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ISSUE
#3

AUTO

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Cover image: JAMES CAREY

WORLD IN ACTION

When the richest family in the world speaks, people listen. And when that conversation covers everything from Formula One and the world economy to road safety and infrastructure, you know that these words will lead to action.

In an exclusive interview with Carlos Slim Jr, AUTO finds out what's next on the agenda for the family that currently has motor sport and motoring firmly in their sights.

One of their goals is to help improve road safety in Mexico and this cause is also being promoted around the world by a new campaign from the Commission for Global Road Safety, which was established by the FIA Foundation. During this year's UN Road Safety Week, the Commission launched the Long Short Walk campaign, which has so far seen tens of thousands of people in almost 50 countries walking over 100,000 kilometres to call for improvements in pedestrian protection. AUTO reports on the latest from the frontline of the campaign.

Safety improvements have also been established on the track, with a new tracking system in the World Rally Championship and work on a new side impact system set to be introduced into Formula One.

AUTO offers access to all these areas and speaks to the people behind the action.

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 232 national motoring and sporting organisations from 134 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 FIA INSTITUTE

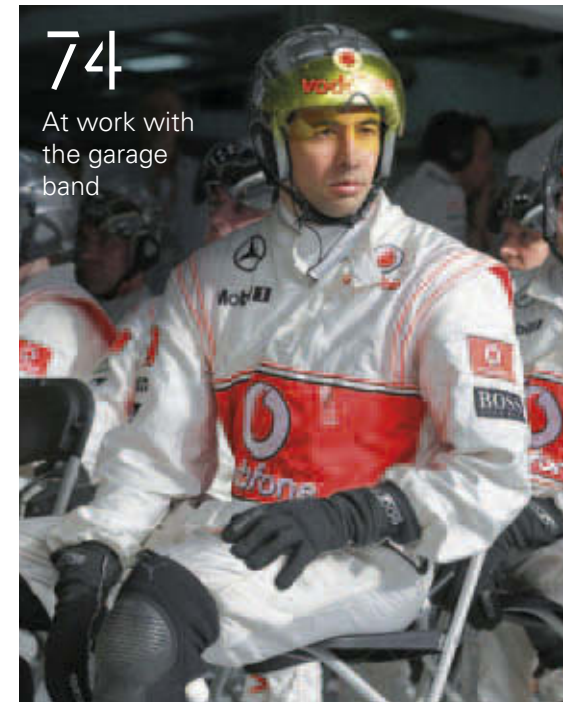
The FIA Institute is an international not-for-profit organisation that develops and improves motor sport safety and sustainability. It leads projects that encourage the rapid development of new and improved safety technologies; that facilitate higher standards of education and training; and that raise awareness of safety and sustainability issues. The Institute was established in October 2004 and funds its activities through annual grants from the FIA Foundation.

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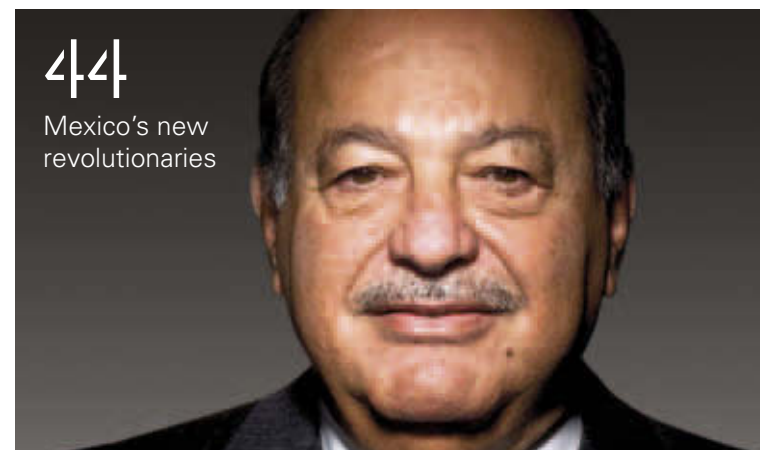
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Peugeot on the rise

PEAK PERFORMANCE

When Peugeot pulled out of top-level sports car racing at the beginning of 2012 citing a 'challenging economic environment', few insiders expected the motor sport-steeped company to stay out of the headlines too long.

Sure enough, just a year on from its withdrawal from Le Mans, Peugeot is back in the limelight, this time in the company of nine-time World Rally Champion Sébastien Loeb (right) and an 875hp monster called the 208 T16, a car specifically designed to tackle one of motor sport's most famous challenges – the Pikes Peak Hill Climb.

The oldest race in the US after the Indianapolis 500, Pikes Peak sees competitors tackle 156 corners up a 19.99km course that rises to an altitude of 4,301m, hence its nickname, the Race to the Clouds. Loeb will be

attempting to smash the current record of 9:46.164, set last year by New Zealander Rhys Millen.

Of the T16, Loeb says: "I have driven many types of car in my career, but this is very, very different. Its acceleration, performance and stopping power are more like those of a Formula One single-seater than a rally car."

Peugeot is no stranger to Pikes Peak, winner in 1988 and 1989 with legends Ari Vatanen and Robby Unser. All eyes will be on it at this year's attempt, on 30 June. ▣



Peugeot's Pikes Peak car is powered by a twin-turbo V6 petrol engine that develops 875hp, giving it a 0-100km/h time of just 1.8 seconds. "It's a rocket," said Loeb after his first test in the 208 T16. "The first time you drive it, each gear change stuns you. The shifts are really brutal."

Road Safety

F1 FOR ALL

Led by FIA President Jean Todt and Formula One Management CEO Bernie Ecclestone, F1's stars came together to support UN Global Road Safety Week in May of this year.

They were joined by 200 local school children to walk one of their favourite stretches of road, the grid at Barcelona's Circuit de Catalunya. It formed part of the Long Short Walk campaign, an initiative of the Commission for Global Road

Safety to highlight the need for improvements in pedestrian protection and better road safety.

Todt said: "It is paramount that we protect pedestrians and the FIA is delighted that F1 has embraced this initiative to help save lives in such a positive way. It shows how motor sport can help draw attention to such an vital issue. This fusion of sport and mobility to improve road safety is at the core of the FIA's beliefs." □



Jean Todt, Bernie Ecclestone, Fernando Alonso and Lewis Hamilton accompany local school children in a Long Short Walk on the Circuit de Catalunya before the Spanish Grand Prix

PHOTOGRAPHY: LAT PHOTOGRAPHIC

Stories making the headlines from the world of the FIA family

News



President receives UN honour

The International Telecommunication Union honoured FIA President Jean Todt at an awards ceremony for World Telecommunication and Information Society Day in May of this year.

The United Nations agency recognised Todt as a global ambassador for improved road safety through the development and growth of information and communication technologies (ICTs) for cars. As President of eSafety Aware, Todt has been highly active in accelerating the introduction of smart vehicles and new technologies into the commercial market, which will have a major impact on the roads.

Electronic Stability Control, Warning and Emergency Braking System, Lane Support System, Blind Spot Monitoring, Adaptive Headlights and Speed Alert are just some of the technologies that will be making the roads safer in years to come.

“Over the past 10 to 15 years, vehicle safety has already improved greatly, thanks to enhanced crash test standards, crumple zones, air bags and so on,” said Todt. “Now a new generation of safety system, often based on ICTs, can even prevent accidents from happening in the first place. Intelligent vehicle technologies are making cars safer than ever before.”

‘A NEW GENERATION OF SAFETY SYSTEM CAN EVEN PREVENT ACCIDENTS FROM HAPPENING’

FIA PRESIDENT JEAN TODT

Hyundai begins testing 2014 WRC challenger

Hyundai, which last September announced its intention to return to the World Rally Championship after a decade, has begun testing its 2014 challenger, the i20 WRC.

The team, which last competed in the WRC in 2003, took the wraps off the new car at a private test track close to its base in Alzenau, Germany. A preliminary shakedown to test car systems was followed by a more intensive three-day test during which the i20 covered 550km.

Commenting on the first test, Hyundai Motorsport Team Principal Michel Nandan said: “The learning from the first tests for me is quite positive. We have now a lot of useful feedback to digest for the next steps of our preparation.

Nandan, who previously acted as Technical Director of Peugeot Sport between 1999 and 2005, added that after evaluating the data gathered from the first outing, Hyundai will continue to put the i20 WRC through its paces at a variety of locations across Europe in advance of the team’s competitive return at next year’s Rallye Monte Carlo.

“We are not disclosing specific test venues or the names of the various drivers we will have,” he said. “But we will ensure that every aspect of the car’s performance is put to the test and thoroughly evaluated without leaving anything to chance.”



Le-Mans Prototype for FIA record attempt (main) will be a low-drag version of the B12 69/EV. Former F1 star Alex Wurz (below) will again lead Academy training programme

Drayson attempts FIA World Record

Oxfordshire-based motor sport team, Drayson Racing Technologies, has set its sights set on the FIA World Electric Land Speed Record. The current 282 km/h record, set by Battery Box General Electric back in 1974, will be disputed along RAF Elvington’s 1.86-mile runway on 25 June.

The record attempt is in the sub-1000kg class, and in the driving seat will be Lord Drayson, the entrepreneur, racing driver and former UK science minister. He will be piloting a low-drag version of the Drayson B12 69/EV electric Le-Mans Prototype,

which has a lightweight 20 kWh battery and an output of 600 bhp (480 kW).

The engineering challenge of generating and sustaining high speeds on such a lightweight vehicle is why the record has remained unbroken for over three decades. “It’s a tremendous technical challenge but we believe it’s about time that someone moved this record on to demonstrate just how far EV technology has come,” commented Lord Drayson.

More than simply a demonstration of technical knowhow, the record attempt

will put the spotlight on the commercial potential of electric drivetrains and will underscore Britain’s position at the forefront of the growing EV industry.

“The reason we are doing this is to showcase the maximum level of EV performance at the moment – and in a real racing car rather than a tear-shaped land speed record car,” added Drayson.

It will also provide a taste of what’s to come from Drayson’s Formula E team, which was the first to sign up to the FIA’s new electric championship.



Academy applications open

Young drivers from across Europe can now apply to take part in the selection event for the next FIA Institute Young Driver Excellence Academy.

The selection process for this year’s Academy involves a series of five qualifying events in regions across the world to give as many drivers as possible the opportunity to participate. The first event will be for drivers from Europe and will take place in Teesdorf, Austria from 21 to 24 July.

National Sporting Authorities (ASN) can nominate only one driver to take part in the selection event. Each of the qualifiers will produce

one winner to go forward to the 2013/14 Young Driver Excellence Academy. Further drivers will be selected using a wildcard system, taking the final number of participants in the Academy group up to eight.

FIA President Jean Todt said: “The Academy has already proved to be a great success with many graduates now competing at the top level of the sport. We are pleased to help drivers develop their careers and to do so in the right way with safety as the focus.”

Drivers wishing to apply for the Academy must contact their National Sporting Authority.

Renault excels in Euro NCAP

French car manufacturer Renault has received 15 five-star ratings from Euro NCAP after its Renault Captur gained top marks in recent tests.

The Renault Captur's front occupants are safeguarded by two high-efficiency airbags, as well as by seat belts equipped with pretensioners and load limiters calibrated at 400daN. At the rear, all the seats are equipped with three-point seat belts and load limiters for the outer seats.

For side impacts, the car features two impact detection sensors on each side, one in the front doors and the other in the B-pillars. A specific algorithm adjusts

the way the new-generation head-thorax airbags are deployed to match the severity of the impact.

The front end of the car was designed to minimise injury to pedestrians. The bumper has no salient edges, while the shape of the lower part of the windscreen reduces the risk of injury in an impact. Meanwhile, the height of the bonnet was raised in order to incorporate a crumple zone between the structure and the uppermost parts of the engine.

Not all cars aced the latest Euro NCAP tests. The Dacia Sandero received four stars and the Nissan Evalia just three stars.



Call for action at ITF summit

Transport ministers assembled at the OECD's annual International Transport Forum (ITF) in May were encouraged to lobby for road safety to be included in the UN's post-2015 Sustainable Development Goals.

At the session 'Investing in Road Safety', ministers heard how road traffic injuries are a global health epidemic and how it is only through international financing that they will advance national initiatives currently in place.

FIA Foundation Director General David Ward, presenting the report 'Safe Roads for All' at the ITF, said: "There is not enough recognition globally about this issue, the impact that it has on millions of lives, and on economies particularly in low and middle income countries."

The inclusion of road safety as one of the UN Sustainable Development Goals would require a specific target. Currently tabled is the global fatality reduction goal of 50 per cent by 2030. This would be the logical development of current initiatives like the UN Decade of Action for Road Safety.

Development Fund engages new regions

The Motor Sport Safety Development Fund has awarded grants to six countries that have never before engaged with the funding initiative. The latest round of approvals takes the number of recipients to over 100.

As part of the FIA Institute's continued aim to ensure that every National Sporting Authority (ASN) benefits from the fund, an additional funding round was opened for countries that had not yet applied as well as for new FIA members elected at the latest General Assembly. It was also open to resubmissions from unsuccessful applicants in the September 2012 round.

The Fund Management Committee – made up of Chairman Michael Schumacher, FIA President Jean Todt, former FIA President Max Mosley, FIA Senate President Nick Craw and President of Spain's RFEDA Carlos Gracia – approved grants to six new countries that had successfully put forward safety projects related to officials training and young driver development.

The new Fund recipients are ASNs from Kazakhstan, Qatar, San Marino, Thailand, Indonesia and Gabon. Each of them will receive funding to develop and conduct safety training for motor sport officials,

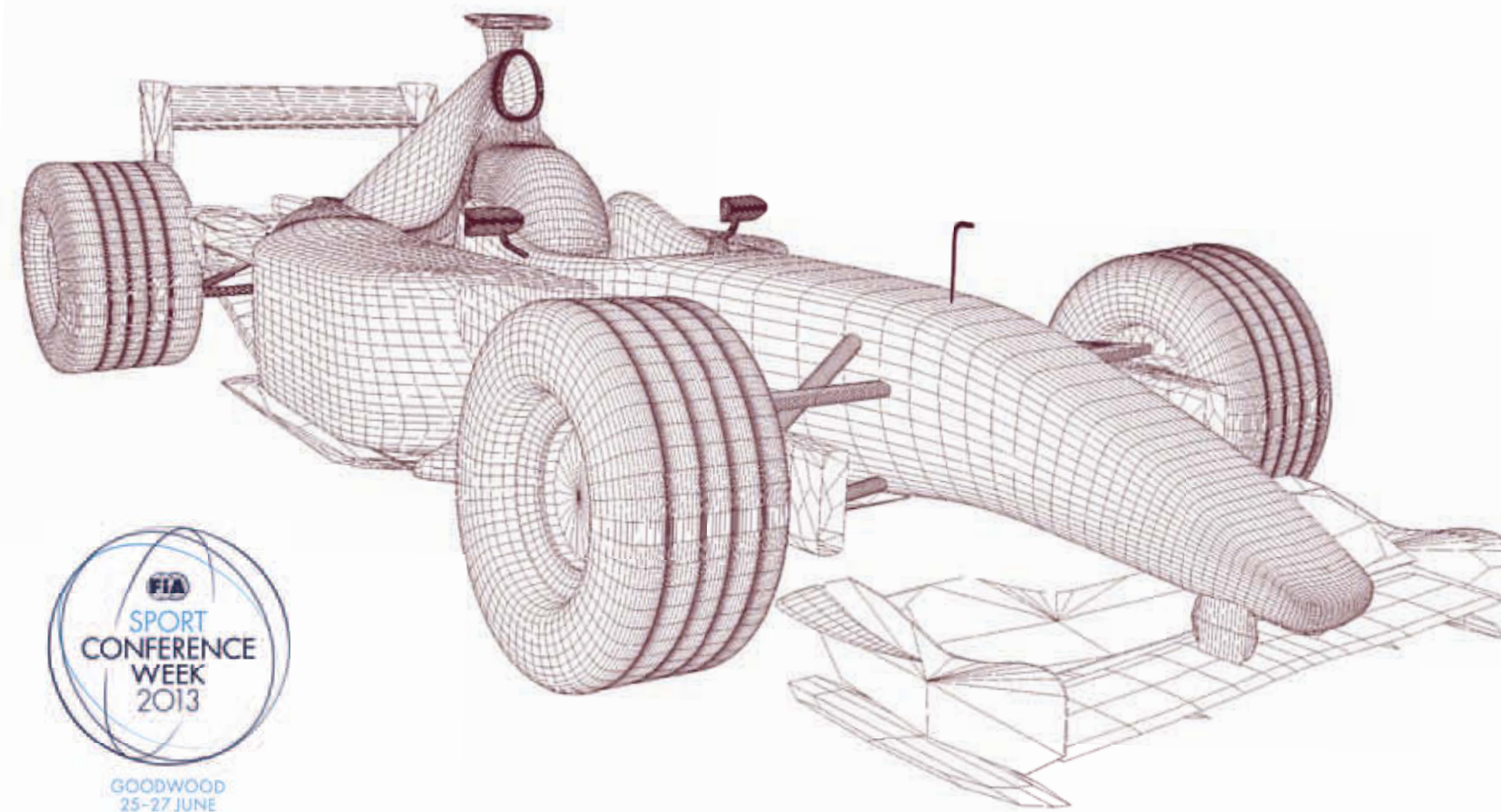
with the majority of these ASNs having elected to work with Institute-approved Regional Training Providers.

In addition, Qatar will receive a grant to conduct an elite-level young driver rally training programme whilst Indonesia will receive a grant to conduct an entry-level young driver training programme.

FIA President Jean Todt said: "It is really important that funding continues to go to new countries. The benefits of this initiative should be felt worldwide and it is our hope that even more nations will engage with it going forward."



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Racing legends launch Drivers' Commission

Emerson Fittipaldi, Sébastien Loeb, Nigel Mansell and Yvan Muller were just some of the racing legends involved in the inaugural meeting of the FIA Drivers' Commission in Paris.

The commission provided a platform for drivers from all FIA Series, Cups and Championships, giving racers the opportunity to voice their concerns or broach key issues within the world of motor sport.

For Emerson Fittipaldi, President of this body is a historic moment: "By establishing for the first time in its existence a forum for the drivers, [we are] enabling them to make their voices heard within the FIA."

Top of the agenda in Paris was the question of stewarding, with Indian racing driver Karun Chandhok singling out events at the recent Marrakech Auto

GP and uneven driving standards in GP2 as examples of the need for consistency across all forms of motor sport.

"I think the drivers should have a voice perhaps in how some of the rules are created for championships," Chandhok proposed. "For example, the qualifying format in WEC is complicated and potentially dangerous as it requires two drivers to do two laps. And the engine situation in Formula 3 is a bit messy."

Mexico becomes first RTP in Americas

The Organización Mexicana Del Deporte Automovilístico Internacional (OMDAI) has been awarded the FIA Institute's Officials' Award for the Achievement of Excellence after demonstrating the highest standards of motor sport marshalling and training.

