. Lennox Lewis, Frank Bruno, I used to watch them a lot, those sports stars. Then watching the Williams sisters come up, watching Tiger [Woods] come up, they were the ones, definitely. "I saw what Tiger was doing and I was like, 'one day I want to be like that in my world, in racing'. I'd look at the Williams sisters breaking through and think, 'I pray and hope that one day I can be great like they have been because they have broken down barriers'. For example, I play golf now because of Tiger. Well, actually I've guit because I suck! But I took it up because of Tiger and I started playing tennis because of the Williams sisters, it's just how it goes. You get someone from India coming along and doing great things in their sport and it inspires others. They have an Indian cricket team, the whole country loves cricket. It's how it goes with all nations and all ethnicities."

#### The path you took from a kid who goes on a theme park ride to one that gets in a go-kart and starts competing. That's a tough route for any driver. Does that come at the expense of what you might call a regular childhood?

"Yeah, I think that's the name of the game for all us kids who raced. You leave home on the Wednesday or the Thursday sometimes to get [to a track] and practice on Friday, Saturday and Sunday, and you miss days off school. You miss weekends where you're friends are going to an arcade, or bowling, or sleepovers, group activities. You miss that social connectivity.

"So when you go back to school on a Monday you walk up to a group and they're all talking about this amazing weekend they've had and you can't be a part of it. They're like, you weren't there, and I used to have that all the time. So to build those bridges was very, very hard, it was like rebuilding it every bloody week. So yeah, lots of sacrifices with that."

#### Are there elements of junior racing that made you grow up too quickly because you're in what is predominantly a world of adults?

"Lused to think that was the case, but now I don't think so. I think if anything it hindered me in my growth, massively. I got to Formula One and I feel like I was hugely immature. I know young 17-year-olds now who are so mature, so much further along than I was at 22 and looking back on it now I think it hindered me.

"It didn't allow me to blossom as a growing being. It just didn't allow me to blossom into who I was and it took me longer... I was cocooned for longer, which is surprising. You'd think being around adults it would help you actually grow up. But you miss that [teenage] gap: you take a leap from being a kid to having to be an adult and you miss all the foundation in between. So you get there; you can act like an adult but you're not really an adult, and that's how it was basically for me."

#### Over the past five years, just from an outsider's point of view, you appear to have grown an awful lot, though. Would you agree with that?

"Yeah, and that's me blooming late. Probably, if I hadn't been racing, I would have matured way earlier. I would say for parents pushing their kids into football and soccer and sacrificing all their other stuff, they've got to find a real balance I think. Parents are just so forceful. It's all sport, because we want to be a star, and I think it's important to make sure that they maintain some of their [kid's] childhood because you can't live it again. Once it's aone, it's aone."

#### If you look at your experience, including all those things you've just talked about, and because you're a person who does this quite a lot with social media, what is it about your experience that motivates you to give inspiration to others?

"I feel odd saying, 'I'm going to say this because I'm going to inspire you to do that'. But perhaps hopefully in good actions that I do... I do notice that kids or people message me all the time to say, 'you've been out training today [and that inspired mel or you wishing me a good morning has just really lifted my day' or something like that. So inspiration comes in lots of different shapes and forms. "The fact is that being in my position I have a great power to be able to, with the click of a button, positively affect someone's day or their week or whatever. What it really comes from for me is growing up in Stevenage, on Peartree Way. I wanted to be a racing driver. I had no comprehension that in 20 years' time people were going to be following me to races around the world, saving up their money and flying out, buying the tops and flags and getting to the tracks. All the 19 other cars [are there, but] there's only mine; the energy they have is going to my car, for me. I never ever thought that that would be the case, and there's not a lot of opportunity always to give acknowledgement to them for that, so social media is a real way of just trying to bridge a gap with them. "Like recently I did a live chat with people and in it I'm at home. I showed them a little bit of my world. I'm at home, I'm about to go and do this, normal things, but it's a way of connecting."

#### Is that fun for you? You say it's not your intention to inspire people: it's just you being you, right?

"I don't mean that it's not my intention to inspire people. I just don't wake up in the morning and think right. I'm going to inspire a thousand people. But I love connecting with them because I think the energy I get from them is just incredible. I see kids coming up, kids who obviously want to race and be a racing driver like me and of course when I see a kid I'm like 'work hard at school, man'.

> Hamilton's had plenty of chance to spray the bubbly in F1 this season. but he's got a fight on his hands thanks to the rise of Ferrari.





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"In my position I have a great power to be able to, with the click of a button, positively affect someone's day or their week or whatever"



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**VIEW** Tommi Mäkinen Renault

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"Adults are different. I'm talking to an adult on the same level, they're the same age as me, or maybe older than me and when people say 'you're my idol' when I'm younger than them, that's strange

"But for a kid it's different because I remember what it's like to be down there looking up at the giants in the world. I remember being talked down to by other adults who would say that you're not going to amount to anything, and I refused to... There may be one of those kids who has heard that before and I want to change that in their head, in their mind. So, if there are 10 people who have said something negative, maybe my one positive comment can erase those.

#### At the end of 2015, you said: "What's important is a peaceful life, not to have too much ballast and no stress." Have you reached that point vet?

"I think life's journey, if it was easy and completely peaceful the whole way through, would be boring. I think rough seas make it exciting every now and then. So I would say my life is more like the ocean, where you wake up in the morning and it's calm, and then just depending on the wind you get swells, and if it's raining it gets rougher. In general, though, it's pretty good.

"It's just about trying to find balances and not taking things too seriously or not dwelling on too many things. It's incredible how powerful the mind is, you can accomplish almost anything with your mind. It's convincing yourself and just unlocking that mechanism in your head in order to do it.

"But yeah, I'm definitely in a very good place and I think I'll continue to grow in the next five years. In five years' time I envisage the same step as the last five years in growth."

#### Going back to the joy of driving a racing car and what you were saying about it being a rollercoaster ride, is that something you're experiencing with this year's cars?

"This car, for me, gives me the same feeling as last year's. All they've done is make them a little bit faster, but fundamentally it's the same car as it was last year for me They've really not changed. All it's done is taken a step up in speed. The characteristics of the car, the way it moves to the corners is the same, just a little bit faster. It's the same rollercoaster ride just turned up two notches, but not so much that it's like there's a new turn in it."

#### So your enjoyment this season is predicated only by the level of competition?

"Yeah, right now it's solely on competition. It feels the same car as last year [but now] we're just having a competition. If we're able to qualify the top 10 within half a second or something like that, now that's a fri\*\*in' race. Maybe top five within a few tenths of a second, that's racing man, because then every millimetre, every metre of braking counts... Everything counts even more than before, and right now it's even more the case than before.

"It's also easier battling another team. There's a whole mental shift, the whole team's dynamic shifts in a powerful way. When [the competition] is all within a team it's just like a big vortex, and depending on the tension it gets stronger and stronger and is actually not really what a team is built to be.

"Now having another team [to fight] we are pulling together with that same drive - it's just so much more powerful, it's really awesome."



Hamilton feels his 2017 Mercedes is fundamentally the same car as last year, just "a little bit faster"

When the time comes and you have to stop doing this, when you decide to stop doing this, what would you like you legacy to be in Formula One?

"I don't really think too much about it to be honest. I think you could probably get caught up in what you want your legacy to be. I can't envisage what it's going to be. "The only thing I can think of in the racing world is that I want to be known as a hard, out-and-out but fair racer. Ayrton Senna - the way he's remembered today I hope that I'm remembered in a similar light. Since I started racing that was always my goal, to do something similar to Ayrton, to emulate him. I hope when I'm gone people can respect my commitment, my ability and my drive the way they respected his."

#### The fact that you can't think about your legacy suggests that you're not close to backing away from the sport?

"My destiny is in my own hands. I can decide to stop at the end of this year. Does that mean my legacy is less great than it would be if I stop in five years' time? Who's to say? I don't like to plan for it because I don't know what's around the corner, I don't know what I'm going to do. Whatever I know I'm going to do, if I apply myself the way I've always applied myself in my racing and I apply it to anything else I want to do in life, or even if it's still in racing, I feel I can achieve great things

"I'm never going to stop pushing the limits of whatever it is I do with myself and I'm always going to strive for greatness in whatever world it is that I'm in. So I think that mission or that mentality will create my legacy." •

"I want to be known as a hard, out-and-out but fair racer. Ayrton Senna - the way he's remembered today I hope I'm remembered in a similar light"

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**REAR** VIEW Tommi Mäkinen Renault Welcome to club world

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# **PATHS** ΤΟ **GLORY**

Many a young driver has struggled to plot the right route to a top seat in motor sport, but with the completion of the FIA's racing ladder that job just got easier. AUTO speaks to the people guiding the careers of the next generation of superstars to find out why

The done thing when receiving an award is to recognise the people who helped you along the way. Speaking at the FIA press conference after being crowned 2016 Formula One World Champion, Nico Rosberg cheerfully thanked his family and the Mercedes team for their unstinting support. And then, being one of motor sport's more thoughtful individuals, he proceeded to talk about the other people who had helped him over the years: team bosses and engineers from his formative seasons in karting, Formula BMW, F3 and GP2. Rosberg's comprehensive list brought home how much of an individual's success is down to a collaborative effort spread over a long time.

The current F1 field have all gone through a similar initiation to Rosberg, rising through the ranks of various feeder series before reaching the pinnacle of single-seater racing, usually with the aid of a guiding hand, plotting a route through myriad competing formulae, picking the right time to take a step up.

Today, that process is being simplified. Those who inherit the F1 seats vacated by Rosberg and his contemporaries will accumulate points to gain a superlicence and, most importantly, will graduate through a junior programme that is now linear as the FIA's Global Pathway philosophy consolidates those feeder series into a standardised pyramid.

Frédéric Vasseur and Nicolas Todt, co-owners of the ART Grand Prix team, were among those publicly thanked by Rosberg in Abu Dhabi. Over 12 years of competition in GP2, 10 ART alumni including Rosberg (and a handful more from other series) have made the step up to Formula One.

Todt says owning an F2 team has provided useful synergies with his other job as a driver manager, enabling him to attract talent with the promise of a seat in a winning junior team. Over the years he has guided the careers of many young stars such as the late Jules Bianchi and current F2 ace Charles Leclerc. The process of nurturing a career, he says, starts at an early age.

Prema races in all four junior FIA categories, including the FIA F3 European Champ ionship with 18-year-old Chinese driver Guanyu Zhou.

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**VIEW** Tommi Mäkinen Renault

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Stoffel Vandoorne raced in the Formula Renault categories before iumping up to GP2 and replacing Jenson Buttor at McLaren this year.



Frenchman Charles Leclerc's burgeoni career is being guided by driver manager and ART Grand Prix co-owner Nicolas Todt



Red Bull-backed Pierre Gasly won the 2016 GP2 title with Prema Powerteam and is now the F1 team's reserve driver

"It's my job to find the best talent," he says. "For that you need to talk to people and have good contacts in karting. You do not find great talents who are 20 years old and without a manager or a place in a young driver programme.

"Many people told me Jules Bianchi was the best driver of his day in go-karts. We met, had a great relationship and I started to fund him in karting. The young driver programmes can maybe afford to take five or six juniors and simply retain the best two every year - but that requires huge funding. As a manager, my job is to find the diamond that needs polishing. I did that with Jules and now with Charles. He is 19, but I signed him when he was 13 and funded him in karting. At 16, he moved to Formula Renault 2.0 and was the best rookie in the Alps championship; at 17, he did the FIA European Formula 3 Championship and was best rookie again, then he joined the Ferrari Driver Academy and moved into GP3 last year and won the title. Now he's in F2, still with Ferrari. It's early days, but he's doing very well."

Future motor sport historians will be able to identify Leclerc's age and era from the junior championships in which he has competed. The junior categories have been highly fragmented for a number of years, offering a bewildering array of small steps or giant leaps between the grades and a number of competing offerings, leading to a strange situation where the best drivers of each generation may be based in the same geographic region but never race against each other before arriving in F1 (Daniil Kvyat and Pascal Wehrlein, for example:

rebranded as Formula 2.

