

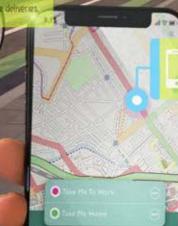


to the limits – by scooter

MAXIMUM MICROMOBIL

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CHARGING FORWARD ocus on emissions result n greater electric car use nd charging provision



1 20 A **CitiApp**

Motor sport prepares to fuel up for the future Pursuing sustainability, the pinnacle of motor sport is researching

Jochen Rindt: Formula 1's lost champion Marking 50 years since the death of grand prix racing's only posthumous

CROWD CONTROL

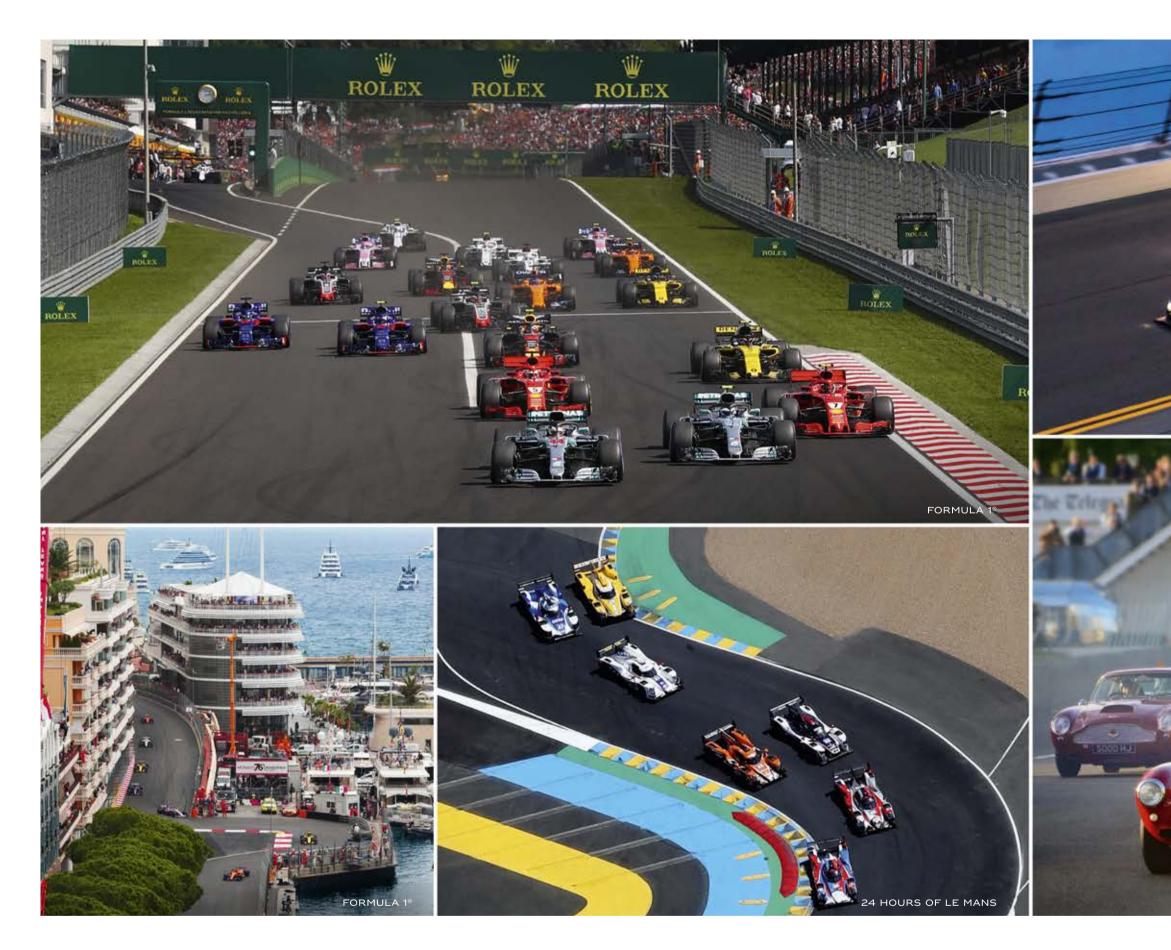
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ROLEX AND MOTOR SPORT

The relationship between Rolex and motor sport began in 1935. Over the years, the partnership has grown, challenging the limits of endurance, from Daytona to Le Mans, and the boundaries of speed, from Monaco to Melbourne. Rolex champions the drivers who push performance to the very edge, and continues to move motor sport ahead.

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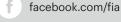
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THE FIA

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

THE FIA FOUNDATION

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



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Dear reader, dear friend,

Freedom of movement is one of the great benefits of everyday life that in the past many of us have too often take for granted. Over the last 10 months, however, that benefit has been severely curtailed as the travel restrictions imposed by the COVID-19 pandemic have forced us to narrow our world view and deal with a different reality when it comes to mobility.

And as the effects of the crisis continue to be felt around the world, several questions remain. Are the trends we are seeing short-term adjustments or will journeys be greatly changed in the future? When restrictions ease, will our reluctance to travel closely together lead to shifts in how we make our way to work, or indeed whether we even leave home to work? And finally, will the changed landscape present unexpected positives in the shape of accelerated moves towards clean energy, reductions in congestion and smarter, technologically better travel overall?

While the 2020 FIA Annual General Assembly and Prize Giving are mainly being held in digital form, our cover story examines all these questions and more, while also analysing the effect the pandemic has had on motoring organisations and how the FIA has created a support structure in the shape of the FIA MOBILITY WORLDWIDE TOOLKIT.