The award opened the way for OMDAI to become the first official Regional Training Provider (RTP) in the Americas. RTPs are National Sporting Authorities (ASNs) that have been accredited at the highest level in the FIA Institute's Officials Safety Training Programme and then appointed to help other ASNs achieve this standard worldwide for the whole FIA community.

OMDAI is now eligible to train ASNs around the world, with financial support from the Motor Sport Safety Development Fund. FIA Institute President Gérard Saillant said: "This new appointment will give more choice to ASNs seeking support and will be especially important for the development of motor sport across the Americas."



OMDAI is authorised to train officials from other ASNs around the world

New side impact system for F1

A year-long collaboration between the FIA Institute and Formula One's teams has resulted in the development of a new side impact system that will be in all F1 cars for the start of the 2014 season.

The advanced technology gives drivers added protection in acute angle crashes and was developed by the car engineering team at Red Bull Racing based on an initial design by Marussia. Carbon fibre tubes, with optimised geometry and laminate design, are attached to the chassis within the sidepods to help minimise the forces of a side impact incident on the driver. The tubes are designed to progressively crush and absorb the force of an external object in a

controlled manner regardless of the angle of impact.

Paul Monaghan, Head of Car Engineering at Red Bull says: "Progressive deformation slows the car down. So if you get that right, then you don't input any high acceleration into the monocoque and you help to keep the forces down."

F1 teams agreed unanimously to adopt the new system during an F1 Technical Working Group meeting in May of this year. Now the teams will have to work out how to best incorporate the system into next season's cars.

Read the in-depth analysis on page 22

Formula E powers ahead

The FIA Formula E Championship, the new electric-car race series, has announced a host of venues, sponsors and suppliers for its inaugural season.

The first race, in London, has already been confirmed for September 2014. The championship will then travel to major cities around the world including Beijing, Miami, Rome, Rio de Janeiro, and now Bangkok – the ninth race to be confirmed in a ten-round schedule.

Alejandro Agag, Formula E Holdings CEO, said: "We have been impressed with Thailand's commitment to cleaner energy and sustainable motoring, as well as their rising motor sport programme. A Formula E race through this amazing city would provide a great spectacle together with a considerable boost to tourism."

Formula E has confirmed Renault SAS as official Technical Partner. The French vehicle manufacturer will be supplying the Formula E cars to be entered in the championship, and an order for 42 Spark-Renault SRT 01E cars has been placed with the company.

TAG Heuer has also signed up to be Official Timekeeper, Official Watch and Chronograph and Founding Partner of the FIA Formula E Championship.

Jean-Christophe Babin, President and CEO of the luxury Swiss watch brand, said: "Teaming up with Formula E represents the next logical step for TAG Heuer's ongoing commitment to motor sports, as it draws on both our racing heritage and our commitment to sustainability."



Ford unveils 3D virtual design environment

Ford has unveiled a new car 3D system it believes will cut the time needed to produce and test new car designs.

The company's new Computer Automated Virtual Environment (CAVE) is a three-side room featuring a dummy seat around which interactive models of new car interior design elements are projected. By wearing a pair of polarising 3D glasses and monitored by infrared sensors, engineers can interact with and manipulate virtual interiors and judge their suitability for the car that eventually rolls off the assembly line.

"We can now conjure up a car in the digital world, and then actually get in and experience it," says Michael Wolf, Virtual Reality Supervisor, Ford of Europe. "We still rely on the know-how and imagination of our prototype engineers to bring designs accurately to life, but now they have at their disposal a much more sophisticated tool to do so."

For its latest model Focus, Ford used the CAVE to optimise windscreen wiper effectiveness; maximise roominess for rear passengers by testing front seat and headrest design; evaluate door frame design impact on visibility; and minimise reflections that can affect the view through windows and of information displays.

"The CAVE makes it so much quicker and easier to analyse designs," adds Wolf. "For example, to manufacture three different front pillar design examples and fit them to a prototype vehicle could take 10 days. The same project could be completed in just one or two days using our virtual reality simulator. And it also saves on all-important physical resources."





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Global NCAP Secretary General David Ward presents award to Volvo's Professor Lotta Jakobsson

Global NCAP rewards innovation

At the Annual Meeting of Global NCAP, the vehicle safety organisation recognised the efforts of individuals, consumer groups and manufacturers in the UN's Decade of Action for Road Safety. Global NCAP Awards were presented to Euro NCAP, a team of UK safety experts, and Volvo Cars.

Euro NCAP was honoured for its role in consumer crash testing and its contribution to the significant reduction in deaths and injuries in the European Union over the past 16 years. The Individual Achievement award went to three individuals who made a large contribution to Euro NCAP's creation: Keith Rogers and Maurice Eaton, formerly of the UK's Department for Transport, and Adrian Hobbs, formerly of the UK's Transport Research Laboratory,

Volvo Car Corporation was the winner of Global NCAP's Innovation Award. The Award recognises the advances made by Volvo to improve protection for vulnerable

road users such as pedestrians and cyclists. The pedestrian airbag featured on the Volvo V40 as well as the pedestrian detection system were highlighted as prime examples of Volvo's commitment and vision.

Presenting the award to Professor Lotta Jakobsson of Volvo, Global NCAP Secretary General David Ward said: "Volvo's work is just the kind of innovation needed to ensure that the UN's Decade of Action achieves meaningful results."

Held in Seoul at the end of May, Global NCAP's Annual Meeting brought together all NCAPs active worldwide to share experience in promoting consumer information about automobile crash avoidance and protection.

Global NCAP also adopted the 'Melaka Declaration', which encourages consumers to choose five-star vehicles whenever possible and for the auto industry to make a voluntary commitment to set minimum safety standards for their vehicles worldwide.



The Global NCAP Meeting adopted the 'Melaka Declaration' to improve car safety standards among manufacturers

Global NCAP seeking to eliminate sub-standard safety

Global NCAP Secretary General David Ward addressed government and manufacturing representatives at the Enhanced Safety of Vehicles (ESV) vehicle safety conference in Seoul. Providing an update on Global NCAP's activities in the UN's Decade of Action for Road Safety, Ward asked car makers to consider a voluntary commitment to improving basic levels of crashworthiness.

The UN Decade of Action has made a number of recommendations for vehicle safety that Global NCAP is working to see implemented. These include creating NCAPs across world regions and providing increased support for the international regulatory process.

Global NCAP is helping to establish New Car Assessment Programmes (NCAPs) in emerging economies. The organisation is also providing a platform for all NCAPs to exchange ideas and best practice, looking at how to accelerate the introduction of new technologies into the marketplace.

Ward said: "In emerging markets, we're seeing the critical importance of body structure integrity together with better restraint systems. Without these we will not see the reduction in fatalities and injuries that we need. The number of vehicles that fall short of the basic UN crashworthiness standard, Regulation 94 is worrying."

Citing the 20 million vehicles sold in 2011 that failed to comply with basic crashworthiness standards, he added: "I see little difference between a sub-standard vehicle and the terrible tragedy of the collapsed factory in Bangladesh: both are sub-standard products causing terrible human injury."



AUTO ASKS:

'Is Formula One abandoning its heartland in favour of races in new markets?'

The motor manufacturer

Simon Sproule

Director, Marketing Communications, Renault-Nissan Alliance

Formula One was the ideal global marketing platform for Infiniti, a relative newcomer to the premium car market. That was not simply because it attracts huge audiences but also because it was felt that the sport is capable of constant reinvention.

Formula One exists to excite and attract fans from all over the world, and as a business to enable brands to reach large audiences. Competition for leisure time is constantly growing. It is not just a case of competition with other sports but also the impact that the Internet is having on all forms of entertainment.

On a purely commercial basis, it is fair to say that the major brands investing in F1 expect nothing less than a continual hunt for better ways to connect to new consumers.

Looking at the sport through the lens of an automaker, the growth expected in the global auto market is going to be broadly focused across three segments: firstly there is the premium sector (8 per cent of volume, but accounting for about 50 per cent of industry profits); secondly, there are the emerging markets, such as the BRIC countries; and thirdly there is the entry-level market.

Over the past 20 years, the industry has broadly been shifting its focus from North to South and from West to East. This year, the global auto industry should account for around 80 million sales. By 2020 it should be more than 100 million each year.

The United States, Europe and Japan still represent significant volumes, but the industry must continuously evolve to reach new customers, so expansion into emerging markets, combined with better reach into the mature markets, is mandatory.

The broad strategy of F1 to boost its fanbase and relevance in the Americas while at the same time planning races and events in high-growth markets like Russia and India is the right direction to be going. Although the traditions of F1 are rooted in the historic circuits of Europe, this heritage should not hold the sport back from creating new "legacy races" and venues.

F1 continues to attract fans and sponsors because it is aspirational and exciting. It is not merely about heritage brands and heritage venues but about modernity and a relentless thirst for progress, wherever that may be.



The Formula One driver

Damon Hill

Former F1 World Champion and BRDC President

I wonder how many of you reading this know where the Miss World contest will be held this year. Yes, it's still going, somewhere out there in the global village.

The reason I mention this is because about 10 years ago, an eminent motor sport journalist asked me what I thought about a proposed new venue for a Formula One Grand Prix. I won't embarrass the country by mentioning its name. It was not the fault of the race organisers if they were breaking rank with fellow Grand Prix promoters around the world by upping the survival stakes by several million dollars.

They were new to the game. They saw the glittering lights of Grand Prix racing and wanted to join in the party. But there's a right time and place for everything.

So I told the journalist that if F1 was not careful, it would end up like the Miss World contest, an antiquated Western institution banished to the outer edges of the world for being out of touch, self-serving, and perhaps a bit of an embarrassment. He laughed.

Over the past few years, Formula One has expanded into this brave new globalised world, travelling to venues far away from its European heartland. There is nothing wrong about that. Indeed, it is part of the appeal of

Formula One – the sense that it tramples down borders.

We used to sit at home wrapped in a blanket and cheer British drivers as they coped with extremes of temperature in far away places such as Austria and Italy, maybe even Spain. That was why we watched. It was a travel show.

There would be a lovely little piece at the top of the show about how you could get chips and mayonnaise in Spa and maybe partake of the healing 'waters' that made the town a hotspot for health freaks in the 19th century. And then it was on to the real meat in the programme, Nigel Mansell going up Eau Rouge with full boost. Marvellous. It made you want to visit Belgium.

Some venues, notably Australia, have made the best of their uphill battle to convert locals. But having been in the thick of it trying to keep the British Grand Prix on the calendar, let me tell you, we'd all be hung, drawn and quartered if we lost it. And imagine telling the 'tifosi' there will be no Italian GP this year?

The point is this, feeding a sport to people from the top down might work given enough time. But if you pull it out from its roots, the whole plant will die.

Let's not forget that new venues only wanted F1 because it was so popular in Europe. You can't buy popularity. People are smarter than that.

And in case you're interested, this year's Miss World contest will be at the Sentul International Convention Centre in West Java on 28th September. See you there?

PHOTOGRAPHY: LAT PHOTOGRAPHIC, PETER J. FOX, INFINITI

The television analyst

Steve Matchett

F1 commentator, NBC

I am not sure if it is right to say that Formula One has abandoned its heartland to its cost. Formula One is an ever-evolving organism, but at the same time there is no question that we still want to keep some of the classic races in Europe. We have to have Monaco, Spa and Monza.

However, F1 cannot stay in Europe at the expense of other opportunities. There is phenomenal worldwide interest in the sport and it is growing all the time. In the US there is a knowledgeable audience that is very supportive of Formula One and after the tremendous success in Austin last year, we are now waiting to see what happens with the race being planned in New Jersey. If it does go ahead, it will certainly be well-attended.

Formula One cannot turn its back on an audience that wants a race. The problem is that there are only so many races we can have in a year, for purely logistical reasons. We just have to accept that. It is really a question of getting the balance right.

There are obvious reasons why some of the traditional races should be on the calendar, however, for other races, the reasons are not so readily apparent.

Personally speaking, I like Silverstone. I enjoyed great success there. That was where I won my first race as a mechanic with Benetton back in 1995, but when you compare it with the spectacle of something like the night race in Singapore, you can see just how much effort the rest of the world is

putting in. European circuits simply have to up their game if they want to stay involved in the championship.

New promoters are fully prepared to embrace F1 and it is inevitable that the sport will gravitate towards these people. We may lament the loss of European races but it is inevitable if you look at the competition.

The French Grand Prix is one that is missed. France was where the sport began but if the race is ever going to get back there the French have got to get their act together. Look at Magny-Cours, with a few cows in the fields. It's no real competition for a race such as Singapore, is it?

Yes, the sport has roots and history but we cannot pretend that the rest of the world is uninterested in Formula One. The traditional tracks in Europe have to compete more effectively by morphing into the same kind of facilities that exist elsewhere, and, in any case, there is no reason why in time there cannot be classic races in Asia as well. □

'EUROPEAN CIRCUITS HAVE TO UP THEIR GAME'

STEVE MATCHETT



F1 safety

SIDE BY SIDE

The FIA Institute has been working with Formula One teams to develop a new side impact system that will be on all cars next season **BY MARC CUTLER**

When the Formula One cars line up on the grid for the first race next season, few will realise that one of the biggest safety developments in recent years has taken place under their bodywork. Peel back the sidepods, though, and you will see that every car is sporting a new advanced side impact protection system.

It is the result of a year-long collaboration between the FIA Institute and F1 teams to develop a side impact system that works effectively, regardless of the angle of impact.

FIA Institute research consultant Andy Mellor, who led the project, explains: "We went back to basics to examine what a side impact structure really needs to do in different types of accident. We used Robert Kubica's crash in Montreal as a specific reference point since that was a major impact at an acute angle."

The current side impact system deploys crushable tube structures attached to the side of the chassis. Although extremely effective during normal impacts, they can break off during oblique impacts due to the extremely high tangential forces that are generated during the first few milliseconds of an impact.

So Mellor engaged with the F1 teams to help develop solutions to the problem. Marussia, McLaren, Mercedes and Red Bull Racing each stepped forward.

Initial testing benchmarked performance of current structures using a new dynamic oblique impact test configuration. The core R&D then investigated two discrete options in parallel: optimised carbon tubes and crushable carbon sandwich panels. The latter comprised a variety of energy absorbing filler materials including foams, aluminium honeycombs and carbon honeycombs.

The testing concluded that the carbon tubes had far more potential to provide an efficient, lightweight and robust solution, able to manage impact loads effectively in both lateral and for-aft directions. The panels, in comparison, were surprisingly inefficient.

The winning solution was based on an initial design by Marussia, before undergoing extremely detailed optimisation by Red Bull Racing – an evolution of the current system, but using high-performance carbon fibre with a very bespoke external and internal geometry and precise layup configuration.

Paul Monaghan, Head of Car Engineering at Red Bull Racing, explains: "There were three teams that ultimately submitted impact

devices that were subjected to a physical test, and ours was deemed to be the best of the bunch, so we pursued that device further."

The solution is a pair of structures fitted to each side of the car that do not shatter on impact but progressively crush and decelerate the car in a very controlled manner. During testing, the pair of structures were able to absorb nearly 40kJ of energy in both normal and oblique impact directions – a major advancement over current designs. In order to achieve this, the structures must develop huge forces; over 15 tonnes squeezing the chassis and 11 tonnes trying to tear the structure off the chassis.

The teams agreed to implement this system for 2014 at the F1 Technical Working Group meeting on 17 May 2013. At the same time, the technical requirements for mounting the structures to the chassis were defined, in order to ensure compatibility with all cars whilst providing the teams with a large degree of design freedom. Now it is up to each team to decide precisely how best to incorporate it into the design of their cars from 2014 onwards.

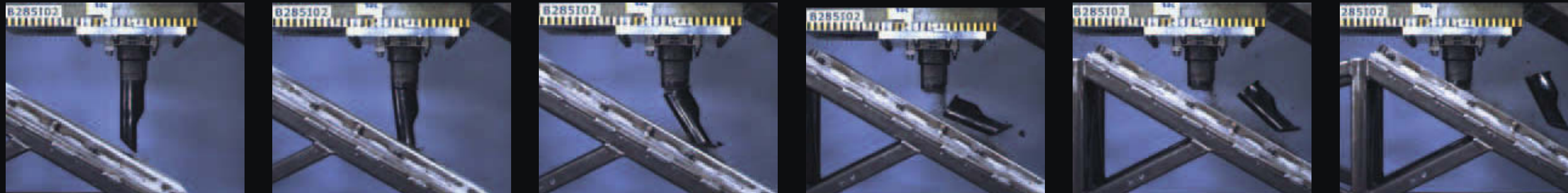
Monaghan says: "The tube has a common specification but how teams put it into their cars is entirely their business. The static tests



Sebastian Vettel crashes into Jenson Button at the 2010 Belgian Grand Prix



Current system: Occasionally the base attachment can break early in an accident meaning that the tubes do not always absorb the maximum amount of force



New system: Carbon fibre tubes absorb energy efficiently and stop the test trolley in its tracks. They absorb the same energy regardless of impact angle due to optimised geometry, and laminate design



that will be undertaken on the monocoque will determine the strength of the mounts and make sure that they are sufficient to support the tube. After that, it's down to the teams as to how they integrate it and how they design their car around it."

What is certain is that the new system will further improve safety while at the same time reducing costs for the teams. "One of the driving forces for this was to spare teams extra expense in the testing process," explains Monaghan. "Assuming everybody has a monocoque which is strong enough and passes the static tests, then they've saved money, as they're not doing an impact test. It should be a cheaper solution."

Monaghan adds that working with the FIA Institute on this project was "very easy, very straightforward" and he is delighted with the results. As he puts it: "We have a good solution, based upon sensible and sound engineering with some pretty good rationale behind it." □

Road simulator

SIM CITY

The Williams F1 team has taken some of its most advanced race simulation technology and developed it to help save lives on the roads of Doha and beyond >

BY MATT YOUSON





interiors and control interfaces developed to work with the technology. The goal is to create something sufficiently immersive to ensure the driver forgets the artificial nature of his or her environment, while avoiding the prohibitively expensive components that would prevent the system from being commercially exploitable.

Williams wants the road safety simulator to become a ubiquitous tool for driver training. It is confident that the technology has the potential to complement traditional driving instruction and, with a base in Qatar, Scott believes his team is starting in the right place.

“The country has one of the highest fatality rates from road traffic accidents,” he says. “It’s small enough that it can deploy technological solutions across the board to solve parts of the problem, and it’s also very fortunate to be endowed with vast amounts of natural resources, so it can comfortably afford the investment in these new technologies.”

Williams has already mapped 14km of Qatar’s roads, recreating the capital city Doha and its surroundings. With a magnitude that far exceeds any previous road simulator, it offers a greatly enhanced experience over a generic virtual landscape.