"E3 involves working within a team environment a lot more. You have to deal with engineers, cope with a lot of testing and learn how to provide good feedback. After that, you jump up to F2 and build on the F3 experience by learning about strategy. You learn to work with the Pirelli tyres, study degradation, learn how to try different tactics, trying undercuts, starting on an alternate strategy. It's extra knowledge that provides the last little bit a driver needs to be ready for F1."

#### **BUILDING TO F1**

Prema competes across all three junior levels. It runs Formula 4 cars in Italian and German F4 championships, F3 cars in the FIA European Formula 3 Championship and an F2 team. In 2016, it had an impressive clean sweep, winning the team championships in both F4 efforts, F3 and GP2. It added drivers' titles in F3 for Lance Stroll and in GP2 for Pierre Gasly. While Stroll and Gasly represented the Williams and Red Bull young driver programmes respectively, this year Prema has five of Ferrari's six young drivers in its stable. For a successful team in the junior ranks, working with drivers signed to an F1 team is an interesting exercise. "It's something to be proud of because it doesn't happen all the time," says Rosin. "The idea of F1 teams having young driver programmes is relatively new but it's not so different from when Elf, Shell, Marlboro etcetera were doing that job.



Force India's Estebar Ocon is among several current F1 drivers who moved straight to the top category from GP3

#### "A driver must keep his head down and work with the team he's racing for. He can't waste time dreaming he's the next Vettel"

RENÉ ROSIN

both born in 1994, both driving in Western European junior series, never meeting in competition).

This is changing. The FIA, via the office of the Single-Seater Commission, is gradually migrating to a four-tier single-seater system moving up the levels from the new Formula 4 championship - intended as a national series and the first rung on the single-seater ladder - all the way to Formula One. It goes via regional Formula 3 championships - of which the FIA Formula 3 European Championship is the first example - to the top level of junior competition in the former GP2 series, now

The move has met with broad approval. "They can be big steps, but they're the right steps," says René Rosin, team manager of Prema Powerteam. "The step between F4 and F3 in particular is big - and maybe sometimes you can't make the jump every year and need a couple of years - but the series are set up for that. In F4, you learn the basic techniques of driving a single-seater, the basics of driving conduct, and you get a lot of mileage to improve your experience rapidly. There isn't much downforce in an F4 car and it's quite easy to overtake. That's good for the first level: you get a good battle, that car moves around and you have to fight it."



lean-Paul Driot of DAMS says F2 provides the perfect preparation for actually driving an F1 ca



Ferrari Driver Academy boss Massimo Rivola would make GP3 less powerful to fit the junior ladder better



Nicolas Todt is well placed to help drivers as a manager and co-owner of F2 team ART Grand Prix



René Rosin of Prema says the new FIA structure between the iunior formulas is the right one

"The one thing that we need to make sure the drivers understand is that they're not in F1 vet. They're in F4, F3, F2. irrespective of the F1 programme they're with. A driver needs to keep his head down and work with the team he's currently racing for. He can't waste time dreaming he's the next Sebastian Vettel or Fernando Alonso. Start thinking like that and it's going to go wrong. There's a lot of learning, a lot of effort and, if you do well, then you get the chance - but only if you prioritise the job in the current series, rather than dreaming about its big brother."

For the moment, the pyramid isn't entirely regular and the ascent up the ladder isn't as linear as many would like. One particular outlier is the GP3 series. It's a difficult championship to quantify in the context of the new structure: on the one hand, a step below F2, on the other not a very big step and therefore potentially devaluing both F3 and F2. Certainly several current F1 drivers (Valtteri Bottas, Kvvat and Esteban Ocon) simply skipped GP2 and went directly from GP3 to F1.

Massimo Rivola, director of the Ferrari Driver Academy, believes there is the potential to tweak GP3 to make it a better fit with the new structure. "The right category and the right team can dictate the career of the driver. After karting, what young drivers need most is mileage in the car. F4 and F3 reflect this very well: in F4 they learn to drive a car, in F3 they learn to drive a car with aerodynamic downforce. GP3 has the advantage of being a support race on the F1 calendar, but it doesn't allow the driver to complete many kilometres.

"I think GP3 could be less powerful so that F2 becomes more valuable for the drivers' experience. F2 must be seen as the final exam for a driver before F1 and should not be skipped."

F2 is due to receive a new chassis next year and there has been debate about what the new car should be capable of doing. There is, however, a great deal of respect for the format as it currently stands. Jean-Paul Driot manages the DAMS team that won the 2011 GP2 title with current F1 Haas driver Romain Grosiean, and has run former GP2 race winner Davide Valsecchi and current Renault F1 driver Jolvon Palmer. It has also competed in the rival Formula Renault 3.5 category, in which Kevin Magnussen and Carlos Sainz took the title while driving for Driot's team.

"After driving in F2, driving in F1 is not a problem: in fact, driving the F1 car may be easier," he says. "The challenge for a driver stepping up from F2 to F1 is coping with what F1 is, coping with the press, with the power of sponsors, with the electronics, the huge crew and having two engineers to talk to rather than one. It's a big difference, but the best way to prepare for it is to have driven in F2 and know that you are capable of driving the F1 car.

And this, ultimately, is what a junior career is supposed to achieve: once a driver has found a manager, secured a budget and piled success upon success to get to a point where a Formula One team wants them in their car, they need to buckle into that car and hammer out of the garage with the confidence that comes from knowing they've received an effective motor sport education. 4



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Vise heads save live

**VIEW** Tommi Mäkinen Renault

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ALLERIZIST It felt like any other day. Chantheavin, eight, was travelling on the back of her father's motorcycle. The dust from the road swirled around her as they made their way down an unkempt highway. Farmers tended to their crops and factory workers headed to one of the many nearby facilities - agriculture and industry contribute to much of the area's economy. Chantheavin and her family have called this rural region – Kampong Speu Province, Cambodia - home for years. There had recently been an influx in heavy lorry traffic travelling along the same poorlypaved road that Chantheavin and her father regularly drove on, making it dangerous to navigate. Chantheavin's father has been driving a motorcycle for years and is a taxi driver by trade, and he is always cautious when driving along

## (06)WISE JOHN CAMPBELL HEADS SAVE LIVES

Road safety organisations including the FIA FOUNDATION that have campaigned for greater helmet use in Cambodia to reduce fatalities are now seeing the fruits of their labour

these roads. Navigating bumps and debris was no simple feat. But on that day, Chantheavin's father did not realise there was a pothole in his path. As his motorcycle tyre hit the rut, he lost control of his vehicle and crashed into the side of the road. "In that moment, I didn't care about anything except that my daughter was going to be okay," her father savs

"The crash happened so fast. Before I could realise what was going on, I had flown from my dad's motorcycle and everything hurt," recalls Chantheavin. She had legs, knee and back injuries. But thanks to her helmet, she suffered no head injuries and survived the potentially fatal incident.

In Cambodia, this story is not unique - a motorcycle is often the family vehicle. Motorised two- and three-wheelers account for more than 80 per cent of all vehicles in the country. Whether they're commuting to school or work, or visiting family in the countryside, people of all ages hop on two-wheelers daily, making them some of the world's most at-risk road users. Every day in Cambodia, six lives are lost and 15 more people are seriously injured in crashes. Contrary to the popular idea that infectious diseases and unexploded ordnance pose the greatest threats

to Cambodians, there are 30 times more road crash-related deaths than those caused by malaria, dengue fever and landmines combined. Helmets are just one of the many tools that can save lives. During a road crash, wearing one reduces the risk of death by 42 per cent and serious injury by 69 per cent. Despite the widespread use of motorcycles, however, helmetwearing rates for both adults and children have historically remained low in Cambodia. And law enforcement efforts have been inadequate - until 2015, there was no law requiring motorcycle passengers to wear helmets. In recent years, international and domestic players have teamed up to fight this deadly reality.

of experience in the industry.

Head Safe, Helmet On aimed to increase passenger helmet use in Cambodia through three components: school-based programmes, mass-media communications and an advocacy campaign. From 2014-16, the programme served more than 14 million people nationwide. "Our aim has always been to empower

helmet usage.

#### SPREADING THE MESSAGE

The AIP Foundation and FIA Foundation have been working together to increase helmet use in Cambodia since 2009. Head Safe, Helmet On built upon this experience and pushed the boundaries of previous road safety work. The programme's school-based activities educated



#### **COLLABORATING TO SAVE LIVES**

Chantheavin received the motorcycle helmet that protected her during her crash as part of the AIP Foundation's Head Safe, Helmet On programme, which was supported by USAID-Development Innovation Ventures, the FIA Foundation and other partners. The Cambodian government was also involved in the initiative. AIP Foundation is a road safety non-profit organisation with 17 years

people with the tools and knowledge necessary to make Cambodia's roads safe," says Pagna Kim, Cambodia Country Director at the AIP Foundation, "As an NGO, we're not responsible for enforcement and we cannot be everywhere at once. We trust that over time, communities can take ownership and affect change."

The programme was launched in June 2014 Long-term advocacy efforts led by the AIP Foundation came to fruition in January 2015 with the passing of a mandatory passenger helmet law. Enforcement of the legislation. which required that passengers wear helmets for the first time, commenced in January 2016. From 2014-16, adult passenger helmet wearing rates in the programme's three target provinces increased from 11 to 36 per cent. It's estimated that throughout Head Safe, Helmet On's implementation, 349 crash-related casualties were prevented and more than \$3 million USD in losses were avoided in these regions thanks to increases in both adult driver and passenger

#### "Our aim has always been to empower people with the tools and knowledge necessary to make Cambodia's roads safe"

PAGNA KIM AIP FOUNDATION

students and teachers from 18 schools about road safety while providing them with quality helmets. At least 332 of these students have been protected from potential head injuries.

The campaign also harnessed the power of the media to raise awareness about the new law. Billboards and TV adverts featuring culturally relevant characters were shown nationwide. Nearly 300 outdoor ads were installed around the country, and the message was broadcast on radio and television hundreds of times. The adverts were viewed more than four million times online.

Though education and mass-media activities reached millions, the AIP Foundation knew it needed to build a strong road safety culture among public sector players. The programme engaged with 2.660 government stakeholders and worked with traffic police to enhance enforcement efforts. At a local level, it established community working groups that empowered everyday leaders to develop their own initiatives.

Communities have already picked up the baton. Instead of issuing fines to offenders. police officers in Kandal Province recently started selling helmets to them. In the initiative's first day. 70 helmets were sold and the government may expand this tactic to other regions.



#### A foundation for life

For more than 17 years, the AIP Foundation has been a leader in community programmes and on the global road safety stage

Greig Craft moved from the United States to Vietnam more than 20 years ago. One of the first things he noticed about the south-east Asian country was its intense motorcycle traffic, yet critically low helmet-wearing rates. Craft decided to take action. In 1999. he founded the AIP Foundation. "Increasing access to quality helmets felt like the logical first step in saving lives on Vietnam's roads," says Craft. "We have grown exponentially since launching our initial activities, constantly adapting to new community needs."

The AIP Foundation has worked in partnership with local governments and communities to prevent road fatalities and injuries in low to middle-income countries. It currently has offices and representatives in Cambodia, China, Thailand and Vietnam

Throughout its nearly two-decades long history, the AIP Foundation has been heavily involved with advocacy efforts to pass and enforce mandatory helmet laws in Vietnam and Cambodia. It has also led school-based programmes. mass-media campaigns and other life-saving activities with global partners ranging from multi-nationa corporations to international aid organisations. In 2001, it launched Protec, a social enterprise helmet factory based in Hanoi, Vietnam. The non-profit organisation has ambitious plans for the coming years AIP Foundation will continue to tackle helmet and pedestrian safety, while also expanding its efforts to teach driving skills and implement anti-speeding initiatives. This year, it will also launch activities in Myanmar, while continuing robust programmes in its current bases.