One of the points Williams is keen to emphasise is that there’s a world of difference between a genuinely immersive simulator and even the most detailed environments of a video game. It does come with some caveats, however. For a young generation weaned on PlayStations, the simulator has to be used as if it were a real-world

‘OUR STARTING POINT WAS TO ASK WHERE THIS COULD FIT OUTSIDE MOTOR SPORT’

DAMIEN SCOTT



(L-R) Williams F1 drivers Pastor Maldonado, Susie Wolff and Valtteri Bottas at the WTC

Williams F1 is one of a number of Formula One teams bringing high-tech innovations from the realm of grand prix racing to the public, utilising racing know-how to improve driving in the real world. The latest of these developments has recently emerged from its state-of-the-art Williams Technology Centre (WTC), located some 3,000 miles away from the team’s Oxfordshire headquarters, in the sun-soaked Gulf state of Qatar.

Here they have taken the cutting-edge simulator technology used by the Williams F1 Team to train its racing drivers and adapted and extended it for use as a training tool for road-going vehicles. The simulator has been developed in partnership with Mowasalat, Qatar’s leading taxi operator, and will help improve the safety, environmental efficiency, passenger comfort and cost efficiency of drivers.

It is the most technologically advanced road safety simulator in the Middle East, benefiting from a state-of-the-art software package called 3D Doha that accurately maps the roads of the Qatari capital and simulates realistic driving scenarios. Drivers sit in an authentic chassis with true-to-life controls further adding to the simulator’s realism.

“The simulator represented not only 10 years of very focused development into a specific technology but also some quite deep know-how and capability based around how you effectively trick a person into thinking they’re in a racing car,” explains WTC General Manager, Damien Scott. “From there our starting point was to ask ‘where does this fit outside motor sport?’”

Williams’ road simulator is now ending its beta test phase and is ready for public use. The new system utilises genuine automotive



Britain’s Prince Charles (above) at the wheel of the driving simulator; and (right) a young Qatari driver navigates the Doha road network in high definition



application, not a high-tech arcade game. “We don’t want young people getting in to the simulator intending to have fun. We want them to forget they’re in a simulator after 30 seconds and start focusing on the environment,” says Scott.

“At the same time, with the generation that hasn’t grown up on computer games, we don’t want them feeling they’re in an alien environment. The aim is to have them get into the ‘vehicle’, turn the key, put it into gear and drive off as they normally would.”

Williams is currently completing beta testing and the system is shortly due for roll-out of its first application – a mobile awareness simulator. “We’ve tested it with high school students,” says Scott. “They’re exposed to a variety of situations where things go horribly wrong in a very realistic way. After a couple of minutes’ familiarisation, they’re so sucked in to the alternative reality that their stress levels become highly elevated and they become focused on the risk factors.”

Another early supporter of the simulator is the Qatari state taxi company. Williams is still developing its offering based on feedback it receives from the taxi drivers, helping them not only improve safety but also achieve greater fuel efficiency and reduced wear and tear.

“It’s at a fascinating stage now,” says Scott. “We have the system in the field and we are getting real data, which is telling us what works, what needs improvement and where we’re having a real impact.”

The technology also has potential as a device to fine-tune city planning. It could even be a valuable source of data for research into fields such as driver distraction or interaction on roads increasingly populated with autonomous vehicles.

Williams’ road simulator benefits from being developed with the skills and experience honed by a decade or more of best practice in F1. That makes it an innovative example of technology transfer and one that has the potential to greatly benefit the wider world. □

F1 Grand Prix

FORMULA FOR SUCCESS

High-profile races such as the US Grand Prix and the spectacular night race in Singapore have raised the stakes in Formula One. With more and more countries fighting to bring the sport to their shores, AUTO investigates what it takes to build a grand prix from the ground up >

BY MATT YOUSON



To say that hosting a grand prix is an expensive business is an understatement. But it can be a highly profitable venture too when you look at the bigger picture – beyond simply getting spectators through the turnstiles.

Benefits vary from country to country and from venue to venue. A race funded by a government may look for returns in tourism receipts, whether from travelling GP fans, or increased traffic during the rest of the year. A privately operated event, on the other hand, will not only look at profits from the grand prix itself but also from any business that comes from the circuit's association with the big show.

Arguably the most successful state-funded event of recent years is the Singapore Grand Prix. The city-state stages an enthralling night race through its skyscraper canyons, with the action drawing in big crowds and the whole city embracing the race, which is incorporated into a larger programme of events and festivities over the weekend. The stunning backdrop and the user-friendliness of Singapore as a travel hub places the race high on the wish-list of many sports tourists. Importantly, it also promotes the city as a

visitor destination to a wider audience of luxury travellers and experience seekers.

In fact, that was very much the original intention of attracting Formula One, says Colin Syn, Singapore GP deputy chairman and FIA Institute executive committee member. "Formula One, as well as the accompanying events around it, helped to change the perception of Singapore from being just a stopover, to being a must-visit destination. [F1] is a fantastic platform to showcase the best of the city."

The first Singapore GP took place in September 2008. It was the product of a year of negotiations and the finalisation of a five-year contract between Formula One Management CEO Bernie Ecclestone, the Singapore Tourism Board (STB) and billionaire entrepreneur Ong Beng Seng, prime mover behind Singapore GP Pte Ltd.

After the circuit layout was endorsed by the FIA, civil works began in September 2007 involving the building of 1.2km of new roads, construction of the pit complex and, of course, the development and installation of F1's first circuit lighting system.

The construction project and the race are jointly funded by STB and the Singapore GP organisation. From the outset, the race was

shaped by the need to represent value to STB, for whom racing at night and on the city streets was essential.

"The whole point of the Singapore Grand Prix is that it takes place right in the heart of one of the most dynamic and most vibrant cities in the world," explains Syn. "You have to watch the television coverage of the race in Singapore, with the spectacular Marina Bay skyline, to see why the decision to hold the race downtown was the right one."

While Australia grumbles about having a twilight race to pander to audiences in Europe, for Singapore this audience is a key demographic. "The later start time ensures maximum exposure on European TV, while in Asia, a late Sunday evening broadcast gains maximum market exposure, effectively creating a two-hour television commercial for Singapore," says Syn.

Singapore has extended its original five-year deal to run until 2017. Figures for the first four years of the race released by STB suggest a global TV audience of over 360 million viewers, S\$560 million (€342 million) of incremental tourism receipts, and over 404,000 unique spectators attending the race, of which approximately 40 per cent fall into the prized 'foreign visitors' category.



A spectacular backdrop for the Singapore GP (main); Bernie Ecclestone with Colin Syn (below); and Lewis Hamilton in qualifying (opposite)



'THE GRAND PRIX IS A TWO-HOUR TELEVISION COMMERCIAL FOR SINGAPORE'

COLIN SYN

Not every new Formula One venue is directly funded by government, however. And while no grand prix seems able to produce ticket sales to balance race fees, several circuit promoters in Europe accept F1 as a loss-leader – the halo cast by a grand prix making their venue more attractive to other users and profitable for the rest of the year. F1's newest track, Austin's Circuit of the Americas (COTA), shares elements of this model, while simultaneously sharing many of Singapore's goals.

"Our business model is based on Formula One not being the majority of our revenues," says COTA President Steve Sexton. "Those revenues come from a series of other motor sports events, manufacturer launches and track rentals, plus use of the facility for other events. F1 has substantial name recognition in the motor sports world and so it helps us get attention."

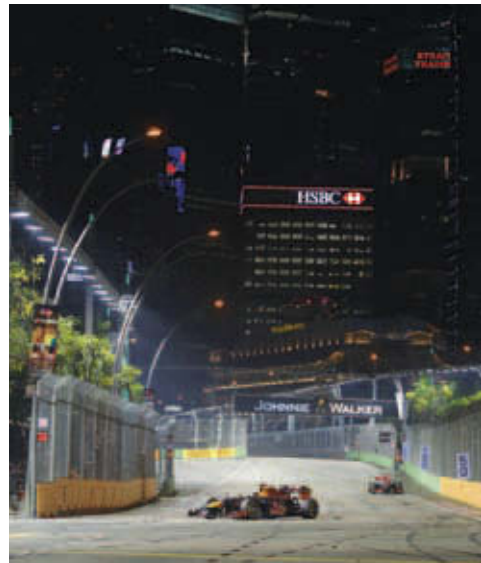
Over eighty per cent of Texas' 26 million inhabitants live within three hours' drive of

the circuit, in a triangle formed by Dallas, Houston and San Antonio. Suited to the image of F1, Austin is a major centre for the tech industry being home to the HQs of many blue-chip electronics manufacturers and rivalled in the US only by California's Silicon Valley.

Ironically, in the case of F1, Austin is also famed for being progressive, anti-corporate and independent, a reputation summed up in the city's non-official slogan 'Keep Austin Weird'. However, Grand prix racing fits in to this framework perhaps better than many non-Americans might imagine. Significantly, Austin is the biggest city in the US without a major sports franchise of its own.

Despite Austin being a natural fit for F1, COTA's path to hosting a grand prix was not straightforward. Since 2007, when F1 ended its association with Indianapolis, many new homes had been mooted for a USGP, often linked to the peripatetic nature of Bernie Ecclestone's travel itinerary. Austin flew in under the radar, the deal to host race kept under wraps until the race announcement on 25 May 2010.

While F1 was gearing up for that year's Turkish Grand Prix, Ecclestone unveiled a ten-year deal with Full Throttle Productions, headed by former driver Tavo Hellmund. The race would take place at a yet-to-be-constructed facility. >



Over the next few months, more details emerged. Automotive entrepreneur Red McCombs, noted for his past ownership of various sports franchises, was a significant investor, as was financier Bobby Epstein. Epstein controlled the land in Elroy, Travis County, where the circuit would be built. The pair's holding company, Accelerator, also announced a deal to bring MotoGP to the circuit.

In June 2011, the event was included on the provisional calendar released by the FIA World Motor Sports Council, confirming a race date of 17 June 2012. The circuit, now christened, would soon after announce a race date for Australian V8 Supercars. On the other side of the ledger, though, cracks were starting to show, with a growing rift between factions responsible for building the circuit and those holding the promotion agreement for F1. Financial deadlines to secure construction funds and to pay fees came and went.

With no progress on the circuit, the race date was pushed back to November 2012. Construction funding was finally secured in September 2011 but construction itself was halted while partnership wrangles continued. The fallout saw Hellmund leave the project and a new race promotion deal was struck on 7 December between Ecclestone and COTA management.

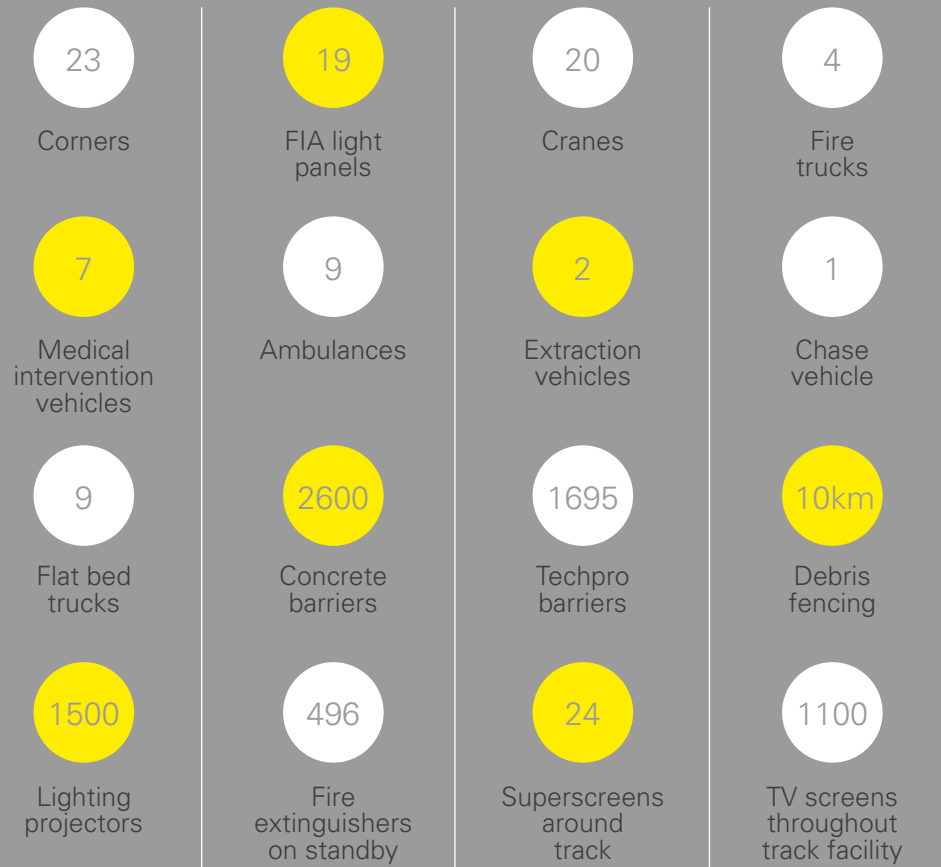
Sexton cites the December date, 11 months before the 2012 Grand Prix, as the start of construction proper. "Our aim was to build an entertainment complex that features an F1 track, a world-class amphitheatre, and a series of permanent venues to accommodate catering and business conferences, while retaining flexibility to organise large-scale festivals. The plan was to have the allure of an FIA-certified Grade 1 track, and an asset with year-round use capability."

While COTA is privately funded, part of the business plan was to qualify for state incentives via the state's Major Events Trust Fund (METF). "Bring an event to Texas that >

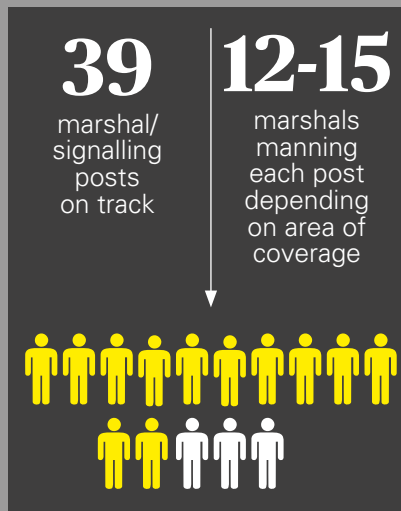
AUTO/DATA: Singapore GP

Known as the Marina Bay Street Circuit, the Singapore Grand Prix track runs through the city streets close to Central Area. It is a major operation to stage the event, and requires around 20,000 people. Illuminating the course are 1,500 floodlights, each emitting 2,000 watts. The race also requires some 4,295 concrete and techpro barriers placed along the route. But to see the drivers do 300km/h along Raffles Boulevard makes all the effort worthwhile.

On track



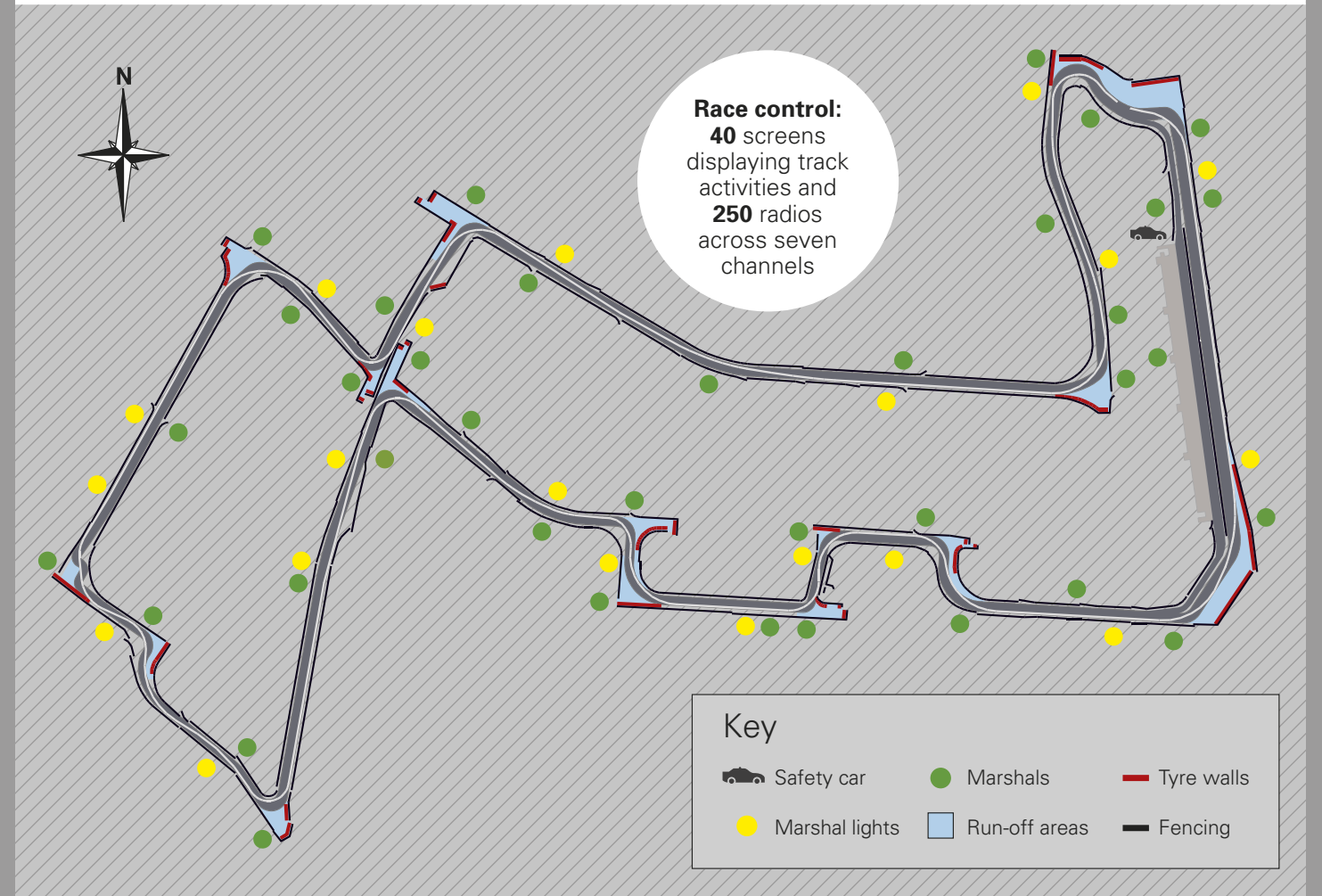
Marshal posts



Each post holds:

- 4-6 9kg dry powder fire extinguishers
- 4-6 9-litre foam fire extinguishers
- 5 brooms
- 3 bottles of soakers
- 3 flag sets – including 2 yellow, 1 green, 1 blue, 1 white, 1 slippery surface, 1 red, 1 safety car board
- 1 tool box
- 1 white board with markers
- 1 ice box with mineral water and isotonic drinks

Singapore Grand Prix – Marina Bay Street Circuit



59,524 HOURS SPENT ON TRAINING FOR ALL THE RACE OFFICIALS IN PREPARATION FOR THE WEEKEND

Track data	
Lap	5.073km / 3.152 miles
Offset	0.137km
Lap record	1:45.599 K Raikkonen (2008)
Race distance	309.316km / 192.208 miles
Number of laps	61

20,000 PEOPLE WORKED BEHIND THE SCENES AT THE 2012 RACE

Trackside medical

28 Trackside doctors

28 Trackside paramedics

12 Extrication crew members

33,712 BOTTLES OF MINERAL WATER CONSUMED BY OFFICIALS OVER THE GP WEEKEND

1107 MARSHALS

16 nationalities are represented among the Senior Officials group, including a Korean, a Colombian and a German

Medical centre

- 8-10 support staff
- 5 doctors on duty
- 2 on-site surgeons on standby
- 4-5 surgeons on standby at Singapore General Hospital
- 2-3 radiographers
- 2 resuscitation bays
- 3 consultation rooms
- 2 police outriders ready for ambulance escort to Singapore General Hospital



generates incremental or additional sales taxes, then you have the opportunity to apply to get those reimbursed back to the venue,” explains Sexton. “The US Grand Prix qualifies for the METF in the same way that the Super Bowl and the NBA All-Star game does. The fund is administered via the State Comptroller’s Office, which handles all the applications and the economic evaluations.”