The Head Safe, Helmet Or programme has promoted helmet use in Cambodia where motorcycles are often the family transport





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#### **COLLISION COSTS**

The economic effects of road accidents can be devastating. They cost some countries between three to six per cent of their annual GDPs and they disproportionately occur in developing countries. In 2013, the government estimated that road accidents caused Cambodia to lose more than \$330 million USD.

Ros Sonat, a 34-year-old mother of three from Phnom Penh, was involved in a crash while driving her children to school in February. She was crossing a major thoroughfare in the city when another motorcycle crashed into hers. Though her children were safe and her head was protected by a helmet, she suffered other injuries that cost her around \$400 USD in medical bills - that's nearly equivalent to a family's average monthly income in an urban area of Cambodia.

Ros's family has felt the weight of road accidents more than many. Her husband, who worked for years at the Royal Academy of Cambodia, was seriously injured in a car crash while on a business trip in 2014. He is permanently disabled from the incident. Now, he is no longer capable of working and his medical needs place significant burdens on his family.

Head Safe, Helmet On has empowered communities in Cambodia to be safe road users, yet Ros and her family's story highlights the abundance of work left to be done.

#### **KEEPING CHILDREN SAFE**

Young people like Chantheavin and Ros's children are involved in road accidents all too frequently in Cambodia. Worldwide, road crashes are the second leading cause of death for five to 14-yearolds. In Cambodia, 99 per cent of children killed on the roads are not wearing helmets. Though it's mandatory for children aged three and over, there is no decree that requires fining someone if their child is not wearing a helmet. With no penalty, it's virtually impossible to enforce the law.

Chantheavin's father is one parent whose personal experience has made him a child helmet advocate. Both he and his daughter have spoken extensively to their community about how something too often overlooked – a helmet – saved Chantheavin's life. The AIP Foundation and its partners are devising future plans to improve child helmet compliance using lessons learned from its work in Cambodia, as well as similar initiatives in Thailand and Vietnam.

"We have been working on road safety initiatives in Asia and Africa for 17 years, which allows us to apply our best practices across a range of cultures," says Mirjam Sidik, CEO of the AIP Foundation. "Head Safe, Helmet On stands as one of our most memorable programmes because it's a testament to the power of cross-sector cooperation and community empowerment. We're proud of our achievements, yet we know our work has only just begun."







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The road less travelled

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# THE ROAD LESS TRAVELLED





With sales of SUVs booming, the world of cross country rallying is experiencing a surge in interest and participation. But what does the future hold for motor sport's most gruelling test of endurance – and is there room to incorporate its most famous event into a global cup competition? AUTO investigates...

There's an important anniversary taking place this year – in the world of dust and desert at least – because 2017 marks the 25th anniversary of the first FIA Cross-Country Rally World Cup season. Pierre Lartigue was the first winner in 1993, with Citroën, and the reigning champion from last year is Nasser Al-Attiyah with Toyota, but here's a surprising fact: Stéphane Peterhansel, widely acknowledged as the king of off-road thanks to his 13 Dakar wins on both two and four wheels, has never won it. Conversely, the Dakar is the one event everyone's heard of when it comes to off-road rallying, right up there with the Indy 500 or Monaco Grand Prix.

That fact is at the heart of a small identity crisis that's now thankfully on its way to being solved. Namely: does the Cross-Country Rally World Cup need the Dakar in its ranks to have a higher profile on the world motor sport stage? Or can the two events co-exist independently? First, some background. Despite being held more than 10,000 kilometres away, the Dakar has a lot in common with Le Mans. Both are fiercely French and widely regarded as the jewels in their respective crowns, and for long years both stood apart from the major series of their discipline.

Until recently, that is. Le Mans has now joined the FIA World Endurance Championship, counting for double points, in a move seen as a homecoming by drivers, teams and fans. So, can Dakar adopt the same model? Well, the situation is a little more complicated...

The FIA Cross-Country Rally World Cup consists of Baja-style events and longer cross country rallies (drivers must participate in at least one Baja – worth 30 pts – and one cross country event – worth 60 pts – to be eligible for the series). These events are classified into three categories: Cross-Country Rally, Cross-Country Marathon Rally and Cross-Country Baja.

Cyril Despres, competing here in the 2016 Cross-Country Rally World Cup in Morocco, forms part of Peugeot's 'dream team'.







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Currently, they take place all over Europe and the Middle East plus one event in Africa, the Rallye du Maroc, which has become the most important event in the series without really trying, as frequently teams use it as a warm-up for the Dakar.

While the Dakar hasn't taken place in Africa since 2007. Maroc is held at the right time of year. with enough similar terrain to make it a valid test. The effect in terms of entries and media following is notable - a veritable circus showed up for Sébastien Loeb's cross country debut there two vears ago, for example.

And here's the other thing: the most highprofile team involved in Cross-Country, Peugeot, isn't actually doing the championship - or cup, to be technically accurate. Loeb of course forms part of what Peugeot calls its 'dream team', alongside Peterhansel, Carlos Sainz and Cyril Despres.

Instead, the FIA Cross-Country Rally World Cup's leading permanent factory team is X Raid MINI, although Toyota also has something close to a factory entry, especially since the arrival of Al-Attivah, and the Japanese squad's commitment is set to increase in the future. All these teams have different agendas and priorities, and that's the key reason behind the divide. What they are all open to, though, is greater unity and competition.

Peugeot Sport team principal Bruno Famin, who headed up the company's return to cross country rallying, firstly with the 2008 DKR and then with the 3008 DKR, is very clear as to why Peugeot decided to come back to an arena it previously dominated - and why precisely it chose the events that it did.

Since returning, Peugeot has bypassed the full cross country series entirely and instead gone for a bespoke programme of rallies to suit its targeted objectives.

"As far as we're concerned there are three main benefits to our participation," he says. "Firstly, Peugeot has been introducing a range of SUVs recently, which are very important for the company, and off-road racing is the perfect way to promote them, both from a performance and lifestyle point of view. Secondly, the geographical spread of events we have chosen, including territories such as Russia. China and South

Toyota's Jean-Marc Fortin says privateers are important to the future of Cross-Country as well as the factory teams



X Raid MINI crew Stephan Schott and Andreas Schulz on testing terrain in this year's Abu Dhabi Desert Challenge



America, are key markets for us, so a perfect opportunity to showcase the cars in competition. Finally, Cross-Country sends out a message of strength and robustness, which is what we are trying to convey with these cars."

For Peugeot, the aesthetic is a key consideration: the cars have been designed not only for performance but also to look outlandishly futuristic, involving input from the Peugeot design studio, which normally specialises in concept cars. The result is a glimpse into the future, in the middle of the desert.

But ultimately, any factory motor sport programme has to pay for itself, and it's those key commercial territories that have driven Peugeot towards events such as the Dakar – there's no South American round in the Cross-Country Cup - and China, the destination of the Silk Way Rally. This is an event that's even longer and tougher than the Dakar, taking competitors from Russia all the way to Beijing through nearly three weeks in July. Now that the name 'Dakar Rally' no longer has any strict geographical ties to Africa, it's also been

considered as a potential venue for the Dakar event in the future, if an attractive enough sponsorship package comes together.

#### **PIVOTAL POINTS**

What Peugeot, and a number of other manufacturers considering Cross-Country Cup participation in the future, would like to see is the idea of having maybe just five endurance rallies across five continents - including the Dakar and Silk Way Rally - as well as other events in Europe and Asia. "That's the sort of championship I dream about," says Famin, "although it's based on business sense.

This 'five-five' idea, as it's informally known, is not a new one: in fact, it was first discussed back in the 1980s. But what it doesn't accommodate is the scope for the Baja-style events, which are important to the privateer teams as well.

Jean-Marc Fortin, formerly François Duval's co-driver in the World Rally Championship, now heads up the Overdrive team, which runs Toyota's

partner Andrea Mayer on last year's Italian Baja in their Yamaha YXZ 1000 buggy.





**Bruno Famin** pictured with Sébastien Loeb says the Cross Country Cup is a strong showcase for Peugeot's SUV range - although it only competes in specific territories at the moment.

#### "Peugeot has been introducing a range of SUVs and off-road racing is the perfect way to promote them"

factory effort in off-road rallying with quite a few private customers as well.

"It's important to keep a balance," he says. "The series relies a lot on privateers who are often at a very good level, fighting for a top five, but you can't ask them to compete on very many rallies all the time as they have other commitments with business. Perhaps seven is the ideal number."

At the moment, there are 11 rounds in 2017. But as well as the actual shape of the events, there's another big debate as to which types of car should be on them in the future, with forthcoming technical rules still under discussion by the relevant commissions.

Toyota comes to Cross-Country with a different perspective: a buggy based on a pick-up rather than an SUV (the Hilux being perhaps the most famous pick-up in the world, as even a casual

Stéphane Peterhansel and

glance at world news always reveals) and a petrol rather than a diesel engine

It's this latter point that has attracted the most discussion. Diesel has been in the headlines for the wrong reasons in recent times and many manufacturers have been keen to distance themselves from what's coming to be perceived as a polluting fuel.

"I think diesel in motor sport is something that belongs in the past now," says Fortin. "With Audi withdrawing from Le Mans, that was probably the last major motor sport campaign we saw using diesel; what else is left now?"

Famin sees it differently, as anyone who has made a success out of the current rules would. It's worth noting that Peugeot has been at the forefront of the Cross-Country Rally World Cup this year (as well as taking the first three places on the Dakar) thanks to the private PH Sport team and Sheikh Khalid Al-Qassimi, who also competes in the WRC

"What we're promoting is the turbo technology behind the diesel, not diesel itself," says Famin. 'Our choices were made from a purely technical standpoint, enabling us to run the turbo technology that is best suited to the Dakar with its high altitudes. If one day the rules shifted to petrol turbo we would look at that; the only thing I'd say is that we mustn't forget why this sort of engine was banned from the Dakar in the first place."



He makes a sobering point, because with around 400 litres of fuel on board, there have been some fiery accidents in the past that have come at a heavy price.

"As a former co-driver myself, I don't think the combination of a turbo and that quantity of petrol works," points out Fortin. "On a WRC car it's OK, as you're dealing with a much smaller tank and a different environment, but in Cross-Country I prefer the normally-aspirated solution with no turbo."

It could, of course, be argued that large capacity normally-aspirated engines are about as future-proof as diesel when it comes to everyday road use, but it comes down, as always, to what people want the Cross-Country championship to be in the future. Petrol or diesel? Four-wheel drive or two-wheel drive? Dakar or no Dakar? There are some important decisions ahead.

Realistically, a championship involving the Dakar is still a long way off due to the logistical and negotiating hurdles that need to be overcome. But the creation of a proper world Cross Country championship, with an emphasis on endurance rather than Baja, is a realistic prospect: perhaps as soon as next year. The other priority is the appointment of a dedicated promoter - which has been lacking so far - to help spread the word and increase the show.

At that point, there's likely to be the standardisation of a certain number of technical rules, prompting the Dakar Rally (run by ASO, the same organising body as the Tour de France) to decide whether to follow suit or go their own way. And this will be a pivotal moment, similar to the one faced by Le Mans not so long ago.

What everyone agrees on is the fact that an enormous opportunity now presents itself. The SUV and off-road sector has been one of the strongest performing areas in the global market place, prompting even prestige manufacturers such as Bentley, Jaguar and Maserati – to name but three - to launch new models in this category despite no previous tradition in this area. Perhaps they were inspired by the fact that Porsche's Cayenne has been the most profitable individual model in the history of the company - and don't forget that Porsche has got a huge reputation in off-road rallying. Get it right, and there's a chance that factory or semi-works programmes could arise from even the most unexpected directions. Because perhaps more than any other championship in the global portfolio, Cross-Country really does sell dreams: a quarter of a century now of adventure, endurance, the open road and the most stunning landscapes on the planet. Who wouldn't want to be a part of that? •



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**AUTO ASKS** The Big **FRONT** Gallery

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READS



Powering peak performance ohan Blake #3500 Lives

**REAR** Tommi Mäkinen Renault Alpine A110

INSIDE THE FIA Welcome to club world Here to road

**FINAL** LAP Derek Daly

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# POWERING PEAK PERFORMANCE

**REPORT** Drive to





Bred to excel on track and tuned to appeal to the public, the automotive industry's high-performance divisions aren't just exercises in excess - they're a hi-tech hotbed of innovation and a calling card for corporate growth

> Some might argue that high-performance road car divisions are ego-driven indulgences out of step with eco-conscious times. Yet these semi-autonomous businesses are driving the growth and profitability of most premium and many mainstream car makers like never before. In some cases, they transfer technology from closely-related motor sport programmes, which subsequently trickles down to improve the efficiency of mainstream models.

> Take Mercedes-AMG. Celebrating 50 years in 2017, AMG has its roots in competition - the 300 SEL 6.8 placed second at the 1971 Spa 24 Hours - and later applied its expertise to Mercedes road car tuning. The collaboration with Mercedes began in 1990, leading to the C36 AMG production car. Mercedes acquired AMG outright in 2005.

> Today, Mercedes-AMG is as synonymous with Formula One as powerful road cars, a relationship the product planners and marketing experts are keen to exploit. When Mercedes launched its latest F1 car, the W08 EQ Power+, it coincided with the introduction of the 'EQ Power+' sub-brand, set to feature across future hybridised Mercedes-AMG models; the closely related 'EQ Power', meanwhile, will debut on models such as the plug-in hybrid Mercedes S-class produced outside AMG. With Mercedes broadcasting the W08's Silverstone launch live to a social media following of 14 million people, the potential to convert motor sport fans into road car buyers was clear.

Dodge is famed for its muscle cars, so its SRT division takes things to the next level - the new Dodge Challenger SRT Demon boasts 840bhp and goes from 0-60mph in 2.3 seconds



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Powering peak performance ohan Blake, #3500 Live

Polestar Performance

but also races them in

the WTCC through its Cyan Racing team.

markets Volvo road cars

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Mercedes-AMG's core range is still based around '63'-badged V8 models adapted from existing platforms, but AMG has diversified, with increasing availability of all-wheel drive, powerful fourcylinder engines and a new six-cylinder '43' range. There are over 50 models, from hot hatchbacks to

V12 limousines, V8 SUVs, even the bespoke AMG GT sports car. Soon, AMG's 'Project One' hyper-car will offer an F1-derived hybrid powertrain, the ultimate race-to-road technology transfer. This rapid expansion combined with F1

domination helped the Affalterbach-based company sell 99,235 vehicles in 2016, more than tripling growth since 2013 and helping Mercedes to beat both BMW and Audi with a record 2,083,888 sales. Not bad for 1500 employees.

#### **MUTUAL BENEFITS**

Consumer appetite for such high-powered models underlines the value of performance divisions to manufacturers, even those not traditionally associated with performance.

Polestar Performance has a two-decade history of racing Volvos and was bought by Volvo in 2015. Today, it retains much of its independence while benefiting from closer cooperation with the company's R&D facilities. The racing division, Cyan Racing, was not part of the deal but remains a key partner: Cyan Racing runs the WTCC Volvo S60s.

Starting with a limited run of 100 cars in Australia, Polestar now markets the S60 and V60 Polestar. With around 250 modifications to cosmetics, engine and chassis, these cars produce 367bhp, almost double the next most powerful versions. It hopes to sell 1500 cars a year; Polestar 'optimisation' packages, with sportier recalibration of engine and transmission software for mainstream production Volvos, are popular, with 130,000 upgrades installed globally since 2009. "One of the factors for competing in the

premium segment is some sort of performance car offering, as well as credible experience of racing," explains Duncan Forrester. Polestar's head of PR and communications. "A significant factor behind the purchase of Polestar was that with Volvo's history and well-known product portfolio, there wasn't much room for a credible performance offering. Volvo doesn't need to incorporate Polestar into its existing portfolio, where it's challenging to understand the fit, but within a separate brand that's synonymous with building sports cars, as well as a world-class racing team."

Vice-president of R&D Henrik Fries joined Polestar in 2009 when the company launched its first road car, the C30 Polestar. He sees the relationship between high performance and Volvo's safety-first DNA as complementary.

"There's no contradiction because racing is about safety and performance," he says. "With the road cars we try to improve driver feedback so you can be confident when pushing. The people at Volvo enjoy working with us, they bring us ideas and use Polestar as a chance to research them." Thanks to Volvo's World Touring Car

programme, motor sport has provided a direct link



between the race track and road car development: both for bread-and-butter Volvos and high-performance Polestar derivatives. Fries cites Volvo allocating Polestar only the secondever engine produced in its new four-cylinder era. The punishing track environment allowed Polestar to auickly solve cooling issues and deliver high performance reliably. At the same time, the hardware that proved so effective at reducing emissions has continued to prove valuable in its motor sport and Polestar road car applications.

"We are the only team not using blueprinted engines because we have roller bearings on the camshafts, con-rods and main bearings. They are low friction, which helps fuel efficiency and emissions for a road car, but also develops more power for racing and the Polestar road car."

When the WTCC team's engine developer transferred to Volvo's own powertrain department. the virtuous circle became complete.

Like Polestar, Fiat seized the chance to acquire a high-performance brand long associated with its products. Carlo Abarth founded Abarth in 1949 and the brand remains synonymous with Fiat: Walter Röhrl driving the Fiat 131 Abarth to the 1980 World Rally Championship is a notable example.

Fiat bought out Abarth in 2007 and 80 people now work on race cars and the street-legal cars they're based on at its Mirafiori Italian HQ.

Recently, Abarth attracted interest with the Fiat 124-based Abarth 124 Spider rally car. Picking up where the Abarth 124 left off at the 1976 Monte Carlo rally, the two-seat convertible sports car contested the R-Gt class on the 2017 WRC event.

"Abarth is one of the few brands constantly involved in motor sport," says Maurizio Consalvo, head of technical development. "For us, racing is more than a marketing tool, it's our engineering university. Our values are linked with the meaning of competition: performance, craftsmanship and technical upgrades."

#### "The people at Volvo enjoy working with us, they bring us ideas and use Polestar to research them"

HENRIK ERIES POLESTAR



Consalvo cites Abarth's involvement from the very earliest stages of Fiat 124 Spider development as evidence of the mutually beneficial relationship between Abarth road and competition cars, and mainstream Fiat products

Like AMG. Abarth sales have more than tripled. from 7700 units in 2013 to 20,400 in 2016. In EMEA markets (Europe, Middle East, Africa), Abarth models represent approximately 15 per cent of Fiat 500 sales, with the split said to be significantly higher on 124 Spider derivatives.

"The mission of a premium brand is to increase the average margin and ensure profitability for both the company and the commercial network, and this is something we are fully exploiting through Abarth," says Consalvo.

Abarth's pricing structure clearly illustrates its potential to generate additional revenue. The most expensive Abarth 124 Spider retails for £31,920 in the UK, a near £5000 premium over the rangetopping Fiat 124 Spider. The Fiat 500 goes from £11,320 to £21,000, but Abarth's 500 and 500-based 595 and 695 models span £15,260 to £36,691, with limited-slip differentials shared with race cars and, in the case of the 695, a dog-ring 'box, which Consalvo claims is the only example of a road car homologated with a race-spec gearbox. The benefits of racing endeavours such as the

Abarth Selenia Trophy are harder to quantify but equally important, he says, "Motor sport is part of our history and the most effective brandawareness generator because this connects with a large, passionate community."

Dodge's Street & Racing Technology brand is a distant US cousin of Abarth, since Fiat's 2009



Mercedes-AMG has long been renowned for high-performance road cars but is now benefiting from close links to and the success of the F1 team.

Abarth has helped to

boost car sales for Fiat

thanks to its upgrades

ased on the 500 model.



Chas Seymour, FCA Car Performance Brands "SRT is positioned as the ultimate performance halo of the Dodge brand."



Maurizio Consalvo, head of technical development Abarth: "Racing is more than a marketing tool, it's our engineering university

acquisition of a majority stake in parent company Chrysler. SRT has a very different brief, however, partly because the Dodge portfolio already includes performance-focused muscle cars.

"Dodge is the mainstream performance brand and SRT is positioned as the ultimate performance halo of the Dodge brand," explains Chad Seymour, manager of FCA Passenger Car Performance Brands. "Although such performance cars are sold in smaller quantities, they do broaden reach and ignite interest. The new Dodge Challenger SRT Demon is a perfect example of how a highperformance car can tattoo the Dodge brand into the subconscious of the general market."

Hence SRT takes the role of high-performance division to the extreme, playing on its association



Ford Performance boss Dave Pericak oversees the car maker's recently streamlined high performance division



Henrik Fries, Polestar vice president of R&D, savs its motor sport endeavou have directly benefited the car manufacturer.

with NHRA drag racing and producing muscle cars with 485bhp minimum, sometimes hundreds more.

Tracing its origins back to Dodge Viper development, the SRT badge was introduced with the 2004 SRT4 Neon. The range now includes nine Charger, Challenger and Viper SRT derivatives.

With SRT buyers typically having twice the household income of other Dodge customers, the benefits for FCA's bottom line are clear. Sales have increased by 75 per cent with sustained year-onyear growth over 13 years, and jumped 80 per cent between 2014-15 with the introduction of the 707bhp Challenger and Charger SRT Hellcat.

This year, the Challenger SRT Demon takes the next step - an 840bhp muscle car that can sprint from 0-60mph in just 2.3 seconds and cover the quarter mile in a staggering nine seconds.

But perhaps the most extreme recent example of the relationship between a manufacturer's motor sport programme, its high-performance division and wider mainstream applications comes from SRT rival Ford Performance. "Three years ago, we took SVT [Ford's US-based highperformance division]. Team RS [the European division] and our parts and accessories business and put it into one organisation, called Ford Performance," says Ford Performance boss Dave Pericak. "It allowed us to transfer technology and knowledge, and accelerate development."

Ford Performance recently launched the Ford GT. Designed first as a race car to win the LM GTE class at Le Mans in 2016 - which it did - 50 years after the GT40's 1-2-3 in 1966, the planned 1000 road-going supercars are barely disguised racers.

Both are built around a lightweight carbonfibre tub with an integrated rollcage and produced at Canadian engineering firm Multimatic. The technology transfer goes both ways: 60 per cent of the GT's Ecoboost V6 engine is shared with the Ford Raptor truck, and the GT has allowed Ford to explore the wider application of carbonfibre.

"Processing carbonfibre is very expensive, so we're working on a new process and looking at how to reduce the cost of the raw material for high-volume applications," reveals Pericak.

Who knows, maybe we'll see some of the GT's race-winning technology filter into the next Focus. Far from being an irrelevant indulgence, it seems high-performance divisions are key for car makers in driving awareness, profitability and technology transfer from race to road cars. Their success doesn't look like slowing down any time soon. •



**DRIVING BIG Charles**  TECH<br/>REPORTTHE<br/>REALDrive to<br/>start-upsChase<br/>Lewis

#### G AUT FOC

Cities in motion Roads to recovery Paths to glory Wise heads save lives The road less travelled Powering peak performanc Carlos Tavares interview Yohan Blake. #3500 Lives **REAR VIEW** Tommi Mäkinen Renault

INSIDE THE FIA Welcome to club world Ket to club world Ket to race to road history

**FINAL** LAP Derek Daly

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# **OB**</

In three years, *Carlos Tavares* has taken France's largest car maker from a firm with heavy losses to one that made a \$1.3bn profit in 2016. Now, with the purchase of Opel, the former Nissan boss is taking on an even bigger challenge: making PSA Group a world player. And it's all being done through the filter of a passion for competition





TEXT

#### One of your great passions is motor sport, so where does that passion come from?

"It all started when I was a teenager. My first visit to Estoril was in 1972 and I was infected with this disease called motor sport. It was at the beginning of track days and circuits needed stewards to ensure safety. It was a great opportunity to see passionate people trying to control a car on a beautiful race track. There were Datsun 1200s, Mini Coopers, VW Beetles – normal production cars. It was the beginning of my passion for motor sport. I was a biker, reading magazines, going to special stages of the Rally de Portugal. I also went to the start of the concentration leg for Rallye Monte-Carlo, so I remember seeing Porsches in Lisbon. All this fuelled my passion for motor sport at a very important moment in life."