COTA was looking to secure in the region of US\$25 million a year from METF, a figure rumoured to cover its race fee. Local opinion was divided over Formula One coming to Austin. Alongside environmental concerns, there was considerable opposition to using public money to attract a minority-interest sport. The Austin city council, required to guarantee a proportion of the funding, gave its approval after a public debate on 29 June 2011, passing the motion 5-2 in favour.

Council member Laura Morrison argued: “A vote for this motion would effectively be an endorsement of the state’s use of \$25 million, eventually a quarter of a billion dollars, for a private, for-profit enterprise. I really can’t ask the state to spend this money on a sporting event when we’re slashing social service spending.”

COTA insists the GP presents enormous benefits to the city via the boost it provides to tourism. While Sexton sees motor sports enthusiasts as forming the bulk of visitors, he also suggests the greater challenge is in drawing broad based visitors to Austin.



COTA President Steve Sexton (right) follows the action trackside; and (above) the US circuit under construction in 2012

‘IT’S A WORLD-CLASS EVENT LIKE THE SUPER BOWL, THE WORLD SERIES OR THE KENTUCKY DERBY’

STEVE SEXTON



“Our mission was to portray a world-class experience and a major league sporting event to appeal to those casual customers who simply want to come to a large scale event, much like we would see at the Super Bowl, the World Series or the Kentucky Derby,” he explains. “They may not be true aficionados of the sport but they want to be there because it’s an event.”

255,000 spectators attended the inaugural race in 2012, with an audience of 117,429 turning up for the race day on 18 November. Ticket sales indicated that 60 per cent of spectators were visitors to Texas. On 11 December, the Texas State Comptroller announced that the Circuit of the Americas would receive a reimbursement of \$29.3 million to cover their hosting costs.

“We’re very pleased with how we achieved that for 2012, and we’re looking forward to 2013,” says Sexton. “We’re targeting longer hotel night stays, more to do early in the week, more entertainment at the site during the event times. That’s how we’re going to improve the USGP.”

Stiff regional competition makes these improvements all the more urgent. COTA could have to square up against a second grand prix in the US, and closer to home, a revived Mexican Grand Prix. For Singapore, currently separated by six months from the nearby Malaysian Grand Prix, the suggestion that Thailand may soon join the calendar muddies the waters.

Europe’s traditional races tend to have large and loyal fanbases, built up over decades. New F1 markets, on the other hand, do not have the same luxury.

“The more Southeast Asian countries get involved in F1, the better it is for every one of the promoters as it helps to increase awareness of the sport regionally,” insists Syn. “With more Asian grand prix venues being added, the popularity of the sport has seen a significant increase. We’re excited about reaching out to these new fans who have enjoyed their home grand prix experience and who are now looking to explore other Formula One circuits in their neighbouring countries.”

There’s certainly an element of bravado in such a statement. But for the fans, having grands prix competing for their custom is no bad thing. The Singapore and US races offer a customer-focus that simply would not have occurred to the organisers of F1 upon its inception, when races took place wherever an audience might come together and suitable facilities existed. Not every modern race has prioritised spectator numbers but if one were to wager on which new grands prix were most likely to join the classics, it is difficult to look beyond those that have the most to gain from attracting the biggest live audience. □

Ready to race

The FIA Circuits Commission assists course designers in creating thrilling but also safe circuits that are fit for Formula One



FIA Race Director Charlie Whiting assesses new courses for the FIA Circuits Commission

Ensuring a new circuit is suitable for Formula One and meets the highest safety standards is a task that falls to the FIA Circuits Commission, though the process usually begins with more informal contact between the venue and the FIA.

“Our involvement usually begins before a contract is signed,” says FIA F1 Race Director and Safety Delegate Charlie Whiting, who is also a member of the Circuits Commission. “Before the deal is done, the circuit architect will come to us informally with an initial layout. We’ll study that, maybe make some suggestions to massage it into a shape we deem suitable.”

“We will simulate the circuit and from that develop things like a speed profile, which in turn will inform us about run-off zones, for example. Obviously racing evolves, so the simulation is never going to be perfect, but it has proved to be extremely accurate in the last few years, predicting speeds to within a few km/h.

“Ultimately, the Circuits Commission will become involved. They will look at all of the proposed parameters: from the profiles and widths of the pit entry and exit to the kerbs, the fencing and the opportunities for overtaking.

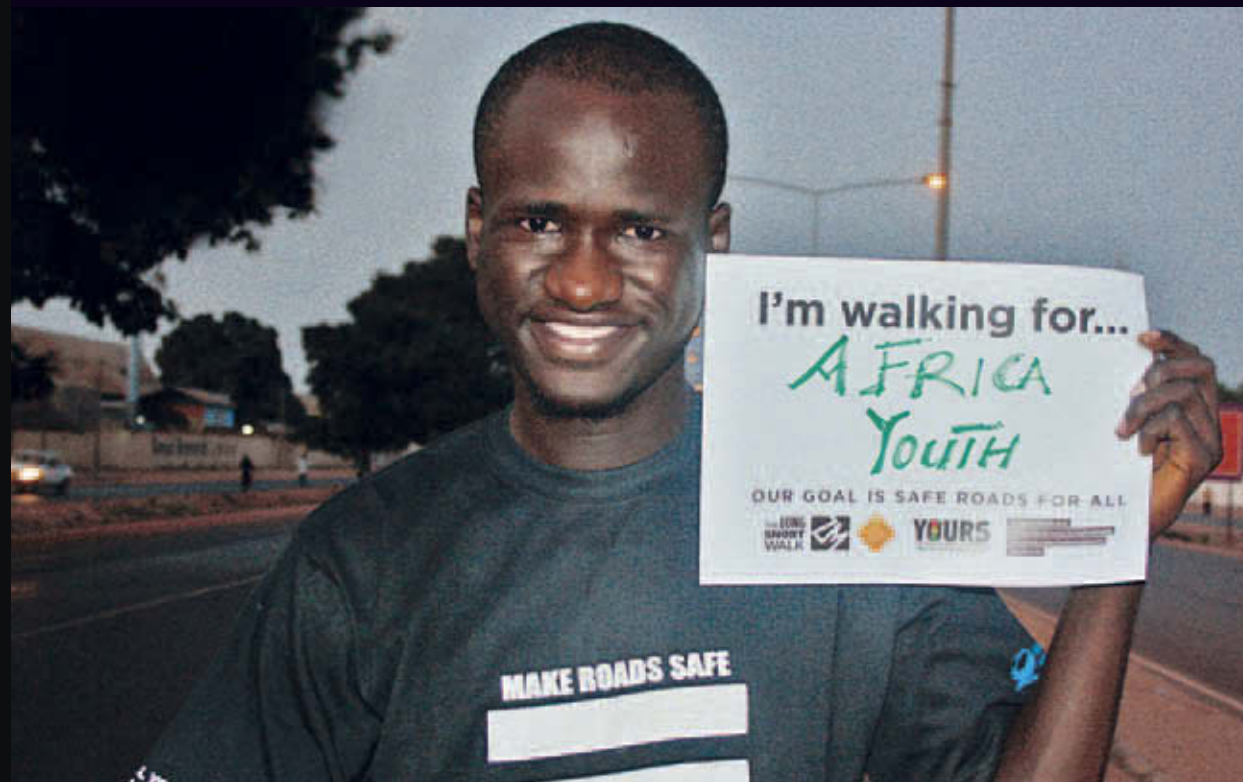
“After that phase, the track will be built. For a Formula One circuit, I will inspect it probably three or four times during the build process. Once finished it will be assessed. If it passes and is homologated for Formula One, then we go racing.”

While the homologation process involves a set of absolute requirements – from the minimum height of a pit wall to the capabilities of the circuit medical centre – the diverse nature of circuit design means inspectors frequently fall back on their experience, taking into account everything from the line-of-sight between corners to grandstand location.

The Commission treats temporary circuits no differently to permanent venues, but the requirement to build it afresh every year does complicate the homologation process.

“In my opinion, it is definitely more challenging for a street circuit,” says Singapore GP Director of Technical and Race Operations, Lawrence Foo. “The FIA stipulates that a new track is signed off 90 days before a race, and that any subsequent resurfacing is done by the 60-day mark. Because of the heavy load of daily traffic on our roads – which make up 90 per cent of the circuit – we have to continuously monitor the situation in order to meet those requirements.

“Furthermore, the nature of a live environment of a street circuit in downtown Singapore adds to the challenge. Unlike at a permanent facility, a large portion of the race infrastructure needs to be built and dismantled annually. Not only do we have to work closely with stakeholders and various government agencies to install this infrastructure on public and private property, we have to ensure that there is minimal disruption to daily traffic.”



 The Long Short Walk calls for better pedestrian safety across the world



Pedestrian safety

WALK OF LIFE

During UN Road Safety Week, 6-12 May 2013, the FIA and FIA Foundation, along with member clubs and road safety organisations around the world, took part in the Long Short Walk campaign, calling for 'Safe Roads for All' and highlighting the need for improvements in pedestrian safety >

BY MARC CUTLER



More than 5,000 pedestrians are killed on the world's roads every week. To highlight this issue and to promote better road safety, the FIA, FIA Foundation and member organisations led a number of events around the world in May 2013 as part of The Long Short Walk campaign, an initiative of the Commission for Global Road Safety.

The campaign is actively endorsing the new Commission report, 'Safe Roads for All', which calls for road safety to be included in the post-2015 Sustainable Development Goals currently being discussed at the United Nations. The Commission has set the target of reducing global road fatalities by 50 per cent by 2030, which it hopes will be included as part of the new Goals.

The report sets out a vision of a 'people first' approach to transport management and land-use planning, with effective speed control at its heart, arguing that safer roads and streets can contribute to reduced injuries and, by encouraging more walking and cycling, contribute to lower air pollution, low carbon transport and fight against obesity-related, non-communicable disease.

Thousands of people took to the streets during UN Global Road Safety Week to back this cause. In Johannesburg, South Africa, Nelson Mandela's granddaughter, Zoleka

Mandela, led a Long Short Walk event together with her family. It was carried out in memory of her daughter, Zenani, who was killed in a car crash aged 13.

Speaking at the event, Zoleka Mandela said: "This week, around the world, people have taken to the streets as we launched the Long Short Walk. There has been a huge wave of support globally. People are getting up on their feet and demanding action.

"In so many countries worldwide people are showing our world leaders that they have had enough. We can no longer neglect this global crisis, which destroys so many young lives. Let's make sure road safety is in the post-2015 Development Goals and let's save lives."

Dr. Sarah Barber, the World Health Organisation (WHO) South Africa Representative also walked with the Mandela family. "The solutions are well

known, measurable and proven," she said. "They are also very simple. We know exactly what's needed: speed limits and drink driving legislation to be enforced, safe crossings for pedestrians, a safe environment for children going to school and effective education campaigns. We hope that UN Global Road Safety Week and the Long Short Walk will help build momentum for these life saving measures. Our goal is safe roads for all."

In Washington, Kweku Mandela, Nelson Mandela's grandson, spoke at the UN Global Road Safety Week event organised by the Make Roads Safe campaign.

"My grandfather, Nelson Mandela, has fought his entire life for human rights, freedom and equality for everyone in South Africa and the world," he told the audience. "Now, as a result of the tragedy that befell our family three years ago, and in the name

of Zenani, we have a new fight – a fight for the right of young people around the world to walk, bike, and drive safely."

Kweku was joined on the steps of the Thomas Jefferson Memorial, where US leaders and hundreds of youth called for 'Safe Roads for All'. Hosted by Make Roads Safe North American Chairman, Hon. Norman Y. Mineta, the event included a prominent roster of US officials: Secretary of Transportation Ray LaHood; Surgeon General Dr. Regina Benjamin; Centers for Disease Control and Prevention Director Dr. Thomas Frieden; and National Transportation Safety Board Chairman Deborah Hersman.

In St Petersburg, Russia, a high-level forum featured leading policymakers and key figures, including: HRH Prince Michael of Kent GCVO, Patron of the Commission for Global Road Safety; Lord Robertson of Port Ellen, Chairman of the Commission for Global Road Safety; General Victor Kiryanov, Deputy Interior Minister of the Russian Federation; Michelle Yeoh, Global Road Safety Ambassador; Etienne Krug, Director of Injury Prevention at the WHO; and FIA President Jean Todt.

It was organised by the Commission for Global Road Safety in partnership with NGO Road Safety Russia. The Russian Federation has been playing a leading role in advancing global action to reduce the numbers of

WE CAN NO LONGER NEGLECT THIS GLOBAL CRISIS WHICH DESTROYS SO MANY YOUNG LIVES'

ZOLEKA MANDELA

CAMBODIA



GREECE



VIETNAM



S. AFRICA



CHINA



BRAZIL



N. IRELAND



GEORGIA



UGANDA



The Long Short Walk demonstrated that pedestrian safety makes sense in whichever language you say it



KYRGYZSTAN



THAILAND



BELGIUM



NEW ZEALAND



RUSSIA

Tens of thousands of people from nearly 50 countries around the world took part in the Long Short Walk in May of this year



PHILIPPINES



INDIA



ITALY



GERMANY

fatalities and injuries on the world's roads and is at the forefront of the call for renewed commitment to ensure that road safety is part of the post-2015 Sustainable Development agenda. Domestically, the Russian Federation has the most improved road safety of any G20 country as measured by deaths per 100,000, according to the WHO's recent Global Status Report on Road Safety 2013.

Speaking at the event, Lord Robertson said: "The Russian Federation has played a leading role in the global movement to save lives on the world's roads, through its support for the UN Decade of Action for Road Safety and its leadership in discussions on road safety and sustainable development. We are meeting in Russia to send out a strong message to the world during this UN Global Road Safety Week that it is possible to reduce road traffic fatalities. Through determined implementation of its domestic road safety policies Russia is improving her road safety performance, saving the lives of many of her citizens and setting an example to other countries around the world that are grappling with rapid motorisation."

In Brussels, the transport community came together to participate in a Long Short Walk coordinated by the FIA Region I office. Speaking at the event, FIA Region I Director General Jacob Bangsgaard said, "We are all

"I AM HAPPY TO SEE SO MANY PEOPLE COMING TOGETHER. WE ARE ALL PEDESTRIANS."

JACOB BANGSGAARD

pedestrians. Today I am happy to see so many members of the global road safety community, the EU institutions, and the general public, coming together to call for more protection of vulnerable road users."

The walk was followed by a demonstration of life-saving eSafety technologies organised by CLEPA and eSafetyAware at Autoworld. Bangsgaard, who is also Secretary General of eSafetyAware, said, "We believe a key role can be played by eSafety technologies which help to avoid accidents from happening in the first place."

The Long Short Walk campaign has also received widespread support from road safety NGOs around the world. At a recent meeting in Antalya, Turkey, the world's road safety NGOs took part in a Long Short Walk to call for action to save lives.

The meeting, which was supported by the WHO and the Road Safety Fund, followed a recent commitment by Turkey to cut the

number of road traffic deaths in Turkey by 50 per cent by 2020, the end of the United Nations Decade of Action for Road Safety.

Speaking at the NGOs conference, Etienne Krug, WHO director for the Department of Violence and Injury Prevention and Disability, said: "There is a sustained momentum building all over the world. This is very encouraging and it is largely due to the work that NGOs have been doing. I am strongly convinced that if road safety is to continue to make progress it will largely be because of the role that NGOs have played. NGOs have been advocating for and demanding more road safety efforts and also providing some of the services where governments have not been able to do so."

FIA Foundation Director General David Ward added: "NGOs are the beating heart of the Decade of Action. If you look at the road safety initiatives which have worked, many have NGOs at the core. Now that we start

to look at the second half of the Decade of Action, NGOs will continue to have a critical role to play in pushing to ensure that it receives adequate financing and support so that we can continue to build on the progress made so far."

The cause was further boosted by news that Plan International, a leading child development NGO, has added its voice to the call for road safety to be integrated into the post-2015 Development Goals. The NGO currently works in more than 50 countries to promote child rights, reduce child poverty and improve education.

Plan International CEO Nigel Chapman said: "When the world thinks about the goals it wants to set after 2015, it seems to me that, if you're talking about sustainable development, a safe way of getting to school has so many benefits."

Around the world, tens of thousands of people in almost 50 countries have walked over 100,000 kilometres for the Long Short Walk. Following the May launch, people taking part in the Long Short Walk will be voting for better roads and transport to be a priority in the UN's 'My World' global public survey for post-2015. The campaign will build momentum over the coming months as governments at the UN meet to decide which post-2015 Sustainable Development Goals to adopt. ■

SPECIAL REPORT BY JUSTIN HYNES

MEVICO MEXICO RISING

With the irresistible rise of Mexico as a major player on the world stage come endless opportunities and challenges, as those involved are rapidly discovering

INTERVIEW / ROAD SAFETY / DYNASTY OF DRIVERS / WRC'S IMPACT



SLIM WORLD, WIDE FOCUS

Business magnate Carlos Slim and his son, Carlos Slim Domit, scion of the world's wealthiest family, are giving back to Mexico, whether it's supporting motor sports via Escuderia Telmex or backing road safety and public health initiatives, as AUTO discovers in this exclusive interview

In a region where extreme wealth is a constant, the presence of a rich man at a Gulf State Formula One race is unremarkable. There are many here in Bahrain, from the F1 moguls themselves to visiting Emirati, oil barons and commodities kings. One man present, however, should turn even the heads of every tycoon in the place, but for the most part he goes entirely unnoticed. Carlos Slim, the world's richest man, comfortably patrols the paddock without attracting the laser-guided lenses of the legion of press photographers looking for Sunday morning celebrity visitors and happily mingles with the corporate guests of the Sauber F1 team, an outfit he helps finance by backing one of the team's drivers and through sponsorship in the shape of branding from Telcel, one of Slim's 200 or so companies.