#### You eventually began to compete yourself. When did you start racing?

"In 1980, in a small seaside resort near Porto, driving an Alfa Romeo Alfasud with an anti-roll bar that I had welded into the car myself. It was very exciting. I then entered rallies in the European championship with many different cars. I did five rallies a year on average and I used to take five full days for the recce, passing each special stage five times. "Because of time constraints, when I started to have more responsibilities in my automotive life, I started racing on tracks. It was focused on weekends and I didn't have to practice on all the special stages of a rally."

#### In your current role, you're overseeing PSA's DS brand in the Formula E championship. How satisfied are you about its presence the series?

- "Whatever motor sport activity you choose, you need to be persistent in the way you invest your money or the energy of your people. Nothing happens overnight.
- "For a premium brand such as DS, we need to appeal to people with a certain level of wealth who are living downtown and, generally speaking, don't go to the paddocks of traditional circuits. So, having the Formula E show downtown appeals, as it is crucial to our potential customers. It brings more awareness; it was the original plan."

#### What about the technological aspect of it: how relevant is an arena such as Formula E for your road car programmes?

- "With a premium brand, we need to have significant technological strength. All the new-generation DS cars will be electrified, so it perfectly matches the technological direction in which we are moving.
- "It also gives the possibility to learn more things about how to monitor and control energy, which is a crucial issue for the future. And it allows us to build bridges between racing and production car engineers. These three reasons brought us to the conclusion that we must be present in Formula E.>

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FORCES

REPORT

Carlos Tavares interview

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#### Does your passion for motor sport help you in your everyday life as a CEO of the PSA Group?

"There are positives and negatives. It can give you an advantage when talking to your people, the ability to have a better dialogue, especially with people who are passionate about motor sport and also about the product. You have the vocabulary, you have the same emotions because you went through the same events: it gives you a better connection with people. "On the other hand, we need to keep in mind that motor sport is a marketing tool, and L don't want people to think that we have motor sport activities because I like motor sport. Some people may forget that we make rational decisions because we have the responsibility to protect the sustainability of our company. Overall, it is positive, because anything you do in life, if you do it with passion, you have a higher probability of success."

#### Your love of racing extends to how you've approached the redefinition of the group. Is it correct that your first plan to bring the company back to profitability was called Back in the Race and that the current plan for growth is called Push to Pass? Was it difficult to convince your marketing experts?

"It was very easy and quite natural. In fact, when this came up I proposed it and then, on the Push to Pass idea, I took it back. I said: it is the company plan, not my plan. So let us ask a group of people to do their own brainstorming in order to make their own proposals. The ton three proposals came to the Executive Committee and the decision was that none of them was better than Push to Pass. So, we came back to my original proposal."

#### In Push to Pass, one of the central themes is for PSA to become "a preferred mobility services provider worldwide for lifetime customer relationships". What does that mean?

"Our process is simple and can be summarised in one sentence: we are a hi-tech company and we want to make our customers happy.

Keen motor sport fan Tavares was part of OAK Racing's line-up in the European Le Mans Series last year, racing a Ligier JS P3.

"We completely understand that with the current range of electric vehicles our customers would not like to have to stop two or three times to charge their batteries if they want to go from Paris to Marseille or the Côte d'Azur. So, in our portfolio of brands we need pure electric compact cars - urban oriented - and upscale petrol hybrids that must have a greater range, because of the profile of our customers. We will have both because we are not advocates of a specific technology. Our premium customers want to have cars with no range restriction, very fuel efficient and socially acceptable. They may have a second car for urban areas, so a pure EV car."

#### Did you set priorities for the future in your R&D programmes to keep an edge on your rivals?

"You cannot look at the technology edge in only one direction. Consumers buy a car, a mobility device, so they want to have the best technology in a whole package. The Peugeot 308 was Car of the Year 2014, and this year it was the Peugeot 3008. It shows that the technological strength of the PSA Group is there and we work in all directions: safety, driving pleasure, fuel efficiency, telematics, connectivity and autonomous cars.

of having to watch the car in front of you, to brake and accelerate for an hour or two. The autonomous mode will allow you - being completely connected - to do in your car what you can do at home: check your e-mails, have a chat on Skype."

#### Amid the controversy over diesel cars and emissions, what will Peugeot's strategy be in the near future?

"Society is moving from a perception that customers could ask car makers what is the best technology, and then follow their direction to achieve a certain objective. Since we had the Dieselgate scandal, that perception has changed. Cities, governments and administrations are moving from a targetsetting strategy - in terms of clean air for example - to a situation where they want to impose a technology. That is a significant shift in terms of responsibility to select the cleanest technology: it is now in the hands of the regulators.

"In Korea or Japan, the incentive for sales is the same for clean diesel and electric vehicles. In France, it is a completely different picture. That shift in focus allows us to give the customers what they want. We are a very

#### "The move to autonomous vehicles will bring us back quality time with our family, our children, even if we enjoy driving"

"We intend to be on the edge with all of our competitors because consumers want a complete car, a whole package. The core technology will be developed by the PSA Group and then put on the shelf for all brands eager to use it. But in some directions we will give priority to certain brands and other brands will be able to use the same technology one or two years later."

#### How will PSA meet other changes taking place in mobility: increasing connectivity, a move away from diesel, autonomous mobility?

"With regards to connected cars, we have to recognise that the car is going to be an extension of the mobile phone. The move to autonomous vehicles will bring us back quality time with our family, our children, even if we eniov drivina.

"There are moments in the driving experience when you want quality time - on the way back from a good weekend and you are stuck in a traffic jam. At that time, you would prefer your car to be in autonomous mode instead

agile company and we have all the technology available, so we are very comfortable that we will bring it to the consumers."

#### Let's talk about PSA's acquisition of Opel. In February you said: 'There is an opportunity to create a European car champion resulting from the combination of a French company and a German company with a strong UK brand.' How does each of those three elements add value?

"We are going to increase our R&D potential by 50 per cent with the acquisition of Opel. There is great engineering potential for Opel in Rüsselsheim. By the way, before the Peugeot 3008 this year, the previous Car of the Year was the Opel Astra.

"We considered that having a German brand sitting next to French brands made sense. In some markets, customers consider German brands to be better. It also brings 1.2 million more cars that will soon be sharing the PSA Group's platforms. So the volume-scale effect is important for the cost competitiveness of what we are creating for PSA."

potential to unleash





#### How will Opel be positioned within the wider PSA set-up? Is there a desire to take on more premium German competitors, to build on its German heritage and raise its stature?

"No, because we already have DS as a premium brand. The idea is to develop the German side of Opel as a complement to the French side of our three other brands. "Four years ago, our transaction price for Peugeot models was low and now it is at the same level as German models because of the progress we made in quality. No one could imagine this. Our people are now confident about the brand, the design, the performance - and confident that they can propose the same transaction price as our competitors. "Opel will do the same. I will give them freedom to create value through the positioning of the brand. But it is not a premium brand, at least not today."

#### What about the global export of Opel vehicles? Can it break new ground for PSA in markets not previously open to it as part of GM?

"There is no plan for the time being. The turnaround plan for Opel will be made by Opel's executives - even if I share my previous experiences with them and try to guide them. The Opel people have a lot of

"They will propose a plan and we shall examine it. We will give them room and there are lots of markets where Opel is not present, or was limited in its capability to expand. I will take

these limitations out. It all needs to come from the inside, from the thinking and the feelings of the people who are nurturing and proposing the brand to the market. It is in my management strategy not to limit the ambition of our teams because experience shows that you need to unleash the potential, the power that the people have inside."

#### Does Brexit endanger Vauxhall and the company's UK plants?

"Vauxhall is an iconic brand with a long history and having it in the UK is a big asset. We shall continue to nurture the Vauxhall brand to make its workers proud. There is no brand success without a commitment to build on the roots of the company. They will have to use the products that we have in store and I have no intention to limit the creativity and the passion for their brand. This is the engine: the passion of the people. We need to be confident and guide them. And we have to remember that the sustainability of a company depends on the profits it makes."

#### You now have multi-brand outlets for PSA, how is that working out?

"Our strategy on that matter is very simple: we now have multi-brand sites with separate showrooms and entrances, different people, But in the back office there is a common team for accounting and other services, one warehouse for spare parts and sometimes only one workshop.

As it continues to grow, PSA is preparing to launch a new flagship SUV - the DS7 Crossback, which will include autonomous driving features.



"PSA Retail was losing tons of money and is now making a bit of a profit, which means that working on the economic efficiency of these sites makes sense. In the near future, the champions of one brand will be able to take open points of other brands. It will also be open for discussion with Opel."

#### Finally, you have Citroën back in the World Rally Championship with a works team and DS competing in Formula E with Virgin Racing. Will vou return Peugeot to the Le Mans 24 Hours?

"There are two different aspects to this. The first is that motor sport activities are a marketing tool, just like advertising on TV, the internet or in newspapers, so you need to calculate the return. You have to decide where you put your money and compare the efficiency of various marketing tools. "If you look at the impact of Le Mans, which is easy to calculate, you can decide the maximum amount of money you can put in that direction in order to win, knowing that putting an ad on TV is less risky than trying to win Le Mans against the other guys. Then you compare that against the money that the other guys are putting in... and there is a huge discrepancy.

"So, the question is: can you create a technical regulation that creates a better control of inflation on costs to make this marketing tool efficient compared to others? And are the current players willing to reduce the cost of their presence since they also have economical constraints?"

#### What is the second aspect?

"The other side has more to do with ethics. The competition has become so brutal economically, that for certain amounts of money you have a hard time to decide. "I spend a lot of time in the factories and I can see that so many people are trying so hard to make some savings for PSA to be competitive in the automotive world. So, there is one moment when you have to decide whether putting 200 million euros a year into such a motor sport activity is acceptable from an ethical standpoint. Does it make sense: can we support it inside our company?

"When a company is in trouble, such as PSA was in 2012 or VW recently, what do they do? First they cut motor sport, even if the amount of money is small, compared to the billions of euros that they need to save. Because it is iconic, it gives people the sense that there is no taboo. The message is that everybody is in the same boat, has to make the same efforts, that no rock cannot be turned around. This ethical dimension cannot be forgotten. This is how we are going to deal with it." •

FORCES

REPORT

**AUTO** #19 Q2

(06)

Yohan Blake, #3500 Lives

**VIEW** Tommi Mäkinen Renault

INSIDE GRAPH THE FIA GRAPH Welcome to Porsche's club world race to road history

**FINAL** LAP Derek Daly

**P70** 

One of the world's fastest men, track star Yohan Blake, explains why he's using his pace to highlight the dangers of speeding on the roads through the FIA's #3500LIVES campaign – and reveals why his passion is born of personal experience of traffic accidents

# 'Speed, isn't everything'



Track star Yohan Blake is a passionate road safety campaigner after being hit by a bus when he was just 12 years old.

#### The FIA's #3500Lives campaign involves stars from sport, music and film spreading the word about road safety. Why did you decide to lend your support to the campaign?

"I decided to support the campaign when I heard how many lives have been lost and continue to be lost because of road safety issues. This campaign is something I have become very passionate about."

#### According to the OECD, road fatalities in Jamaica in 2015 were the highest for almost six years. What's your own impression of the driving culture in Jamaica? Where do the major problems lie?