Slim's anonymity here, where the wealthy are relentlessly pursued by team sponsorship acquisition types, is a microcosmic reflection of how the Mexican multi-billionaire moves through the wider world. He rarely gives interviews, does not court publicity and doesn't trumpet achievements or bury failures. Slim, and his family, who between them control a \$72 billion fortune, prefer to let their portfolio of companies do the talking, while they get on with the tricky business of managing the vast profits the businesses accrue.

And a large chunk of that quiet management involves wealth redistribution. While the charitable foundations of other multi-billionaires such as Bill Gates hit the headlines regularly, the work of the Slim Foundation and its associated charities often goes unreported. Today, though, Carlos Slim Domit, the mogul's son, wants to talk about the work his father's philanthropic agencies do, particularly in their homeland of Mexico.

While most of the Western world finds itself chugging through a meandering series of minor fiscal peaks and troughs, Mexico's economy is surging forward. Growth of 3.9 per cent in 2012 is forecast to be mirrored this year and similar gains are expected in 2014, according to the Organisation for Economic Cooperation and Development (OECD). Inward investment is ballooning,

domestic industry is booming and increased wealth is reflected in an ever-improving infrastructure and a proliferation of upscale malls, designer outlets and country clubs in the country's major cities.

However, despite the global success, at a local level the country remains riven by problems. According to the Mexican Government's National Council on Evaluation of Social Development, the number of Mexicans living in poverty in 2010 was 52 million, around 46.2 per cent of the 112 million-strong population. Extreme poverty, where people live on less than \$US76 per month in cities and US\$53 per month in rural areas, was deemed to affect 10.4 per cent of the population, or almost 12 million people. It is this discrepancy in Mexico's make-up that the Slims want to target.

"In Mexico, we work across very different types of charities," says Slim Domit. "We could divide them into four main subjects: the first is health at distance. With cell phones we can create health appliances so people can have access to better resources digitally. Also some of the things people go to hospital to check maybe don't require that so having the ability to check for free, with doctors at a distance, can help. We're also working to eradicate strong epidemic diseases in the community, working with different authorities from the federal and local governments. In some cases we're working with organisations like the Gates Foundation. We want to eradicate polio and other major diseases in the country.

"There's also research. For example, we're working together with the Broad Institute at MIT with its founder Eric Lander, who was one of the researchers involved in discovering the human genome. We believe that many diseases, old and new, will be solved through the development of genomic medicines. So most of the projects we're involved with are on a large scale, to either eradicate epidemics or to try to create processes whereby people avoid the diseases."

In tandem with large-scale health issues, the foundation has also found a focus in dealing with another global scourge, that of road deaths. Slim Domit is a member of the FIA Senate and as such is all too aware of an issue at the heart of federation activism – the fact that 1.3 million people are killed on the world's roads each year. The problem is acute in the family's homeland, with Mexican road deaths >

'MEXICO HAS A
VERY STRONG
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MANY YEARS'

CARLOS SLIM DOMIT

PHOTO: DAVID ROCKIND/BLOOMBERG VIA GETTY IMAGES

The world's richest man, Carlos Slim



THE SLIM FAMILY DEVOTES A LARGE PART OF ITS TIME TO REDISTRIBUTING ITS \$72 BILLION FORTUNE

PHOTO: CHRIS GOODNEY/BLOOMBERG VIA GETTY IMAGES (1), SUTTON IMAGES (2)

Carlos Slim Domit with FIA President Jean Todt and Global Road Safety Ambassador Michelle Yeoh (below), and with F1's Sergio Pérez (right)

topping out at over 24,000 annually. Slim Domit says the foundation is attacking the issue on a number of fronts.

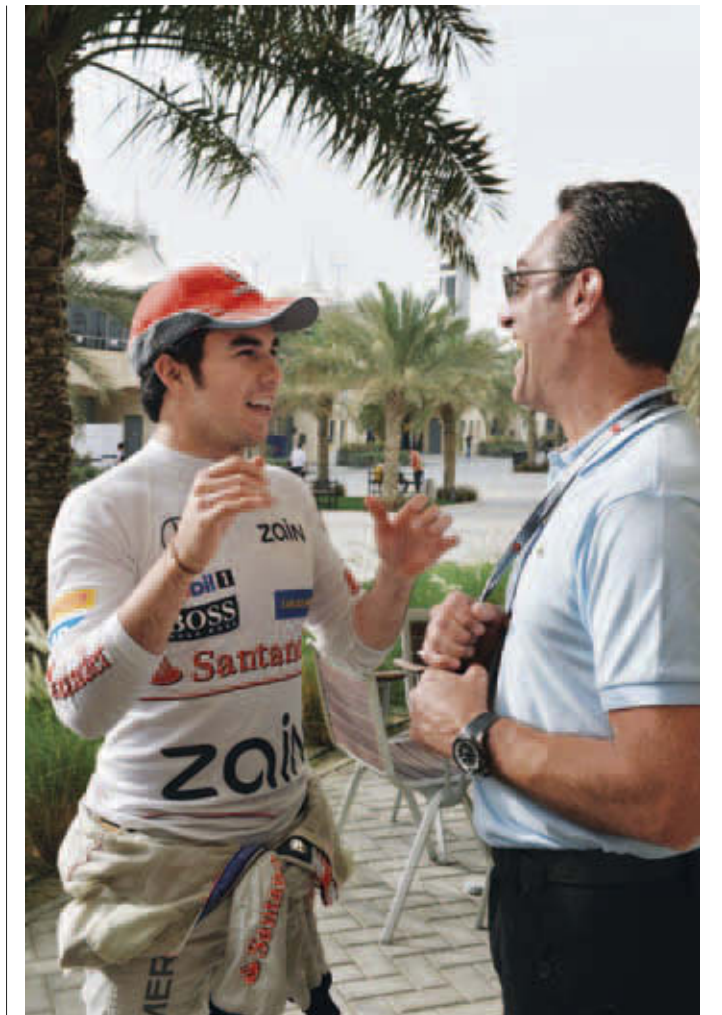
"Road safety in Mexico is more about prevention than correction," he says. "Road accidents in Mexico are responsible for the most deaths in the 5- to 49-year-old age range. Sixty to 70 per cent of those injured or killed are people that were not driving. They were passengers or pedestrians hit by a car. So we're taking the approach that we must target not only drivers but passengers and pedestrians as well. We believe that 90 per cent of the fatalities are avoidable."

The key to improving the road safety habits of regular drivers is via education, insist the Slims, and as keen fans and promoters of motor sport in Mexico and worldwide, they have mobilised many of the stars from their Escuderia Telmex stable to educate Mexican road users.

"These drivers are celebrities, personalities in the public eye, and they have the moral authority to talk about road safety," says Slim Domit. "Firstly, they are the only ones that drive at the limit; and secondly their lives depend on respecting the rules. Those attributes allow the drivers to have the authority to go to schools and talk to people about road safety."

"It's a presentation that involves hard car accident data, then we also include the testimonial of a man who ended up a quadriplegic because of an avoidable accident," he adds. "It's a dynamic process between the driver and the audience. The driver interacts with the audience and focuses on tackling stigmas, talking a lot to women, for example, because women are the ones that can ask the guys they are dating to slow down."

The Slims' companies also promote good driving through the media. "Right now we have a very strong billboard, TV and radio campaign together with Fox and other channels," says Slim Domit. "I think we have something like 15 companies working on initiatives like this and it's a long-term approach. Instead of all of us going at it at the same time and then for six months there's nothing, we are trying to keep the balance so we can spread the message on a sustained basis."



"We are also opening driving schools in museums for kids and what we're doing there is that when the kids get their 'license' we give the kids a book of penalty tickets, so that they can give a ticket to their parents whenever they don't use a seat belt, or whenever they are speaking at the phone, whenever they break any core driving guidelines. The parents then have to pay defined penalties to the kids. That programme is called Guardians of Road Safety. So far that's proving successful."

The final weapon in the Slims' quest to reduce the death toll is unsurprisingly wielded at a political level, the family using its status to push federal and state authorities to improve enforcement of existing regulations and to introduce new road safety measures.

"The government is very sensitive to the issue of road safety as it has become such a big problem. So for them what we are doing is working together with the Red Cross, with some of the insurance companies, the association of auto manufacturers, with the Telethon, which is the biggest support programme for kids with disabilities, most of them because of car accidents or similar, and with Fox TV. The FIA is the one pulling all of them together, so it's a big group."

"One of the interesting things we've done is in association with the national university," he adds. "The university has carried out research that allows it to isolate on Google Earth exactly where problem areas are, to street level. So you can take 20 metres of street where you have the most deaths and concentrate on those points. For the government, that's very interesting because it doesn't cost, it doesn't affect their budgets. It's simply a matter of better signage or police car placement. The impact is immediate."



'WE MUST TARGET NOT ONLY DRIVERS BUT PEDESTRIANS AS WELL. WE BELIEVE THAT 90 PER CENT OF THE FATALITIES ARE AVOIDABLE'

CARLOS SLIM DOMIT

PHOTO: SHUTTERSTOCK



“This is a key thing. For us it’s about exploring measures the government can implement at almost zero cost. Usually the problem is that if the government is asked to change the rules completely, the budget is too high, so they don’t go ahead with it. Starting with the easy things will help us go forward.”

With a network of philanthropic endeavours to administer and the not insignificant task of running an enormous business empire to deal with, there isn’t much time for the family members to indulge other passions. But when there is a window, it’s motor sport that takes pride of place in the family’s affections.

Slim Domit has been an active promoter of motor racing in Mexico and beyond for over a decade and through Escudería Telmex has aided the progress of talented drivers such as Sergio Pérez and Esteban Gutiérrez from their local kart tracks to the very top, as F1 racers.

“We started 12 years ago,” says Slim. “There were sponsors helping drivers and we did that but then the driver retired or wasn’t good enough and we would have to wait a generation for another outstanding driver to come along. So what we did was start with karting and support them all the way to Formula One, where we would stop.

“Actually the drivers have been the ones doing all the work,” he smiles. “What we have been doing is trying to help them get the right seat and be in the right place to shine and demonstrate their capacities, their talent.”

Slim Domit has also been active, as an FIA member, in trying to bring Formula One back to Mexico, which last hosted a grand prix in 1992. The entrepreneur believes a new Mexican race makes complete sense for the series.

“The bond [with F1] is very strong and there could be a good future ahead,” he says. “People here are very close to motor sport because of the two Mexican drivers. I believe it is the right choice to have more races in the Americas. Races in Europe are difficult

to see in America because they are either at 3 o’clock in the morning or 7 o’clock in the morning on a Sunday. But the timing of races in America is perfect for Europe.

“I believe there is potential to do more races in the Americas and I believe that Mexico is in the right spot to do it,” he adds. “It’s a stable country by and large, our economy is doing quite well and we have drivers people can identify with them. All of the pieces are coming together and I believe the potential promoters are doing a good job in trying to secure something.”

Helping bring Formula One back to Mexico would be a personal pleasure for Slim Domit and would, in a small way, represent a sign of Mexico’s rapid progress. Both Slims are hugely positive about the future of their homeland and believe that apart from their own efforts it’s the efforts of all the country’s people that has put Mexico on the road to becoming an economy capable of challenging the might of rising economic powers such as the BRIC nations of Brazil, Russia, India and China.

“We believe that the potential of the country is very strong,” says Slim Domit. “The right decisions are being made to make the country capable of achieving all it can become. The government is doing well and has put in place very strong reforms from education through to communications, and the people are fantastic, incredibly motivated and willing to make things better.

“With all the opportunities we have, I believe the future will see us focused on three main areas: better education, so we can have a generation of people doing good things; capitalising on the strong economy we have by generating a strong internal industry to generate more employment and finally, we need to develop so that we do not miss any opportunities. It is achievable. Low interest rates worldwide allow you to finance the big things and to tick the big boxes in terms of infrastructure. Going forward, I believe that Mexico has a very strong future and that this strength can last for many years. I’m very hopeful indeed.” □

PHOTO: SUTTON IMAGES

Diego Menchaca
Formula Renault 3.5
Formula 1

Luis Felipe Montano
NASCAR Mexico

Ricardo Pérez de Lara
SUPER COPA TELCEL

Tomo Pérez
NASCAR Mexico

Daniel Suárez
NASCAR Mexico

Pancho Nave
Rally ATCC

Ruben Rovelo
NASCAR Mexico

Jorge Cavallos
Formula Renault 3.5

Memo Rojas
GRAND AM

Chapulin Diaz
American Le Mans

Esteban Gutiérrez
Sauber Formula 1 Team

telcel

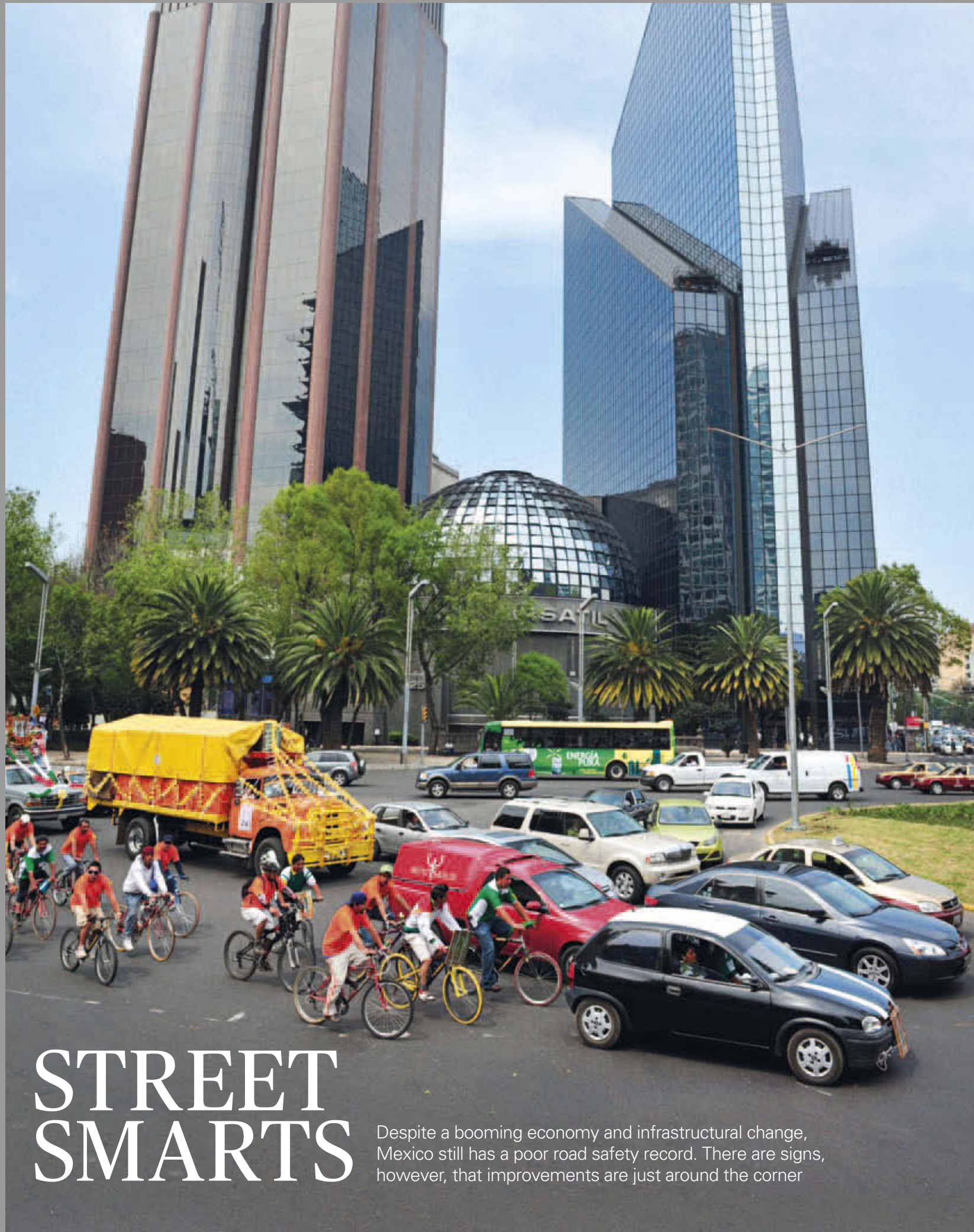
Escudería
TELME X
Hecho. En México.

telcel racing
LA RED DE LA VELOCIDAD

EN infinitum.

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STREET SMARTS

Despite a booming economy and infrastructural change, Mexico still has a poor road safety record. There are signs, however, that improvements are just around the corner

According to newly released figures by the World Health Organisation (WHO), some 17,300 people lose their lives on the roads of Mexico each year, or some 14.7 per 100,000 of the population. Taken in isolation, these levels may not seem that shocking. But when compared with somewhere like Japan, which has 5.2 deaths per 100,000 or the UK, where it tumbles to 3.7 deaths per 100,000, it is obvious that the country has a road safety problem.

And the main issue, it seems, are car drivers. In its latest Global status report on road safety, the WHO notes that while the greatest number of deaths on Mexican roads by group are among pedestrians, some 23 per cent of deaths on Mexican roads occur among drivers and passengers of four-wheel vehicles.

While drivers in Mexico are required by law to have licenses, the methods of obtaining a license vary greatly. In 2011, 14 of Mexico's 32 states, home to just over half the population, granted licences without the need to sit a practical driving test. Three of those 14 states run compulsory courses, which students pass merely by attending. Five more have written exams, but passing the multiple-choice paper is considered easy. In many parts of Mexico, though, obtaining a license is simply a matter of paying the correct fee.

Mexico's road safety problems also extend to enforcement of the country's traffic laws. The WHO reports that while the country has laws governing speeding, seat belts and drink driving, it says that enforcement rates are low, with correct policing of drink driving given a rating of just six out of ten and seat belt use scoring just five. Seat belt law also only applies to front seat passengers.

But it's not all bad news. As part of the Road Safety in 10 Countries initiative, the WHO, working in association with the Global Road Safety Partnership, and funded to the tune of US\$125 million by Bloomberg Philanthropies, has prioritised Mexico as one of 10 countries most at need of aid when it comes to road safety.

Mexico, along with Brazil, Cambodia, China, Egypt, India, Kenya, the Russian Federation, Turkey and Vietnam, accounts for 48 per cent of the total road crash deaths and injuries in the world. The RS10 initiative was developed to support governments in the 10 project countries to implement good practices in road safety in line with their national road safety strategies. This will be achieved primarily by focusing on behavioural risk factors, trauma care and data information system improvement.

The RS10 project in Mexico is being led by federal and state project working groups and builds on a previous project from 2007-2009. Its



Pedestrians suffer the highest number of road deaths, but drivers are the major focus of Mexico's road safety drive

key sites are Monterrey, San Pedro Garza, León, Guadalajara, Zapopan and the capital, Mexico City. Project activities will continue to focus on controlling drinking and driving, and increasing seat belt wearing.

The Mexican Red Cross is also getting involved. In association with the Global Road Safety Partnership, it hopes to save more than 60,000 lives, prevent 110,000 disabilities and three million road-related hospitalisations by 2020.

Launching its scheme in 2011, Daniel Goñi, President of the Mexican Red Cross, said: "The most affected group is at the same time our strongest means to curb the disastrous trend – our youth. Volunteers will remain the key to saving lives and contributing to national road safety prevention targets."

At grassroots level, action is also being taken by FIA member club the Organizacion Mexicana del Deporte Automovilistico Internacional (OMDAI) and by Escuderia Telmex, which has mobilised Mexican racing drivers to act as role models for young Mexicans, through the 'Pilotos por la Seguridad Vial' (Drivers for Road Safety) programme.

Working with the federal government health secretariat, the FIA and the Red Cross, drivers such as F1's Sergio Pérez, the WRC's Benito Guerra, IRL star Michel Jourdain, Sportscar driver Guillermo Rojas, and NASCAR's Antonio Pérez and Salvador Durán, have all given time to spreading the initiative's key 'A, B, C, D' message – not driving under the influence of alcohol or drugs; protecting children (bébes); use of seat belts (cinturón de seguridad); and reducing speed (disminuya su velocidad).

Endorsing the scheme last year, outgoing Mexican president Felipe Calderon said: "A third of Mexicans have a family member or a friend who has been involved in or affected by a road accident. It is most painful that the accidents are avoidable, and that can be done by taking the safety advice of these drivers on how to drive in this country."

Even big corporations are weighing in. As part of the recent UN Global Road Safety Week, logistics giant FedEx donated US\$98,000 to implement a Safe School pilot project in association with the International Road Assessment Programme (iRAP) and Safe Kids Worldwide.

The project, in Mexico City, is adapting iRAP methodology to assess and identify safe routes to school. The aim of the project, which is being undertaken with technical assistance from the University of North Carolina, is to provide star ratings on the safety of a particular school environment.

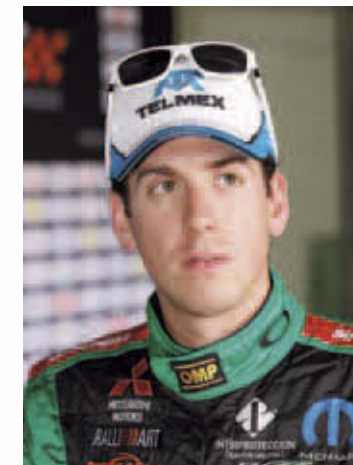
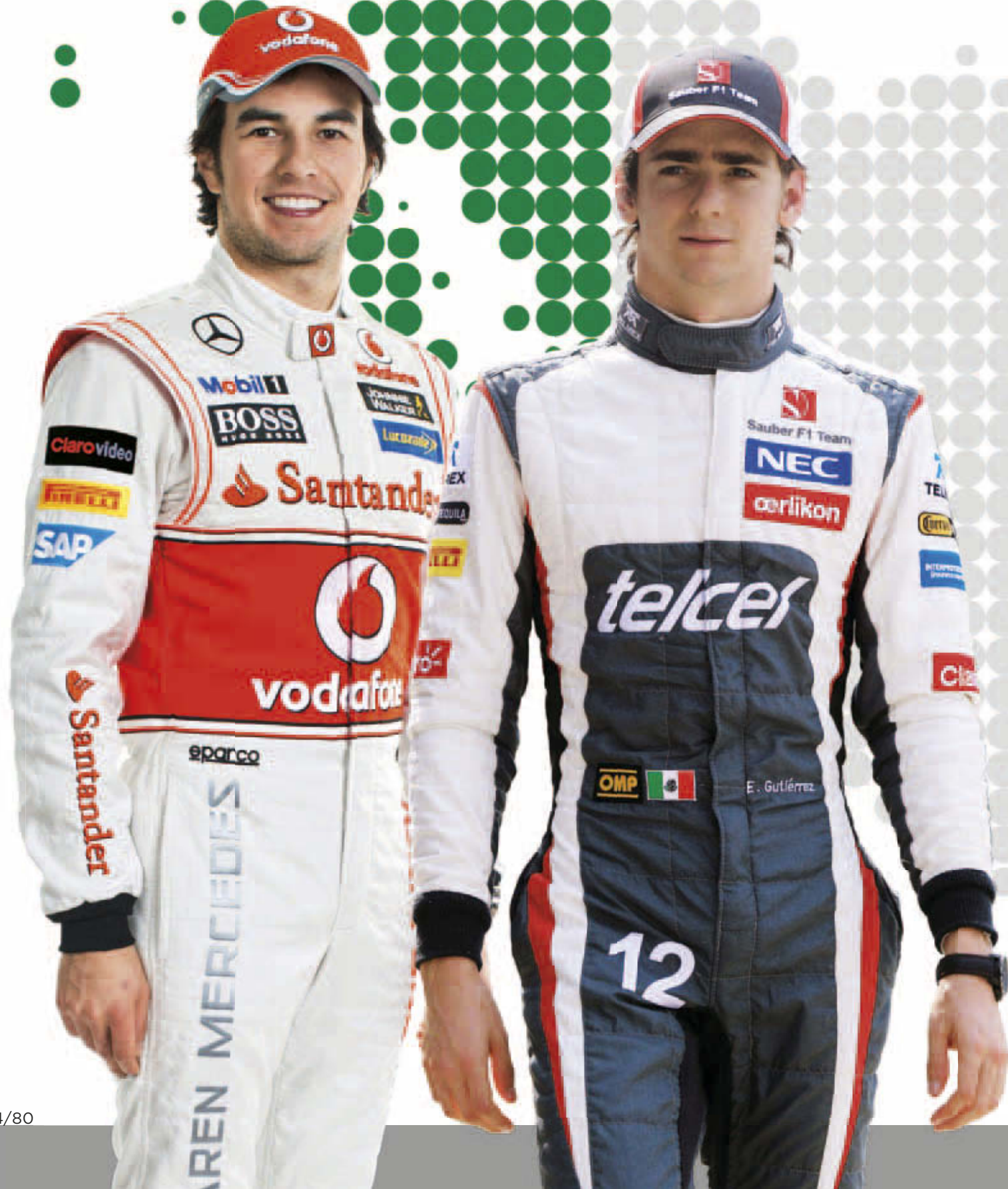
If star ratings can be successfully applied, they can provide local communities with a simple and transparent advocacy tool, and give local road engineers and enforcement authorities a clear menu of costed countermeasures to reduce child injuries. □



PHOTOGRAPHY: REX FEATURES, SHUTTERSTOCK

BACK ON THE WORLD STAGE

After a fallow period, Mexican motor sport is back in the limelight, with the rise of F1 drivers such as Sergio Pérez and Esteban Gutiérrez fuelling a resurgence of interest at grassroots level and leading to talk of a new grand prix for the country



McLaren's Sergio Pérez (opposite, left) and Sauber's Esteban Gutiérrez (opposite, right) are the poster boys for Mexican motor sports. Benito Guerra Jr. (inset) also turned heads by clinching the Production World Rally Championship last year

When Héctor Rebaque bowed out of Formula One at the end of the 1981 season following the US Grand Prix in Las Vegas, few imagined that they would have to wait another three decades before seeing a racing driver from Mexico line up on a grand prix grid.

Mexico, after all, had provided the sport with the Rodríguez brothers, Pedro and Ricardo, who between 1961 and 1971 had flown the flag for the nation on the biggest motor sport stage. This was a golden era, when the country boasted crowds of up to 200,000 people every time F1 came to Mexico City's sprawling Magdalena Mixhuca circuit.

And even if there was no Mexican Grand Prix from 1971 to 1985, when Formula One did eventually return to the country after a 16-year hiatus, huge crowds once again filled out the re-christened Autódromo Hermanos Rodríguez and the omens for Mexican motor sport seemed bright.

But then the light faded. Mexico City dropped off the F1 calendar in 1992 as the sport moved on to pastures new and Rebaque remained the last driver to wear the green, white and red of Mexico at a grand prix until 2011.

Formula One gave way to US-based open-wheel racing, with drivers such as Adrián Fernández and Mario Domínguez starring in CART and IRL. NASCAR gained a toehold and continues to be a major draw. Elsewhere, rallying became the standard bearer for international motor sport with the World Rally Championship including Mexico on its calendar in 2004 and returning every year since, bar 2009.

The presence of the series in the state of Guanajuato even gave rise to a local hero in the shape of Benito Guerra Jr. The Mexico City-based driver made his WRC debut at his home event in 2006 and last year claimed the Production World Rally Championship title. But in traditional single-seat racing, the pickings were lean.

Two years ago, however, that all changed. At the 2011 Australian Grand Prix, 21-year-old Sergio 'Checo' Pérez slotted himself into the cockpit of a Sauber C30 and became the fifth Mexican to compete in Formula One.

Heavy funding from Mexican telcoms giant Telmex had installed the young GP2 graduate in the minds of many as a makeweight 'pay driver' in a partnership in which the talented Japanese driver Kamui Kobayashi would clearly be the dominant force. However, Pérez clearly hadn't read that script and his battling drive to seventh in Melbourne quickly marked him out as a driver to watch.

The rest is history. A solid first season became a firecracker second, as Pérez racked up three podium

finishes and even battled two-time champion Fernando Alonso for victory at the Malaysian Grand Prix. By round 14 in Singapore he was being touted, via his membership of the Ferrari Driver Academy, as a replacement for the underperforming Felipe Massa at the Italian team.

It was another heavyweight team that stepped in, however, and shortly after Pérez claimed third place at the Italian Grand Prix, he signed for McLaren. He finished the season with 66 points, six more than Kobayashi.

Having left Sauber, Pérez's place at the Swiss team was taken by another wunderkind compatriot – Esteban Gutiérrez. The 21-year-old had come to Europe in 2008 and immediately made >

waves by winning the Formula BMW Europe championship at his first attempt. The feat was repeated in GP3 in 2010, and after finishing third in the 2012 GP2 championship, the racer from the city of Monterrey, in north-east Mexico, was given his F1 shot.

However, while their rise to the top echelon may suggest that rich seams of racing gold are being mined on the kart tracks of Mexico, both drivers are quick to point out that motor sport in the country still has many miles to go.

“When I was starting out, motor sport was not so developed,” says Gutiérrez. “There was Rotax, which was the biggest and most popular competition. It was regional and at the end of the year they would organise a national competition. In Monterrey, all the races were held between just two tracks. The structure was very basic, with not more than 10 or 11 karts, so it was a small grid.”

For Pérez, the lack of solid infrastructure led to an early move away from his homeland to race in Europe. “To really succeed in Formula One is difficult for Mexicans,” he says. “Because of what the structure is like there, you have to leave the country early to go and prove yourself, usually in Europe. I left when I was 15.”

“If I had to give young Mexican drivers any advice, I’d say you need to have a lot of determination. When I look back and remember some of the difficult days I’ve been through – I don’t think many kids could manage it. They need a lot of support from their families and everything.”

Enter Escudería Telmex. Founded by FIA Senate member Carlos Slim Domit, the programme has, since 2002, sought out young racing talent and attempted to guide them from the kart tracks of their homeland to the biggest stages in world motor sport. According to Carlos Jalife, editor of Mexican motor sport monthly *Fast Mag*, Slim’s support has been the main hope for racers looking to climb the ladder.

“Many years ago, Mexico had a very successful Formula 2 category, with a lot of good drivers racing,” explains Jalife. “Adrián Fernández was racing in the US and everybody thought the future was good. But I think Carlos always felt that since it was 20 years since Hector Rebaque had raced, the country needed to get to F1. It was his goal to make that happen. The aim of Escudería Telmex was to get a driver to Formula One within 10 years, and with Checo that happened.”

The initiative initially pinned its hopes on Salvador Durán, but when the driver from Mexico City failed to progress from Formula Renault 3.5, Pérez became the great hope.

“Checo was a long-term project for Escudería Telmex,” says Jalife. “Esteban is more a family project. He really is a wonder kid. He wanted to race because his brother was racing, then started beating everybody, so his family took him to a driver coach. This guy was a national champion, and when they asked him how good was Esteban, his answer was that he was clearly very good.”

The success of Mexico’s F1 poster boys has undoubtedly revitalised enthusiasm for motor sport in the country, though it hasn’t come easy. “The economic crisis certainly didn’t help,” says Gutiérrez, “and then



we have this difficult situation with the drug war. This was not great for the sport, either. You’re talking about young kart racers, and when they had to leave the city to go to the race... I wouldn’t say it was dangerous, but there was definitely an atmosphere around.

“I think things have changed now,” he adds. “There is much more interest. But we do lack a structure. We’re missing good kart circuits and not only circuits for karting but single seat venues. More proper tracks with proper safety, all adapted to professional racing – I think this is an area where we can improve a lot. Hopefully with the economy getting better and better each year, and at the same time us here making more noise and getting good results, everything will come back.”

The first steps towards building that infrastructure have already been taken, with the establishment of a national karting championship in 2013, the first the country has seen for many years.

Supported by FIA member club the Organización Mexicana del Deporte Automovilístico Internacional (OMDAI), the Mexican Motorsports Federation, the International Karting Commission (CIK) and by Escudería Telmex, the recently launched FIA México National Karting Championship, known as Reto Telmex, is an eight-round

‘THE CHANCES OF A MEXICAN GRAND PRIX ARE HIGH. EVERYONE IS PUSHING REALLY HARD. IT WOULD BE HUGE’

SERGIO PÉREZ

series aimed at 14-17-year-old racers. “The series visits a number of states, including Morelos, Guanajuato, Puebla and Mexico City, and when it’s finished we’ll have a national championship for the first time in 10 years,” says Jalife.

The establishment of the series will be a key part in the discovery and future success of homegrown racers. “The fear was that there was no lineage,” says Jalife. “Escudería Telmex have a young driver, Jorge Cevallos, who is racing in Formula Renault in the UK, and another, Diego Menchaca, but after them there are no more really good kids coming through. We are not producing enough drivers. It all depends on the families supporting them. It’s important to make sure that in 10 years’ time there are guys following Checo and Esteban to F1.”

An obvious source of encouragement for any youngster would be seeing a Mexican Grand Prix back on the F1 race calendar. The arrival of Pérez and Gutiérrez to the series has stirred rumours of a return to the Autódromo Hermanos Rodríguez in 2014, with a number of high profile businessmen being linked with the plan, including Alejandro Soberon, chief executive of CIE, the world’s third largest live entertainment company, and US entrepreneur Tavo Hellmund, who was involved in the project to build the Circuit of the Americas in Austin, home of the recently resurrected US Grand Prix. The proposal has also received enthusiastic backing from Formula One promoter Bernie Ecclestone.

Pérez admits that moves are afoot and that he is naturally a keen advocate of a race in his homeland.

“I think the chances of a new grand prix are very high,” he says. “I’m involved on that side. Everyone is pushing really hard. It would be huge. Mexico is really passionate about motor sport. It would grow the sport even more.”

“We saw it last year in Austin, which was full of Mexicans,” he adds. “It would be good for the sport itself, but I think it would also be good for the country as well. People would realise how beautiful Mexico is. I really hope for the good of the country that we get our own grand prix.”

While Gutiérrez agrees, the Sauber driver is more cautious with a timeline for F1’s return: “It is the right time for a Mexican Grand Prix to happen but I don’t think it will be easy to do within the next 12 months. However, hopefully within two years things will get on their way.”

Whether a new grand prix takes place or not, it is clear that motor sport is once again front page news in Mexico and that an appetite for racing is growing fast – not just amongst spectators but also participants.

“Mexico motor sport has been growing, but the interesting thing is it is growing at grassroots level,” asserts Jalife. “Before it was simply too expensive. People wanted cheaper motor sport and there was a lot of racing in the streets.”

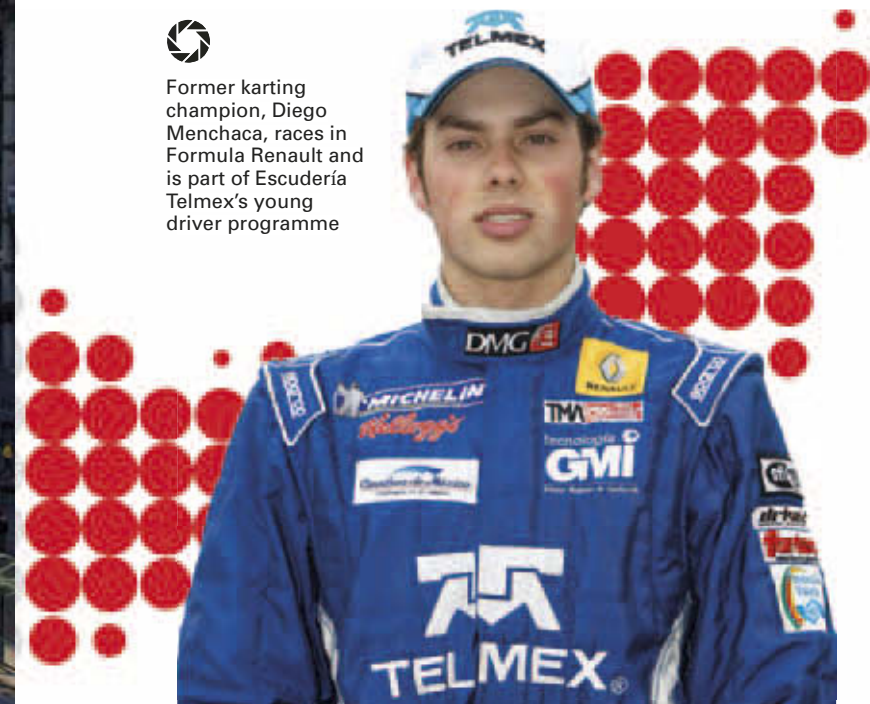
“There was a huge increase in drag racing. The authorities realised it and so there has been a big growth in the sport at places like the Hermanos Rodríguez. It was very important for growth that the racing was affordable and that was. And then of course because of Checo, everyone wants to be a driver as well.” □



There are plans to bring F1 back to the Autódromo Hermanos Rodríguez in Mexico City as early as 2014



Former karting champion, Diego Menchaca, races in Formula Renault and is part of Escudería Telmex’s young driver programme





The FIA World Rally Championship has flown the flag for top-level motor sport in Mexico for a decade and its positive impact has been felt far beyond the event stages

GROWTH IS RALLYING'S CALL

When the World Rally Championship landed in Mexico in 2003 for an 'observation' round as part of its candidacy for inclusion on the following year's calendar proper, Cuquita Ruiz, Chief Executive Officer of the Guanajuato Tourism Board, expected the FIA-approved event would be a win-win for the state. "[The rally] will no doubt bring both economic and social benefits to the State of Guanajuato," he said.

In the decade since the inaugural event, Ruiz's words have come to pass in a variety of ways, not the least of which has been in improving the health of many of the state's poorest citizens.

For the past six years, the rally organisers Rallymex have worked with state authorities to stage the Rally de la Salud (Health Rally) in the run-up to the main event, aiding local health initiatives to improve the quality of life of the 25 communities that live along the route of the rally. In addition to providing basic supplies like wheelchairs, hearing aids, and walking frames to those in need, the Health Rally brings medical care in its wake.