"The Jamaican driving culture is a very reckless one. People drive with no consideration for others on the road. I think one of the major problems is with young drivers. Young drivers seem to want to impress their peers, so they speed and drive carelessly."

#### How important is it to get the simple messages featured in this campaign across to people in vour home country?

"It is extremely important to get these messages across. If people see and hear these messages more regularly then they will act. I would like to see these messages on billboards, in schools, on the television and on the radio."

#### Have you had any personal experience of road safety issues and, if so, did it change your behaviour or that of those involved?

"When I was 12 years old I was hit by a bus. That experience made me realise how important it is to be aware of your surroundings when you are driving. Also, pedestrians need to have safe places to walk. Sidewalks and pedestrian crossings need to be provided."

#### The #3500 Lives campaign is a global initiative what do you hope is the outcome?

"I hope in the near future we will hear less about road crashes. I feel too many young people are losing their lives unnecessarily and this can all be avoided."

#### How important is it to have spokespeople such as yourself, motor racing stars Nico Rosberg and Marc Marquez, and pop stars such as Pharrell Williams fronting this campaign? Can you influence behaviour, especially among young people?

"I find that when you have global stars involved the message is definitely more influential. People often look up to and are influenced by global stars. So I feel that having celebrities deliver this message will influence people to be more conscious about how they act on the roads."

#### Your personal message involves obeying the speed limit. Why should people leave speed on the track?

Well, it's both safe and entertaining to speed on the track. I'm happy to use my speed on the track to help save lives. However, on the road it is not safe at all - speed on the road costs lives. Speed isn't everything."

#### If you had to choose another of the campaign messages that's close to your heart, what would it be and why?

"I can't choose any one message. All of them are equally important. Anything can go wrong on the road, so following all these safety suggestions will definitely help to save lives."



#### Spreading the message

The FIA's #3500LIVES campaign can only succeed if its safety messages reach as many people as possible around the world. In partnership with advertising giant JCDecaux, the campaign messages will be displayed on the company's advertising spaces worldwide,

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"Forget everything – just drive the car"

#### $(\overline{07})$

Four world titles, 24 wins, 45 podiums and now the mastermind behind Toyota's latest FIA WORLD RALLY CHAMPIONSHIP adventure, Tommi Mäkinen is a legend of the big stages. Not bad for a farm boy who, after three decades in the sport, still believes that "If a driver wants to win, they have to give their maximum effort all of the time"

техт DAVID EVANS

PHOTOGRAPH ANDRÉ LAVADINHO Rally Sweden, February 2017. One stage remains and Toyota driver Jari-Matti Latvala is sitting on a 9.4-second lead. But he looks like he might be having a wobble. Enter Tommi Mäkinen.

The senior of the two Finns made his name, his career and his four World Rally Championship titles out of situations just like this. Mäkinen wasn't a man for second place. Of the 139 world rallies he started, he ended just five as runner-up. He won 24.

A final-stage charge was trademark Tommi. And now, as team principal of Toyota Gazoo Racing, he's ready to impart some of that knowledge to his younger countryman. It works. Latvala wins in fine style and the celebrations are long and loud. So, what did Mäkinen say to get Latvala across the line?

"He told me to forget everything else and just drive the car," shrugs Latvala.

It's a simple enough instruction, but for anybody who knows Jari-Matti, a driver with an in-built tendency to sometimes over-analyse situations, it's a straightforward reduction of issues to the fundamental truths that the Finn occasionally needs most.

As a driver, Mäkinen could cast everything from his mind except the bare essentials needed for attacking the next corner as hard and fast as possible. Tommi was the real deal, a driver worthy of the mantle 'Flying Finn'. He was cut from the same cloth as the likes of Rauno Aaltonen, Hannu Mikkola and Markku Alèn, legends who passed over those roads before him. Victory was everything, second place, defeat, unthinkable.

Now though, his success lies in the hands of Finland's current and next generation: Latvala, Juho Hänninen and Esapekka Lappi – Toyota's 2017 World Rally Championship line-up. Sitting on the sidelines managing is not something that comes easily to Mäkinen. He's hands-on with everything he does and there has been more than one occasion when he's had the look in his eye that ... If only, if only I could get out there and drive the car.

But he doesn't miss driving - at least not the competition. Running Toyota's return to the WRC is what he's about now and, despite a very late start and limited testing last year, he's not making a bad fist of it. A podium on the first round in Monte Carlo was followed by Latvala's victory in Sweden.

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"Rally Sweden was a big moment for me. Waiting before the final stage, I talked a little bit with Jari-Matti and I knew he could do it"

"That was a big moment for me," he says with a smile. "Waiting before the final stage, I talked a little bit with Jari-Matti and I knew he could do it. It had been a lot of hard work from the team to get the car ready and to take a result like this from just the second round was very, very special."

How special? How did that compare with, say, his own first WRC win in Finland in 1994?

There's a typical Tommi pause and the characteristic, "Good question..." Two words he often deploys with great and deliberate emphasis to buy himself more thinking time. Mäkinen's one of the sport's great deliberators, but when the answer arrives, it's always worth listening to. Even if it comes with a word or two more than you might have been expecting.

"Driving was always the big thing for me and that first win was incredible. Nothing is really like the feeling of that first victory – except the first championship. Driving that last stage in 1996 [on Rally Australia] was so special for me: going up the last hill in Bunnings, over the jump, down to the watersplash and turning left to the finish. I never forget this moment. Even now I can still see this in front of the windscreen. I can still feel this time, this moment..."

Three more titles followed, but that first one clearly and understandably made its mark.

Hardly surprising, given that just a couple of years earlier Mäkinen had been close to giving up on the dream he'd had since childhood. Rallying has always meant everything to the farm boy from Puuppola. After struggling through his early career, he looked to have landed a seat at the top table when he was taken on by Nissan to drive the Sunny GTI-R. Unfortunately for him, he lost that job when the Japanese manufacturer grew impatient for results from a programme still in its infancy. A private Lancia pulled in three top-six results in Sweden, Acropolis and Finland in 1993, but the best offer was for a Formula Two Nissan Sunny GTi in the British Rally Championship the year after. Frustration didn't come close. But he

stuck at it and an F2 victory on the Ulster Rally raised a few eyebrows. The mud-splattered, switchback lanes of Northern Ireland are very specific territory and foreigners - particularly first-time Finns - don't come down those roads faster than the locals and regulars. Mäkinen did.

#### **BREAKTHROUGH WIN**

Not long after that, he got a real opportunity: a 1000 Lakes drive alongside François Delecour and Bruno Thirv in the factory Ford team. This was it. Mäkinen knew he had to make this one stick. And he had Ford's full backing with plenty



of pre-event testing and the chance to enter the Mänttä Rally, Finland's traditional loosener ahead of its WRC round.

Mäkinen won, beating Juha Kankkunen. The master defeated and confidence for the pupil couldn't have been higher.

And when Kankkunen went off on the second stage of the main event, the door was kicked wide open for the next generation. Mäkinen didn't need to be asked twice to go through it. He beat



Mäkinen the team boss celebrates Toyota's Rally Sweden with the winning crew of Miikka Anttila and Jari-Matti Latvala.

Mäkinen showed promis

on the 1991 1000 Lakes

Rally, finishing fifth in

a Mazda 323 GTX with

co-driver Seppo Harjann

Didier Auriol by 22 seconds and booked his return to rallying's elite. Those despairing thoughts of knocking it all on the head had gone.

Talking to Tommi now, it's hard to imagine any self-doubt. He's been everywhere and won everything, but when he signed for Mitsubishi in 1995, he still had his moments. When he was beaten by his team-mate Kenneth Eriksson, he quietly asked questions of his own speed. What he needed was reassurance and support. He got just that from the Mitsubishi management. For the first time in the Japanese car giant's history, it committed to a full WRC programme for 1996 and Mäkinen was the undisputed number one driver.

Everything fell into place, allowing the then 31-year-old to move through the gears and start delivering on his dream.

Mäkinen has never forgotten the way Mitsubishi's British-based Ralliart operation was able to put a collective arm around him and it's just that sort of environment he's trying to engender at Tovota todav.

There's one man who has bridged the gap between Tommi the driver and Tommi the team boss: Lasse Lampi. A competent driver in his own right, Lampi was Mitsubishi's chief tester and a real force in Mäkinen's four titles; the pair worked hand-in-hand with Tommi trusting implicitly in whatever Lampi told him.

"We were a small team with Ralliart," Mäkinen says, "with Andrew [Cowan, team principal] and Phil Short, but Lasse was so important for me. He helped to make everything work for me."

And by everything, he meant the various evolutions of Lancer - cars that were never the easiest to drive.

"They were the most difficult cars I ever drove,' he says. "You couldn't lift off in the middle of the corner because you would lose

the drive. You had to be committed to the throttle or the brakes all of the time. There was such a small area where the Mitsubishi worked - but it worked when it was flat-out.'

#### **MASTER OF HIS ART**

Evo IV and V.

"Driving that last stage in 1996 [on Rally Australia] was so special. Even now I can still see this in front of the windscreen. I can still feel this time, this moment..."





Few others in the world have mastered the Mitsubishi Lancer quite like Mäkinen, although Britain's Richard Burns won two WRC rounds in 1998 at the wheel of a Carisma GT-badged

Suggest that Mäkinen made Mitsubishi his own and he smiles. He's not sure, but he's willing to listen to the argument. Then he disagrees. "Cars are designed as cars," he says, "the teams don't design the cars for one driver. Look at this season, the Ford is not [Sébastien] Ogier's car and the Volkswagen wasn't his car last year. Mitsubishi wasn't mine. What I did was work out

how to drive it. That's the key, the smartest guy is the one who figures out what makes that car work and what makes that car go quickly."

Figuring out the Yaris WRC was what 2016 was all about for Mäkinen. He drove mile after mile at rally speed through his native Finland and at test sites around Europe. At the time, plenty wondered about the purpose and what Puuppola's fastest and finest could be gaining from all this wheel time. Surely, it would be better to get somebody younger with more recent experience of World Rally Car engineering in?

Not according to Tommi. He wanted to

Mäkinen started his 1996 season as he meant to go on - with victory in an Evo III in Sweden. He won his first WRC title that year

make sure he knew the car inside out. He wanted to be able to talk to his drivers in the modern-day language of World Rally Cars. The benefit of this paid off when Latvala arrived for his first test in the Yaris late last year.

"We were at the snow test when Jari-Matti drove for the first time," he says. "The set-up of the car was for Juho [Hänninen] and I could see Jari-Matti thinking: 'What can be done? What is it with the car?' Jari-Matti is turning a little more aggressively and he is more on-off [with the throttle and brakes]. I have a similar style to him, but Juho is smoother with the car. We talked and I had a clear idea of what he wanted and what we could do. We made the car more similar like I would drive it, working with the suspension, and straight away this made a step forward for Jari-Matti. That's why it's important for me to understand the car, it makes it so much easier to talk to the drivers and to know what they want and how we can make this happen."

Mäkinen is in a unique position to comment on the tools in the drivers' hands today compared with the hotbed of Group A competition from which he emerged. So, which is the tougher generation?



**ORCES** Charles





The 'Flying Finn's' final year in the WRC was in 2003 when he piloted a Subaru Impreza WRC wwwto two podiums and , fifth in Greece (pictured).



Turn 14 📷

Mäkinen got the tricky Mitsubishi Lancer to work for him by figuring out 'what made it go quickly"

"You have to go time-by-time, you can't really compare, but I don't think the difference is there," he says. "If a driver wants to win, they have to give their maximum effort all of the time - that hasn't changed and it will never change. For me, I was fighting all of the time with Colin [McRae]. We were always flat-out and pushing right to the maximum, but then Marcus Grönholm came along and he was the new fast driver. New drivers are coming all of the time, but they are made the same way."

The difference for Mäkinen these days is that he's ultimately the one responsible for the team's performance. As a driver, there were potential scapegoats, but now, win or lose, it's Tommi who is on the telephone to Japan come Monday morning. Outwardly, he has retained his relaxed ability to deal with that pressure and talks openly about the need for maintaining one of the key ingredients to his success of 20 years ago.