Mobile medical units offer dental care, diabetes and hypertension testing, medical check-ups, plus early detection of cervical cancer, high-risk pregnancies, and breast cancer.

A number of surgical procedures are also undertaken as part of the travelling programme, including cataract, hernia, reconstructive surgery for cleft lip and palate, as well as operations to alleviate burn damage.

The Health Rally is the most visible sign of motor sport's ability to positively influence event localities. But as former Guanajuato state governor, Juan Manuel Oliva Ramírez, explained in the run-up to



As part of the Rally de la Salud, mobile medical units offer free check-ups to the rural communities of Guanajuato

the 2012 event, the rally's impact has been felt in a wider way, by providing an economic boost to the state.

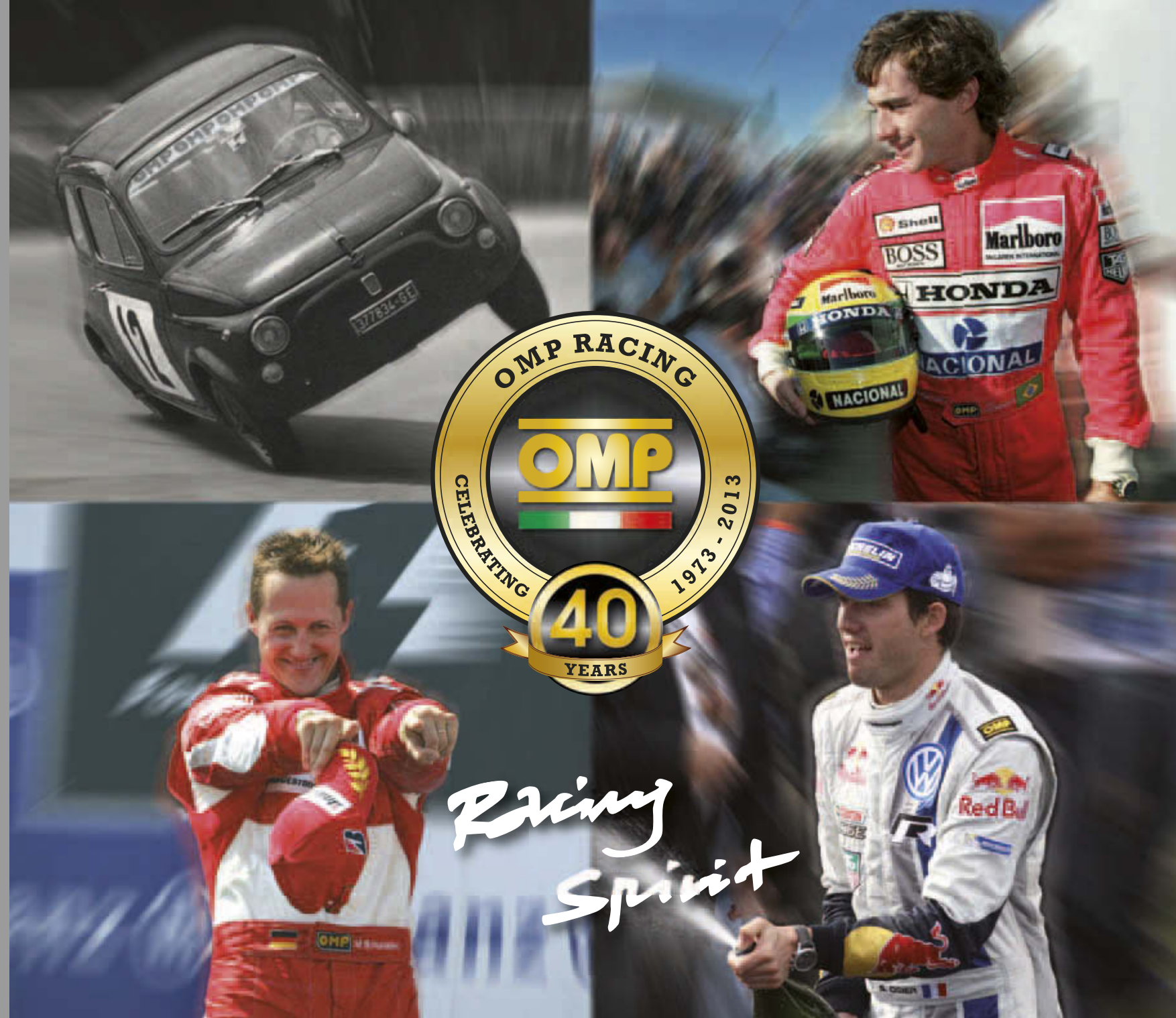
"The WRC has changed us, permanently," he said. "It has allowed us to stand on the world stage and be scrutinised as any other region on the planet, our results measured to the same standards. Where we have been found wanting, we have gritted our teeth, learned, and grown. We are better for this."

According to figures released by Rallymex, last year's rally was seen by more than 350 million TV viewers in 180 countries. But while the benefits to tourism of increased media exposure are difficult to quantify, the almost half a million spectators who flocked to the 2012 rally's main hubs of León, Silao and the town of Guanajuato speak for themselves. The Ceremonial Start in Guanajuato attracted 55,000 excited fans, while the Super Stage in León was watched by 20,000 people. In a survey, 87 per cent of attendees believed the event was

'outstanding' quality.

The rally also serves to draw investment to the region, not least the booming auto industry. Last year came the news that Honda will build a \$400 million factory in the town of Celaya, where it will provide over 3,000 jobs. The Japanese company follows GM into the region, with the American giant already operating a plant in Silao.

While the rally itself can't claim to have single-handedly influenced the decisions of major industry figures, it has undoubtedly focused some attention on an area of central Mexico that until a decade ago was more famed for its museums of naturally mummified bodies than for any thriving industry. The WRC has not only helped to transform Guanajuato's fortunes, but is proof positive that motor sport leaves an actual legacy for local communities beyond the temporary thrill of competition. □



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FIA Formula 3

INSIDE THE NEW EURO ZONE

Only in its second season, the FIA Formula 3 European Championship is quickly gearing itself up to be not just the fast track into Formula One, but also one of most thrilling championships on the racing calendar, as AUTO discovered during round two at Silverstone earlier this year >

BY RICHARD ROGERS



Drivers from 15 countries around the world now compete in the increasingly prestigious F3 European Championship



Leaving behind the flags, fans and bustling hospitality of the Silverstone Wing and the FIA World Endurance Championship, you take a clattering shuttle bus ride across the infield towards the FIA Formula 3 European Championship paddock. Marooned in a bare expanse of concrete, at first glance it looks slight.

Sidestepping engineers as they manoeuvre empty cars into their assigned berths, you walk amongst the awnings, and see drivers dissecting their performance; team bosses sitting tête-a-tête with journalists; officials sharing a joke. It is alive with adrenaline and activity, and this is when the scale of the series becomes apparent.

Prema Powerteam, Mücke Motorsport and Carlin – the biggest, most illustrious names in Formula 3 racing are here, teams who delivered world champions Jacques Villeneuve and Sebastian Vettel to Formula One. Flags from as far afield as Colombia and Israel fly above trucks bearing licence plates from across Europe. The grid is 28 cars strong, an impressive feat for a series that is still only midway through its second season.

And that is why, amid all the excitement, another sentiment is readily apparent: relief. More than once you hear Gerhard Berger – President of the FIA Single Seat Commission and the man who built this championship – described as a saviour. Yet the former GP-winner, who has created a revitalised series

with a fresh set of sporting regulations, believes there is a lot more to be done on the road ahead.

“There are just too many championships running. Budgets are split, drivers are split, the whole system is a mess. We’re trying by small steps to change it but you can’t force it overnight,” says Berger.

“It [has been] very difficult,” he continues. “I saw for many years different regulations and interests and costs slowly building up in different countries. The reality is there is not a market for all this. To bring it back to one >



The son of rally legend Stig, Briton Tom Blomqvist (above), is contesting the FIA F3 Euro Series with one of the new entrants, Eurointernational



Team boss Trevor Carlin insists that a revamped F3 series was inevitable: “The changes had to be made. Nothing stays the same and times are tough.”



‘A LOT OF PEOPLE WERE AGAINST IT, BUT AS WE CAN SEE NOW, IT WAS THE RIGHT THING TO DO’

GERHARD BERGER



Italy's championship-winning Prema Powerteam has four drivers competing this year, including 2012 runner-up Raffaele Marciello (above) and rising British hopeful Alex Lynn (left)

strong championship meant a lot of people were against it, but as we can see now, it was the right thing to do."

Berger says he was not expecting such a strong grid and he is impressed by the quality of both the drivers and teams. He does admit that he would like to see some French teams such as DAMS or Signatech join the championship. He'd be keen to have another manufacturer as well, since Dallara is the only supplier at present. But even as it stands, he firmly believes the new championship is already the best formula en route to F1. And his faith in the series is shared by team bosses in the series.

"Our passion is Formula 3 and what we want to do is make sure it survives," says Trevor Carlin, founder of the eponymous team that has won eight British Formula 3 titles. "There was nothing more saddening than having the European series and British series with just 13 cars each, knowing full well that if we put both together we'd have one strong championship."

It is British-based teams such as Carlin that have faced the biggest challenge by leaving their national championship, which now runs to a reduced four-round season. Yet Carlin is wholeheartedly behind the new championship. "The changes had to be made," he says. "Nothing stays the same forever and times are tough."

"Gerhard Berger has done a great job. He saw the problems and he had to deal with a lot of people with emotional attachments. He had to overcome that and go for what was best. You have to remember that outside Formula One, Formula 3 is the longest-running championship organised to a set of FIA regulations. We want that to continue."

"I'm happy to see 30 competitive Formula 3 cars on the grid; it means it's got some credibility in the market place. The drivers want to come because it is a great platform for sponsors. We had a lot of interest, and could have run five cars."

Carlin is one team owner hoping that the new F3 championship provides a foundation



Puerto Rico's Felix Juan Serralles, racing for the Fortec team, makes some final adjustments before qualifying at Silverstone

'IT'S ALWAYS A STRUGGLE, BUT IT'S ABOUT PUTTING YOURSELF IN THE BEST POSSIBLE POSITION'

ALEX LYNN





Australian Richard 'Spike' Goddard (left) in his personalised ThreeBond-Nissan for the T-Sport team

Audi and Toyota at a WEC round, or Mercedes, BMW and Audi at a DTM event.

"With F1 so incredibly difficult to get into these days," he says, "it's now more important than ever to be racing in front of these kinds of manufacturers – companies that might be able to give a driver a professional career, not just in Formula One but in sports cars or touring cars."

In fact, last year's inaugural winner, Daniel Juncadella, is already competing in DTM for Mercedes. But while former champion Paul Di Resta has proved that the touring car series can be a springboard to F1, for many junior single seater competitors, grand prix racing is the goal.

"I'm absolutely setting out to win this year, that's the aim for me, and F1 is the goal, of course," says Alex Lynn, who competes for Prema Powerteam, the squad that took Juncadella to the 2012 European F3 title. "It's always going to be a struggle, but it's about putting yourself in the best possible position."

Tom Blomqvist, son of rally great Stig, is racing for series newcomers Eurointernational and while he has his sights firmly focused on this season, he admits that drivers outside of the big teams face a tough challenge.

"We have to be realistic," he says. "[My] team are professionals, but the other teams have been doing F3 for years and they are a



for national championships to be rekindled in a slightly lower cost format. It is a wish shared by experienced Autosport journalist Marcus Simmons.

"Berger's first job was to straighten out F3 and he's ended up with a very strong FIA European Championship," says Simmons. "But it would be nice to get the British championship back with more than four rounds, though I think that championship would have to act as a feeder in the same way as the ATS Cup does in Germany."

The idea of creating a platform on which drivers can gain race experience before advancing to the European Championship is also the source of attention from Berger, who believes that a Formula 4 concept could fill this role (see sidebar).

Meanwhile, the new FIA Formula 3 European Championship continues to propel young drivers into the spotlight. It was intriguing to see FIA WEC winner Allan McNish tweet in support of Carlin's young British driver Harry Tincknell, who took his debut series victory at Silverstone. And, as his advisor, former Williams and Benetton F1 driver Alex Wurz has been a vocal supporter of Prema Powerteam's Alex Lynn.

Simmons sees one of the strengths of the new championship as being the opportunity to race in front of manufacturers such as



Forming up on the grid (left), with Sweden's Felix Rosenqvist at the head; and a daring overtaking move on the Silverstone straight (above)

PHOTOGRAPHY: THOMAS BUTLER (13), THOMAS SUER/FIA (1)

whole year ahead of us with this car. We are still learning. We just need to work our arses off and get things together."

Raffaele Marciello finished second in the series last year and, following a win this year at Silverstone, left round two with a strong championship lead. "I think it's the best category for me at the moment," says the Prema Powerteam driver. "It's a good car to learn downforce in and you're fighting with the very best young drivers."

It is this level of quality that is the real strength of the championship. Berger wants to address the question of how a Formula One team knows who is the best young driver – the one who wins F3, GP3, GP2, or Formula Renault 3.5? But with the best teams and drivers flocking to the FIA Formula 3 European Championship, the champion will truly have to prove himself.

Spectators watching from Luffield saw precisely this when Swedish driver Felix Rosenqvist, in his Mücke Motorsport Dallara Mercedes, snatched the lead, and victory, of race two. It was a reminder that Berger's work isn't just about a championship surviving. It is about the talent, and the ripple of excitement that runs through the crowd when a ballsy overtaking manoeuvre is made tells fans that they're watching the future stars of Formula One. □

Constructing the fourth bridge

With the reinvention of F3 well underway, Gerhard Berger's next task is to build a new link between karting and single seat racing - Formula 4

Having tackled Formula 3, FIA Single Seat Commission President Gerhard Berger has now switched his focus to young drivers stepping out of karting and into slicks and wings cars.

"We have a clear line we would like to see," says the former team principal of F1 outfit Scuderia Toro Rosso. "It goes from Formula 4 to Formula 3 to Formula One. It's not necessary to build another level between F3 and F1, since with GP2 you already have too much."

Berger's ultimate goal is to have a simple, effective route from entry-level single seaters up to Formula One, but while that sounds easy on paper, the reality is altogether trickier.

So far, the blueprints have been drawn up for Formula 4 as a way for countries to create strong national series that could feed into the FIA Formula 3 European Championship.

"The system is quite flexible," he adds. "We would like the ASNs (National Sporting Authorities) to run the show. We would give them guidelines and we want a single engine supplier per country. With the chassis, we have three or four manufacturers interested. We would like to start Formula 4 on a small scale next year, and it's up to the ASNs if they want to adopt it."

He believes this would provide a strong solution in countries such as Britain, where the cost of the national Formula 3 series proved too high. "It was costing between £600,000 and £700,000, and there's clearly no market for that. Without 30 cars you're not a championship. That's why I believe F4 could have a market."

His Formula 4 plans met with support at Silverstone. "As a purist, I'd like to see countries in Europe having similar rules for their junior categories," says Autosport's Marcus Simmons, "and seeing these drivers go from F4 to F3 and that level where it takes them to the F1 package and GP3, GP2, or DTM or sports car racing."

WRC Safety

SAFETY FOR THE LONG RUN

With 50-kilometre event stages, officials scattered across long sections of road and competitors often out of visual range for long periods, just how does the FIA safeguard drivers and spectators at World Rally Championship rounds? AUTO travelled to the Rally de Portugal in the Algarve to find out >

BY GEMMA BRIGGS



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ortugal 1986 was a watershed moment in the history of the FIA World Rally Championship. Joaquim Santos, in a Ford RS200, lost control and plunged into the crowd standing just centimetres

from the road. Three were killed and many more injured. The works teams withdrew from the event and the Group B era of supercharged monster rally cars was effectively over, with spectator safety put under intense scrutiny.

Fast-forward to early April 2013, and the Portugal WRC round, where the transformation from that unruly era is almost complete. Improvements in tracking technology, medical back-up and spectator management – no mean undertaking given the nomadic nature of world championship rallies compared to a self-contained race circuit – have all been implemented under the FIA’s stewardship. They are all helping to improve safety levels, however, it’s an ongoing process, as Jarmo Mahonen, the FIA Rally Director, is quick to point out.

“In the WRC, rallying is as safe as it can be,” he says, “but it was a very dark year in Europe last year, with many accidents. This means there is still a lot of work that needs to be done. Other events can learn from the WRC, as the pinnacle of the sport. We have a safety plan that all events must follow. And we have introduced new safety guidelines for these other championships. For the time being they’re just recommendations, but they will be mandatory in the future.”

The safety plan is an exhaustive document that all WRC events have to submit to the FIA three months ahead of a rally. It contains everything from where spectators stand on a given stage to the flight path of a medevac helicopter. It’s submitted to a rigorous review by FIA officials, including sporting, safety and medical delegates. Only once it is approved can a rally go ahead.

“Of course, we can put in place the requirements that the events have to meet, and we are here to help – whether it’s running safety seminars or doing our own checks, like the quality of the local hospitals. But it’s down to the people on the spot, the event organisers themselves, to deliver. They themselves are responsible for safety on the rally and, particularly, the safety of the spectators,” explains Mahonen.

“We can never go back to the times when a car was going through a stage and there were spectators on the road just 30 metres ahead,” he adds. “There were no guidelines then, no safety tape. It’s not rocket science. We just need to produce the right regulations, provide the right education and find the right people to implement them.”

On Rally de Portugal, this task falls to Pedro Almeida, Clerk of the Course. Almeida oversees a 1300-strong army of officials that ensures the event runs to plan and that safety is optimised at all times. Almeida also relies on a brace of safety helicopters, a medical helicopter, a fleet of ambulances, fire engines, rapid response vehicles, and eight safety cars. Backing him up is a full team from the FIA, including Dr Jean Duby, the Medical Delegate, and Jacek Bartos, the Safety Delegate, who works under Jacques Berger, Head of Safety.



Spectator areas are carefully planned prior to the rally (left and above). The ‘eye in the sky’ (right) checks everyone is in the correct positions before the race can start



Jarmo Mahonen, the FIA Rally Director expects other regional rally series to take a leaf out of the WRC’s safety rule book. (Below) officials at the Rally de Portugal headquarters track the stages in real time



“Three or four hours before the start, the stage manager will drive through,” explains Almeida. “We then send three safety cars through each stage, one with 90 minutes to go, and one an hour before. Then we have the PA-system car, which broadcasts information to the spectators and warns them to move to a safer location if necessary. And then, as a final checking process, we have three zero cars, which go through more or less at rally speed, close to the time when the first competing car starts the stage.

“On top of this, we have two helicopters,” he adds. “One is called the ‘eye in the sky’, which goes over the stage 60 minutes before the race to check the spectators are in the proper positions. We then have a helicopter that follows the first cars. We see all these images in the rally control where I sit with the Deputy Clerk of the Course. We also have a camera in the zero car so we can see the view from the ground level. The medical helicopter is for the exclusive use of the rally. It’s equipped with a winch and stretcher because in some places it is not possible for the helicopter to land.”