"Team spirit," he says, "this is what we had with Mitsubishi and that's what we need to keep for the success now. We have had success already this season and that's because of the spirit in this team, with every person in the team helping for this feeling."

Sitting talking to Tommi, it's like the last two decades haven't happened. The smile, the laugh and the country boy chat has never



The third of four straight WRC titles came in 1998 aboard an Evo V and includ ed victory in Australia.



"There was such a small area where the Mitsubishi worked - but it worked when it was flat-out"

changed. And neither has the intensity. Talk deeper about things and he leans forward, draws you in and engages with the same deep, wordy explanations.

He's apparently as benign and cheerful as he ever was, but you can rest assured that when the doors to Toyota's on-event command centre shut, the story will be the same as when he engaged first gear in the Lancer. Full focus, complete concentration and no prisoners taken. Deep down, nothing's changed. He remains all about the winning.

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Tommi Mäkinen Renault

Porsche's race to road

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# (07) Summit of achievement

Soon to be reinvented for the 21st century luxury sports car market by Renault, Alpine's iconic A110 – bred to race - was the product of one French garagiste's singular vision. AUTO tracks the rise of a remarkable rally fighter...

техт / USTIN HYNES



When Renault took the covers off the car it hopes will battle Porsche's 718 on forecourts across the world at this year's Geneva Motor Show, the sighs of appreciation and, more importantly, emotional connection provided proof that the French firm had at least got the look and feel of its reborn version of the iconic Alpine A110 sports car right. There, in abundance, were the fluid curves that made the original so understatedly beautiful, a silhouette uninterrupted by ugly wings or extraneous bodywork extensions. At the front were the familiar, round, inset fog lamps and

finally the blue colour so inextricably associated with the original.

Two elements of the launch stood out: the reverence in which the original A110 is still held and the fact that in its bid to take on the big guns of mid-level luxury sports cars such as the 718 and Alfa Romeo's 4C, Renault had only s one choice - to defrost the Alpine name and the famous marque's most storied model, a truly revolutionary car that took its parent company from the realms of boutique manufacturer to the top of the motor racing tree.

Renault's new Alpine A110, designed as a luxury sports car, has echoes of the original rally winner (above).



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The story of the A110 begins with Frenchman Jean Rédélé. Born into a family steeped in motor sport - his father Emile worked as a mechanic for legendary Renault factory Grand Prix driver Ferenc Szisz - Rédélé grew up around cars at the family Renault dealership in Dieppe.

The younger Rédélé completed business and economics studies in Paris during the Second World War. His studies included a stint of work experience at Renault, where he penned a report on working methods that earned him the attention of then-Renault CEO Pierre Dreyfus.

Asked to put his ideas into practice, Rédélé was appointed Renault's official dealer in Dieppe, following in the footsteps of his father. At 24, he was the youngest car dealer in France and by 1950 had decided to take the new Renault 4CV into competition, insisting that "racing is the best way to test production cars and victory is the best sales tool".

#### A DREAM FULFILLED

He began to take his modified 4Cs to international events, including the Mille Miglia, Coupe des Alpes and Liége-Rome-Liége. As his experience grew so did his ambition. Rédélé began to build in more and more modifications including a special five-speed gearbox to replace the original's three-speed 'box. To reduce weight, he approached Italian designer Michelotti and constructed aluminium bodies for his racers. He took them to Le Mans and overseas to compete at Sebring in the early 1950s.



In 1971 the A110 reached new heights, winning the Rallye Automobile de Monte-Carlo with Ove Andersson and David Stone. Alpines were also second and fourth

The Renault Alpine A110 was a natural winner on the world's rally stages.

The garage owner harboured a dream to build his own cars, however, and in 1954 he founded the Société Anonyme des Automobiles Alpine, the name apparently stemming from his success at the Coupe des Alpes.

The first product of Rédélé's Alpine efforts was the A106, an extension of everything Rédélé believed a competition sports car should be.

He teamed up with the Chappe brothers, a firm of coachbuilders based in Saint-Maur outside Paris. The brothers were experts in plastic technologies and fabricated a lightweight fibreglass body reinforced with polyester resin in which to clothe the car.

In 1955, supported by Renault's top brass, the first three models in red, white and blue were presented to the press and to Dreyfus on the forecourt of the Renault Billancourt plant. The A106 quickly found favour with the racing community, winning class honours at the Mille Miglia, the Tour de France and in countless rallies.

In October 1957, the A108 was launched at the Paris Motor Show. Like its predecessor, it was based on Renault components, but now Rédélé had the company's Dauphine to draw upon. And it featured the Dauphine Gordini 845cc engine, which on later models was bored out to give a



The Renault Alpine A110's manufacturer title run in the inaugural WRC started with victory in Monte Carlo for Jean-**Claude Andruet and** Michele 'Biche' Petit.

capacity of 904cc or (subsequently) 998cc. The result was a car that paved the way for the A110, which arrived in 1961.

Following on from the A108, the A110 was updated to use parts from Renault's new R8. Unlike the A108, which was available first as a cabriolet and only later as a coupé, the A110 was available first as a Berlinette and then as a cabriolet.

The most obvious external difference with the A108 coupé was the re-styled rear bodywork. Done to accommodate the A110's larger engine, this change gave the car a more aggressive look. Like the A108, the A110 incorporated a steel backbone chassis and a fibreglass body.

In its original form, the A110 Tour de France Berlinette featured Renault's new five-bearing 956cc four-cylinder engine mated to the R8's four-speed gearbox, followed shortly afterwards by the 1108cc 'Major' unit. Over the course of its production life, which lasted until 1977, a





Jean-Luc Thérier also enjoyed success with the A110 in the 1973 WRC, winning the Acropolis Rally.

Bernard Consten and FIA President and former rally co-drive ean Todt with the now Renault-badged Alpine A110 in 1968

multitude of engine options would follow, mirroring Renault's own development programme with components from the Renault 12 through to the R16 finding their way into the car.

From the outset the A110 was a competition natural with its first win recorded by French driver and later motor sport writer Jose Rosinski on the 1963 Rallye des Lions.

It was during 1967 that the Renault badge first appeared on the A110's nose. By now Rédélé had negotiated a deal whereby Renault would sell and support Alpine through its dealer

#### "It was in 1973 that the place of Alpine and the A110 was indelibly stamped into the annals of rallying legend"

network, and as the relationship deepened the larger manufacturer increased its support, financing Alpine's competition activities and reaping the sales rewards - for Alpine and its own associated models - of the wins that followed. These were built by a host of motor sport greats who all began to flock to the marque including Gérard Larrousse, Jean-Claude Andruet and Jean-Pierre Nicolas in the works team, but also, among others, Bernard Darniche in the privateer ranks.

In 1968, following wins on the Neige et Glace and Rallye de Lorraine for Larrousse, Andruet claimed the French title with four victories during the season. The A110's success on the national stage was repeated in '69 by Jean Vinatier.

In 1970 the Berlinette 1600S was homologated for Group 4, which finally allowed the A110 to fight on almost equal terms with more powerful competitors. Andruet grabbed the opportunity

with both hands and was duly crowned French and European champion.

The successes were notable but there was more to come. On rallying's most famous stage, at Monte Carlo, the A100 excelled in 1971. Top honours went to Ove Andersson, later boss of Toyota's early 2000s Formula One programme, with Alpine team-mate Jean-Luc Thérier second and Andruet fourth. Andersson also won in Italy against massed ranks of Fiats and Lancia and at the Austrian Alpine Rally and the Acropolis Rally.

For 1972 the 1600cc engine was replaced with a more powerful 1800cc unit, and while Andruet dominated the Tour de Corse and numerous other domestic and international wins were racked up, it was in 1973 that the place of Alpine and the A110 was indelibly stamped into the annals of rallying legend.

That year the International Rally Championship was replaced by a new World Rally Championship. Following their recently completed buyout of Alpine, Renault decided to compete in the new competition - which of course survives to this day as the FIA World Rally Championship – with the A110.

Alpine dominated the season-opening Monte Carlo Rally with five official cars finishing in the top six. Andruet, alongside female co-driver Michele 'Biche' Petit, took a famous victory with Andersson second, Nicolas third, Thérier fifth and Jean-Francois Piot sixth.

As Britain's Motor Sport Magazine reported at the time (with sexism in keeping with the age): "The rally was a triumph for the French. Not only did the Alpine team get three of their Alpine-Renault 1800 Berlinettes into first, second and third places, but the winning crew were French, Jean-Claude Andruet and Michele Petit. What is more, the fact that the co-driver was a young girl, and an attractive one at that, appealed all the greater."

In all, the A110 won six of the 13 events on the calendar to hand Alpine-Renault the first WRC manufacturers' crown.

In 1974, Alpine and Renault, having nothing left to prove on the rally stages, began to focus on building prototypes with their sights set on victory at the Le Mans 24 hours.

The A110 began to lag behind and across a '74 campaign restricted to just eight rounds by the worldwide oil crisis, it was Fiat with its Abarth 124 but more potently Lancia with the legendary Stratos that dominated. The Italian firm again ruled in 1975, with Fiat narrowly pipping Alpine-Renault for second place, but it was clear that the A110's time in the limelight was at an end. It was the end of a remarkable era.

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# Making gains in Spain



GAIA PELLICCIOLI

From championing road safety and the rights of motorists, to encouraging the racing champions of the future, Spain's automobile clubs provide a futurefocused support network on the road and track ,



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ORCES

REPORT

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THE FIA

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RACC President Josep

with a focus on future

Mateu is helping the club

move into the 21st century

mobility while maintaining a passion for motor sport

people decide whether they should continue driving or not. In February the club equipped its driving schools with virtual reality systems to enable students to view conflictive driving situations from the safety of the classroom. "The initiative is in line with the RACC's aim to improve safety for young drivers," says Mateu. "Despite a drop in the number of victims in recent years, traffic accidents are still one of the most frequent causes of death in the 15 to 29 age group in Spain." The club is not just involved in all aspects of road use and a passion for motor sport led the RACC to be the first automobile club to simultaneously organise rounds in Formula One, MotoGP, the World Rally Championship and World Rallycross. The Spanish Grand Prix, in which the RACC plays a key role, is an important event for the club and its promotion of motor sport. "It is now 27 years since Spain started to once again host F1, thanks to the Circuit de Barcelona-Catalunva," savs Mateu, "Our club worked from the outset on this goal, encouraging its construction and achieving the dream of providing our country with a strategic infrastructure for motor sport. "We have worked hand-in-hand with all the circuit's stakeholders and we've strived to have the competition recognised for its rigour and good organisation - and we do this



Serving the needs of an increasingly motorised population and dealing with the consequences of increased road use are the two national automobile clubs, the Royal Automobile Club of Catalonia (RACC) and the Royal Automobile Club of Spain (RACE).

In a rapidly changing automotive environment, these clubs are at the forefront of action to develop safer, more sustainable, better connected and more accessible mobility for all road users, led by RACC President Josep Mateu and RACE President Carmelo Sanz de Barros.

Spain also has a rich tradition of motor sport stretching back to 1908, when events were held on roads around the coastal town of Sitges near Barcelona. The first permanent circuit, a 1.2-mile oval known as Sitges Terramor, hosted the 1923 Spanish Grand Prix. More recently the efforts of legendary motor sport figures such as two-time Formula One champion Fernando Alonso and double World Rally Champion Carlos Sainz have boosted that tradition, and a vibrant national motor sport scene is presided over by the Spanish Automobile Federation (RFEDA) and its newly-elected president, Manuel Aviñó.



Being based in a 'smart city' such as Barcelon has helped the RACC to set its sights on the future.

#### **RACC:** looking to the future

ounded in 1906, the Royal Automobile Club of Catalonia (RACC) has 825,000 members and looks after 10 million individuals, all catered for under the club's slogan 'We are here to help'. The club provides personal assistance services (roadside assistance, home assistance, healthcare and legal protection) and insurance products with a portfolio of more than 618,000 policies.

At a time when the future of the car and its role in society is uncertain, the Catalan club's management has a clear vision of how to position the organisation in the face of new mobility challenges. "The RACC's great objective for

the coming years is to consolidate its evolution from a drivers' club to that of a mobility service club", says club President Josep Mateu. "The club has assumed the challenge of developing solutions to meet the new needs of people ever more connected and more interested in combining different means of transport."

With a focus on projects that promote sustainable, integrated systems of transport, the RACC has developed agreements with various transport operators. Together with Esade Creapolis it has launched a carpooling pilot programme for commuters and has also investigated the possibility of investing in mobility start-ups such as Socialcar, the number one Spanish site for car rental between private individuals.

Having its headquarters in a burgeoning 'smart city' such as Barcelona has greatly contributed to the club's involvement in innovative. entrepreneurial and technological mobility. "Our aim is to be based on technology to give more personalised support and get to know our members and clients better, offering them what they need, when they need it," explains Mateu.

"Currently, the RACC's main income is from individuals, in which membership and insurance account for 73 per cent of the total. The remaining income is from assistance to groups and other services to individuals such as travel, mobile telephones, driver training and household services'

However, in a rapidly changing automobile sector, the club has had to adapt to new realities, diversifying and launching new services.

"In the context of the strategic plan the RACC drew up in 2015 for 2016-2020, different lines of action were established to diversify the club's businesses, and particularly the creation of the RACC New Business Lab, with the basic mission of launching new mobility services." says Mateu. "We are convinced that this focus will allow us to enter a broader client segment."

Like other clubs, the RACC is heavily involved in activities and programmes to improve road safety. While Spain has seen a reduction in fatality rates in recent years, with a current level of 3.6 deaths per 100,000 people, there has not been a similar reduction in the number of accidents, which has remained the same since 2013.



In response to this, the club has drawn up a plan to present to the Spanish State's Mobility Commission with 20 measures for 2020 that can be quickly applied and which could make a decisive contribution to the reduction of accidents by 50 per cent on 2010 figures.

"The main risk factors must be reduced and the vehicle fleet must be modernised and made safer." insists Mateu. "But for these measures to be effective, investment in infrastructure maintenance must be restored and quantitative goals must be set to allow circulation on roads with at least three stars according to EuroRAP protocols." It's not just vehicles and

infrastructure that must be tackled, but also education and awareness. As such, the club has implemented road safety initiatives for the elderly - the most at-risk group of road users in Spain. The self-evaluation site. supported by the FIA Road Safety Grant Program, aims to help older



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because a passion for motor sport."

#### The RACC has been a keen supporter of Formula One and the Spanish Grand Prix, based at the Circuit de Barcelona-Catalunya

#### RACE: on the side of motorists

A long economic slump, an ageing population and a fleet of more than 24 million cars: taken together, these three factors explain how Spain has seen a significant reduction in maintenance work on vehicles and a subsequent increase in breakdowns

"With an increase of 54 per cent of our market share over the last four years, we've had to provide for more roadside assistance," says Carmelo Sanz de Barros, President of the Royal Automobile Club of Spain (RACF).

In a country covering 506,030 km<sup>2</sup>, that hasn't always been easy. "One of RACE's main objectives is to provide assistance across the nation," he adds, "We often find partners in places where technical solutions are difficult. It is essential to have the perfect structure of operators, mechanics, repair trucks and - above all - technology."

A current roadside assistance goal is to increase the percentage of repairs done over the phone (with 24/7 coverage) and solve mechanical problems in the shortest possible time. RACE has, over the last decade, provided a high quality of service that, according to Audit Assistance, has made it the country's highestrated club. Its reputation has been boosted by the development of aids such as the RACE SOS App, which allows for the quick and accurate pinpointing of club members in need, or the RIN system (Roadside Intelligent Network) that via smartphone geo-positions vehicles and monitors service. The launch of the RACE 10 fleet – 2,300 vehicles providing on-site repairs – has led to an even more efficient service in over 4,000 Spanish towns and villages.

"Even though we are proud to have high rates of satisfaction, we will not be entirely satisfied until we have the technology to perform the RIN in practically all cases," says Sanz de Barros. "But we also continue to work on preventive care, to locate potential faults before they occur."

Club management is aware, however, that roadside assistance cannot be its sole revenue stream. We concluded that the drivers could best tell us what products and





services they needed," says Sanz de Barros. "Thus RACE Unlimited was born, a concept that brings together automobile and travel, adapting to a new consumer lifestyle.

In 2014, in a desire to gauge driver opinion to further spread the club's road safety message, RACF created the Spanish Observatory of Drivers DUCIT - a database of more than 10,000 motorists.

"Through our research we have become an important source of information for the media and we are now the main channel for transmitting messages that help reduce the number of victims due to traffic accidents," says the president.

Awareness among youngsters about the prevention of accidents linked to certain risk factors (alcohol and drug use, distracted driving)

> "We concluded that the drivers could best tell us what services they needed"

The RACE-Red Bull drivers academy at Jarama and, left. RACE President Carmelo Sanz de Barros

represents an important aspect of the RACE programme. As a result, in 2016 and in collaboration with drinks manufacturer Red Bull, the club created the Drivers' Academy RACE-Red Bull, which has trained more than 500 young drivers.

Based at the Jarama race circuit n Madrid, the academy involves a number of different driving exercises designed to give young people an understanding of the performance of the vehicles under their control.

In addition to being the academy HQ, the Jarama track has a long history as the first permanent speed circuit built in Spain. Modernised in 2012, it is fully owned by RACE.

"For several years we've hosted events such as the Jarama Classic. the GP Truck of Europe and the Jarama Spirit, attracting over 100,000 people a vear," says Sanz de Barros.

In a fluctuating market, he says the future must be focused on members. "[Autonomous, electric, shared and connected vehicles] will change the market but they will not change our members, since they will always need help with travel, home assistance, etc. RACE, as an important leader in our market, will manage this transformation for our partners and customers."



ORCES

**VIEW** Tommi Mäkinen

Promising Spanish talent José Suárez is competing in the new Under 28 category of this year's FIA European Rally Championship

> With a karting title under her belt, Marta García is now in Renault's stable of young drivers and is





contesting Spanish F4



**New RFEDA President** Manuel Aviñó wants to help young Spanish drivers progress to the top of the sport.

#### **RFEDA:** building future champions

For Manuel Aviñó, elected President of the Spanish Automobile Federation (RFEDA) last December after 32 years of Carlos Gracia Fuertes' presidency, the future of motor racing is in competition accessibility, allowing new generations to pursue a clear path towards a career in the sport.

"We're working hard to find a championship that allows the transition from karting to the big circuits as cheaply as possible," explains Aviñó. "We're studying various possibilities and I'm very focused on it becoming a reality for next season."

In a bid to improve access to rallying, RFEDA recently launched the Beca Junior R2, a mixed rally programme with the winner receiving a funded drive in the 2018 FIA European Rally Championship's junior class. There has also been continued support for international karting drivers through the Racing for Spain programme, which helps

them participate in CIK-FIA competitions, and the consolidation of the national F4 championship that will this year feature two new teams, FA Racing and Porteiro.

"In Spain, we have an interesting grassroots landscape at the moment," says Aviñó, "In the first kart championship race in April we had more than 150 drivers, the best participation number in some years. I can only can be positive about the future.

"Recently, a new promoter, RGMMC, has arrived in the Santander Karting Championship and our races now get internationalstandard virtual flags, video streaming and social network promotion," he adds.

A graduate of that championship now poised to take a major step forward is Marta García. Supported by the FIA's Women in Motorsport Commission, García won the CIK-FIA Academy Trophy in 2015 and made her Formula 4 debut last year in three rounds of the Spanish championship. Now 16, her burgeoning talent has led to a place in Renault's stable of young drivers and a full season in the Spanish F4 Championship. "I'm sure she will do her best and she will give us great news for Spanish motor sport," says Aviño.

#### "One of my objectives is to strengthen our marketing department, to attract sponsors"

As well as boosting the careers of young hopefuls such as García, another of Aviño's roles is to help expand the federation.

"We have now issued more than 20.000 licences and we have over 15 national championships," he says. "One of my objectives, since I came to RFEDA, has been to strengthen the marketing department so that we can show sponsors how attractive our sport is.

"Spain is one of the most favoured countries for drivers to practice their sport. They feel comfortable here, supported by Spanish fans, and we have excellent roads and circuits to support any kind of competition.

"I would be very pleased if we could get RFEDA to be considered as a partner, a collaborator for the motor sport community. I'm working hard to make access to our sport easier and cheaper for as many people as possible." •

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**OFF ROAD AREA** 

FINAL LAP the last word

In Derek Daly's latest book. A Champion's Path, the former Williams F1 driver describes the tactics and strategic cultures adopted by worldclass race teams which can be adapted in the wider business

world - and it's clear he feels some dynamic thinking is needed among those shaping the future of F1. A veteran of 49 GP starts between 1978-82 and an FIA Formula One steward for many years, Daly looks forward to a future when drivers can once again express themselves behind the wheel without fear of official censure. The Irish-born, Noblesville Indiana resident who nowadays lectures companies on the business lessons to be learned from motor racing is ready to espouse a return to traditional thinking when it comes to the business of driving and sees only one way that F1 will ever work in the USA.

#### Derek, do you think motor sport is a good incubator for creativity?

Our sport pushes people out to the edges of what might be possible for them and their teams. There is no team of people in our sport that isn't at the outer edges of creativity and innovation that ever wins anything.

#### You have said that, in motor sport, you have to make decisions under pressure and not always with the full information...

Right. Sometimes with limited information, you're still expected to make a decision. And making a decision that's wrong is still better than never making a decision.

#### Do you see examples in motor sport of companies that are not really following that model, that are becoming a little inflexible?

McLaren for years have been super structured, many believe too rigid a structure and not flexible enough. But no doubt Mercedes are super agile. Did you see the car they produced at Barcelona? Virtually a new car after three or four races because they realised they were not quite on the pace they needed to be.

#### In your own racing, which were the really good teams that were capable of reacting and understood what it took to be there?

For me, Williams was the only team that had the ability to react fast enough when needed. Every other F1 team I was with was second level. The Jaguar sports car team were big enough, fast enough and agile enough to do what it took to win races and world titles, and I was lucky to be with them for the long-distance races.

#### What do you think about the state of top-level motor sport at the moment? Where are we?

We're at the most sophisticated level in the sport's history. However, [that] has given us an element of predictability because we no longer have the 'swing for the fences' type of teams or ability of decision making. Everything is regulated and controlled. We have way too many rules in the races and the drivers have too many penalties issued, so the ability for them to race like true gladiators [is] being eroded.

#### Liberty have been talking about more races in the US. Are people interested in Formula One there?

No. they're not. And they never will be until there's a successful American driver. F1 is driven by national pride. It's successful in England because of the succession of world champions.

#### So where is the next US driver coming from?

They need to look at 14 to 16-year-olds, but in Bernie [Ecclestone]'s time he spat them out rather than embraced them. Until they give a iunior driver a fair chance. Liberty will waste their time trying to grow in the US. They can get more races but have to stop this different race date every few years and grow some credibility. If you brought F1 back to Long Beach it'd be huge, but I don't know how you'd do that.

# THE BUSINESS OF RACING

TEXT DECLAN QUIGLEY

#### (10)

Former grand prix driver and respected TV pundit *Derek Daly* draws the parallels between racing innovation and business success - and explains why F1 still needs a US driver if it is to find more fans in America



There is a wide range of elements you can choose from to establish a circuit venue that will meet the specific user and market demands. In any case, you can also develop your circuit in stages and on a modular basis: Make sure you have the right components at the right time and simply grow with the market needs!

# YOUR TRACK - YOUR CHOICE!

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### **RICHARD MILLE** A RACING MACHINE ON THE WRIST