The safety requirements laid down by the FIA are also clear about the location of safety vehicles on stages. “Years ago we were obliged to have two vehicles if a stage was more than 15 kilometres long,” says Almeida. “Now we have to ensure a vehicle can be on the spot of an accident in under 10 minutes. That means every six kilometres we will have an ambulance waiting, as well as a doctor’s car and a car with cutting equipment. We have two hospitals on standby, one in Faro and the other in Lisbon in case of major accidents, which we can get to by helicopter.”

Almeida is supported by 30 personnel stationed at the rally’s headquarters at the Algarve football stadium, which is available for the duration of the event to house this facility. There are also 350 marshals, medical personnel and fire fighters, plus 950 police officers from two forces.

“The most difficult thing is coordination,” says Almeida. “We provide designated spectator areas, we put signs on the roads so people know where to go, and we have police on patrol 15 hours

before the stages to ensure that they do not stray from these areas. We have marshals working with the police in the spectator areas. And if we have to stop a stage because people are not in the right place, then that’s what we’ll do. It’s a big challenge to get everyone working together but that’s my job.”

Of course no stage can begin until the FIA Medical Delegate has completed his inspection. Dr Duby drives through each stage to check all medical facilities are in place. If anything is amiss he will notify the Safety Delegate, who in turn will contact the Clerk of the Course to ensure the necessary action is taken.

“Most of the time everything is in accordance with the safety plan, so it’s very rare that we ask for a stage to be stopped,” says Dr Duby. “But if there is a major issue, we won’t hesitate to pull the plug.”

During the rally itself, Dr Duby takes on more of an advisory role. But if there is a serious incident, he can be called on by the Chief Medical Officer. He also provides general advice to drivers, many of

‘WE JUST NEED THE RIGHT REGULATIONS, AND THE PEOPLE TO IMPLEMENT THEM. IT’S NOT ROCKET SCIENCE’

JARMO MAHONEN



FIA Medical Delegate, Dr Jean Duby. "Most of the time everything is in accordance with the safety plan. But if there is a major issue, we won't hesitate to pull the plug."



'IF WE HAVE TO STOP A STAGE BECAUSE SPECTATORS ARE NOT IN THE RIGHT PLACE THEN THAT'S WHAT WE'LL DO'

PEDRO ALMEIDA



Pedro Almeida, Rally Portugal's Clerk of the Course, has to coordinate a small army of medical staff, marshals and 950 police officers (below) to ensure safety



whom he knows personally, having started working in rallying back in 1978. Furthermore, Duby has overseen FIA training courses in first aid for drivers and co-drivers.

"Normally a rally car is the first on the scene of an accident and can help," explains Dr Duby. "And when there is an accident involving two people, one is always less injured than the other."

It's the roving nature of rallying that will always create an added challenge when organising events and ensuring safety. This is why all cars competing on WRC events are now fitted with tracking devices that transmit a signal to a repeater plane.

This signalling makes it possible to know the exact location of a competing rally car at any given time. However, SIT Sports, installed as the championship's new tracking and timing service provider at the start of this season, wants to go further with this technology – considerably further.

Rather than rely on a GSM-based GPRS system or radio as the WRC has done in recent years – a technology that can be prone to signal issues – SIT has effectively merged the two solutions together. The result is a more reliable and accurate service, and one with numerous applications.

While there were some problems on the Rallye Monte-Carlo, the opening rally of this year's campaign, the modernised hardware and new software will offer a number of benefits once it is operating to full capacity.

Currently in development is an in-car electronic yellow flag system, which will notify competitors when a stage needs to be neutralised. The system also provides for a set of low-resolution cameras to be fitted inside vehicles and these will provide a constant feed from the cockpit in order to determine the condition of a car's crew in the event of an accident.

Waved yellow flags are a regular feature on international rallies, but with one stage in Portugal stretching to 52 kilometres, it is simply not possible to position flag marshals at every corner. The new electronic system could therefore provide an instant signal that a serious incident has occurred and that a driver should slow down and be prepared to stop.

"We are quite close on the yellow flag system. It could be very helpful for the drivers," insists Mahonen. "We are making some try-outs. It won't be ready for this year but when it is ready, it will be the final piece in the safety jigsaw." □

PHOTOGRAPHY: MCKLEIN

Freeze frame

FRONT ROW SEATS

It might look like they're enjoying a relaxed view of this year's Bahrain GP, but McLaren's pit crew were strategically placed and finely tuned to execute a spectacular slice of F1 choreography, as the team's Sporting Director Sam Michael explains

It's an image frequently seen during Formula One race broadcasts as the TV director cuts from the track action to a shot of a garage full of mechanics reclining in folding chairs, gaze focused on the screens.

But while it seems as if the team members are bystanders, watching the race unfold around them, the truth is that they're scrutinising the drama, looking for any sign that they might soon be called into action to work on the cars of Jenson Button and Sergio Pérez. And when they are, the response is immediate and honed to perfection.

"The positioning of the guys in the garage is about preparedness and avoiding mistakes. It's something that we work very hard at," says McLaren Sporting Director Sam Michael. "The row structure you see, with the wheel gun guys at the front, is the same race to race, as you're always seeking consistency. We're down to two seconds for a pit stop and a sub-two-second stop is definitely possible. I'm sure it will happen in a race this season.

"However, our main focus is not on absolute speed but on consistency. All of our thinking and investment goes into that. Speed comes as a by-product of consistency.

"There is a human performance element to it as well," he concludes. "We do a lot of work with the English Institute of Sport on physical and mental performance and on resource management. It's a good area of competitive advantage for us, so we keep the details close to our chest!" □

Front left gunner – Andy Moore

Andy Moore is responsible for getting the front left wheel off McLaren's MP4-28 in times approaching two seconds. The yellow colour of his visor is down to preference, with some pit crew members opting for shaded visors if there is glare in their stop position.



Performance Engineer – Will Joseph

Working on Sergio Pérez's car, Will Joseph is predominantly concerned with chassis performance, in order to advise 'Checo' of where gains can be made, and cross-referencing the Mexican's car input with teammate Jenson Button's to improve lap times.

Side Jack – Richard Collier

Collier usually works in the team's composites department at the track but in Bahrain, he was on side jack duty. The side jack only sees action if the car needs a change of nose cone. Otherwise, side jack side operators are often used to stabilise the car during stops.

'A SUB TWO-SECOND STOP IS POSSIBLE. IT WILL HAPPEN IN A RACE THIS SEASON'

Right rear gunner – Dave Coleman

Dave Coleman's regular job with the team is as a gearbox mechanic but in pit stops he's on the right rear wheel. According to Michael, the position of the gun operators in the front row changes from race to race depending on pit box location and orientation.

Rear left gunner – Kari Lammanranta

Finn Kari is Checo's number one mechanic but in pit stops looks after the rear left wheel gun. "All the guys have a normal day job," says Michael. "You expect them to be a proficient race mechanic one minute and an Olympic athlete the next."



McLaren's pit crew is organised by row for a pit stop. "The wheel gunners are always at the front as they have the most to do," says the team's Sporting Director Sam Michael

Stats at the back

SAFETY IN NUMBERS

According to a new report from the World Health Organization, road traffic is the eighth leading cause of death globally, just behind tuberculosis. It claims in excess of a million lives each year, with tens of millions more affected. Seat belt laws have helped reduce road deaths dramatically, but there is much more that governments can do to protect its citizens.

ROAD TRAFFIC INJURIES THE FACTS

1.24 MILLION
road traffic deaths occur every year

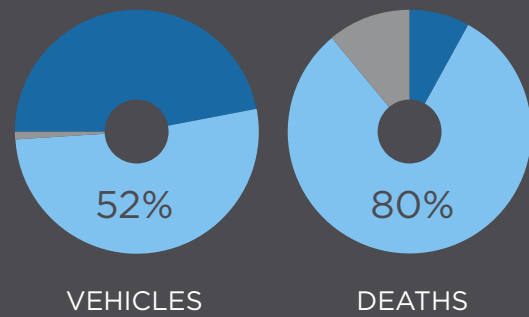
#1
cause of death among those aged 15-29 years



3 OUT OF 4
road deaths are among men



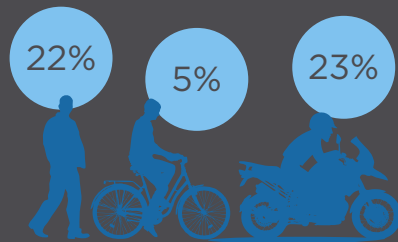
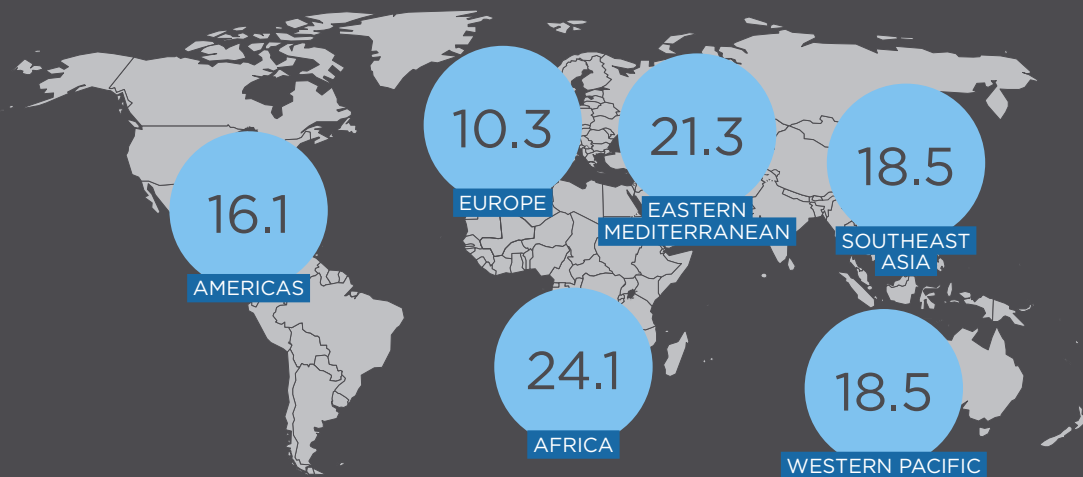
Although middle-income countries have only half of the world's vehicles, they have 80% of the world's road traffic deaths



Middle-income countries have the highest road traffic death rates



The chance of dying in a road traffic crash depends on where you live



50%
of all road traffic deaths are among pedestrians, cyclists and motorcycles

Road traffic fatalities per 100 000 population

SEAT BELTS THE FACTS

Wearing a seat belt reduces the risk of a fatal injury by:



UP TO 50%

for front seat occupants



UP TO 75%

for rear seat occupants

Seat belt laws should cover both front and rear seat occupants



111

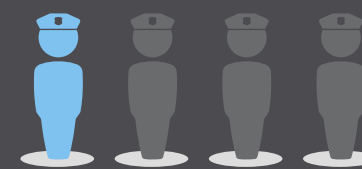
countries have comprehensive seat-belt laws covering all car occupants.



This covers **4.8 BILLION**

people... or **69%** of the world's population

Only a quarter of all countries report good enforcement of their seat belt laws.



CHILD RESTRAINTS THE FACTS

Child restraints reduce the likelihood of a fatal crash by:



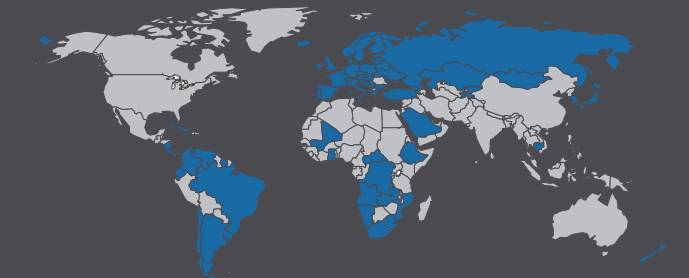
APPROX 70%
among infants



APPROX 54%-80%
among young children

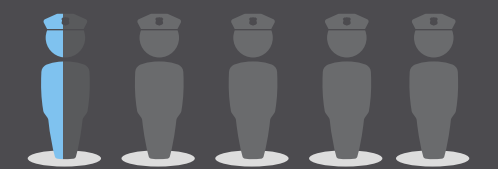
96 countries have implemented a child restraint law

This covers **2.2 BILLION** people... or just **32%** of the world's population



Countries with a national child restraint law

Only 17 countries (9%) report good enforcement of child restraint laws.



Back to the future

MAPPING THE ROAD AHEAD

The only auto industry figure to feature on US magazine *Fast Company's* 2013 list of the 100 most creative people in business, Ford's Global Trends and Futuring manager **Sheryl Connelly** identifies her five key car-buyer demands for the coming decades



The greatest challenge facing us in our lifetime is going to be the ageing population. In Japan, where the problem is the most acute, they are concerned about what we call the Dependency Ratio, the number of people who are no longer working, compared to the number that are.

There will be 108 retirees for every 100 workers by 2030. The economy will slow down and that will mean less money for investment and innovation.

Today, people might be willing to give up driving at 80. But if they think they will live to be 105 then we have to design something that will give these people the freedom and autonomy of operating their own vehicles until later in life.

The second big demand we'll see among consumers is for the car to be about much more than transportation and simply getting from A to B. The population of the world is rising and continues to grow. With that will come more urbanisation and, as we know, moving around cities is tough.

We need to make sure that people can use their time in the best possible way. For some people that means the option of working while they move, but for others the car is going to be a place for them to have some downtime during their journey from the office to the home place.

I also think that there will be increasing interest in ecology. It is not just going to be about electric cars or hybrids, it is going to be about the development of mainstream green cars, about two-doors or four-doors, pick-ups and utility vehicles.

The fourth issue I see is that people will want more adaptability and flexibility. When I started out with Ford, people used to have two-year leases on their cars. Today the average age of cars is between 10 and 11 years. That is a reflection on the quality of automobile construction, but it also means we have to build cars that are adaptable for that kind of ownership cycle.

'IT'S NOT JUST GOING TO BE ABOUT ELECTRIC CARS OR HYBRIDS, BUT MAINSTREAM GREEN CARS'

With systems like Ford SYNC, which allows users to make hands-free telephone calls, control music and perform other functions with the use of voice activation, we are already changing how we engage with technology inside the vehicle.

However, how many different cell phones will a person own during the life cycle of the car? We need to make sure that we have an open architectural approach to ensure that

the automobiles we purchase do not rapidly become obsolete.

The final trend I see is a move towards automated systems. Ford wants to keep drivers in the driver's seat and we are not interested in autonomous cars, but there are many automated systems that can feature in our vehicles. Ford has systems that can measure spaces available for

parking and park the car. There are also adaptive cruise control and collision alert systems. We have recently showcased traffic jam assist technology that will let the driver have neither hands on the wheel nor feet on the pedals in traffic jams.

While all of these systems are really exciting, there are issues such as liability and regulation requirements. These cannot be solved by the auto industry alone. □



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Dr Wolfgang Ullrich, head of Audi Motorsport, June 2011.

*Equivalent to more than 700 km on one set of tyres.



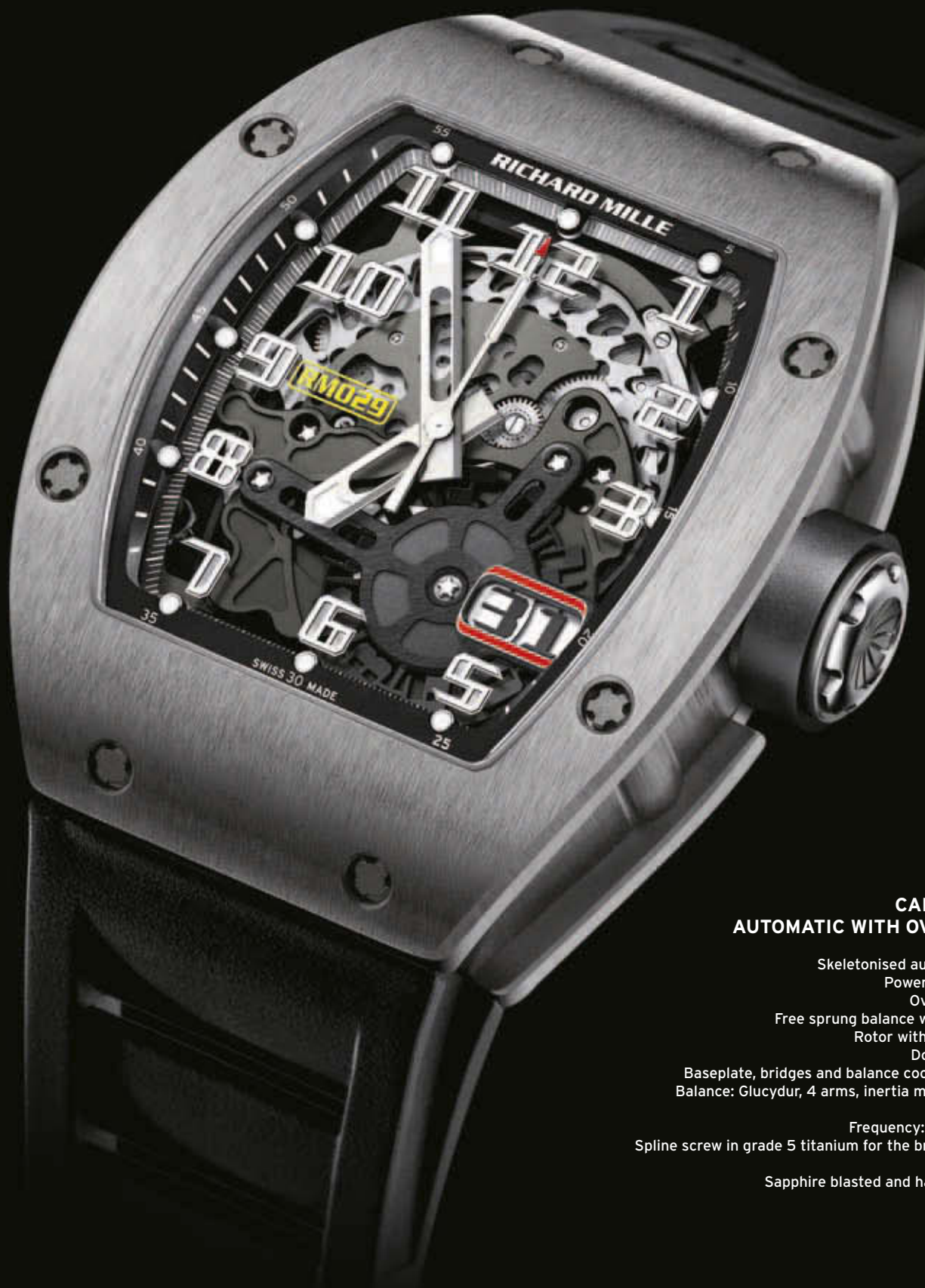
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