Elsewhere in this issue, we hear from Formula E driver LUCAS DI GRASSI on his plans for a green future for motor sport and on the roads. We continue the theme of sustainability with a look at how the FIA and FORMULA 1 are researching advanced renewable fuels for use at the top level of motor sport as part of a drive towards carbon neutrality by 2030.

Another champion of sustainable motoring is RENAULT GROUPE CEO LUCA DE MEO, who features as this edition's automotive leader. As well as directing the French manufacturer towards greater electric power he is also a passionate fan of motor sport who is returning one of the great racing names, Alpine, back to competition. Building a better future is a key goal for young people and helping them to voice their concerns is the mission of my friend and inspiring leader, JAYATHMA WICKRAMANAYAKE, the UN SECRETARY-GENERAL'S ENVOY ON YOUTH, who tells us how today's youth are helping to make roads safer. Our focus on youth advocacy continues with the thoughts of the Co-chairpersons of the 2nd World Youth Assembly on Road Safety, OMNIA EL OMRANI and THIAGO GRUNER.

Finally, in our Heritage section we look back at the achievements of Formula 1's only posthumous champion, JOCHEN RINDT, who died 50 years ago, and we celebrate 1000 F1 GRANDS PRIX FOR FERRARI, a remarkable milestone. A special reward for Lewis Hamilton, Sébastien Ogier and Julien Ingrassia for their seventh world championship titles in F1 and WRC.

I trust you will enjoy this edition, and while we are still getting through this difficult time I hope you all stay safe and well.



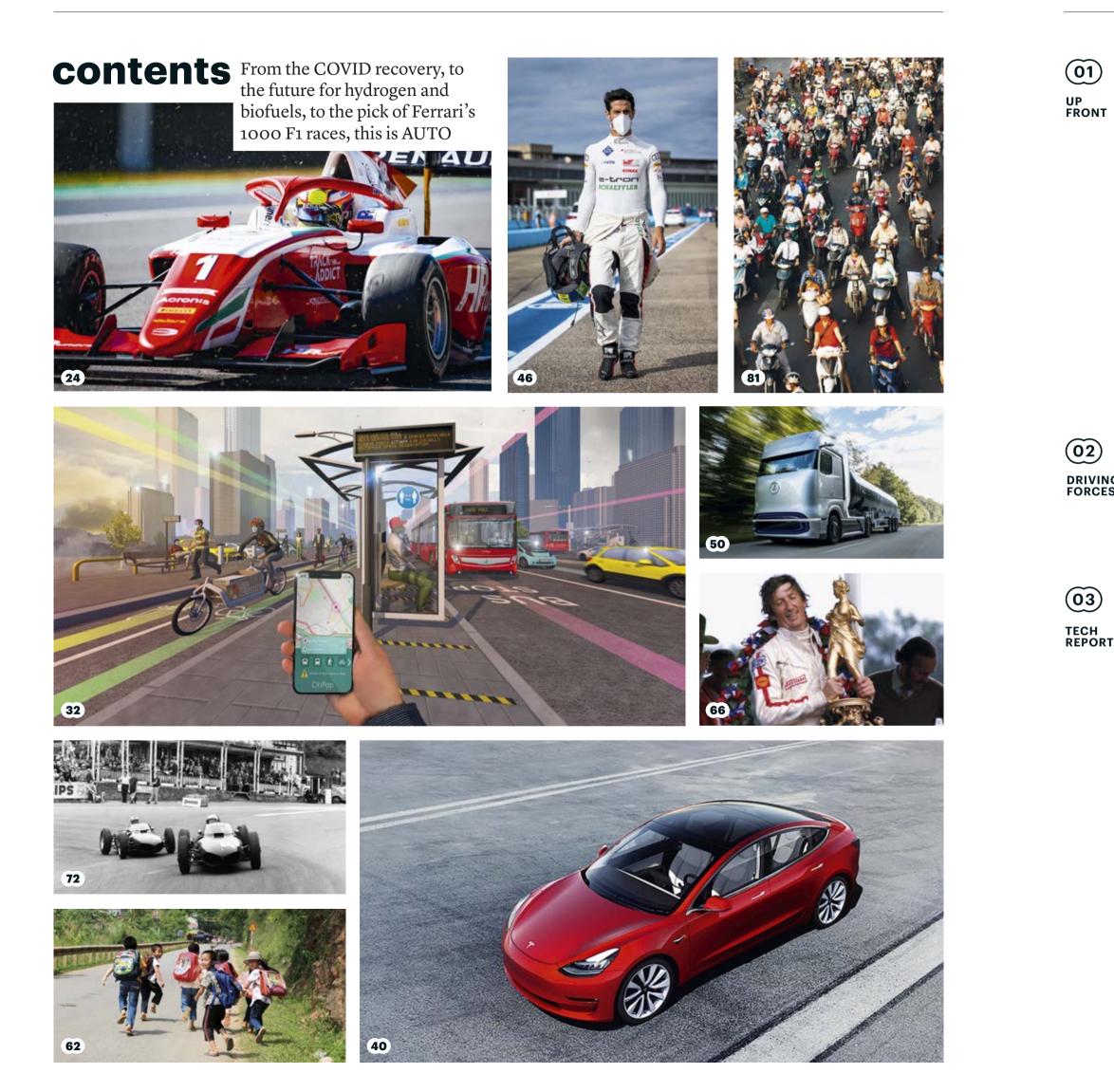
JEAN TODT, FIA President

(01)

UP FRONT

DRIVING FORCES

(03)





P10-13 Gallery

Lewis Hamilton wraps up his seventh F1 Drivers' title; Romain Grosjean's miraculous escape from fiery F1 crash

P14-20

News

F1 earns environmental award honour; Stefano Domenicali is new F1 chief; Alpine to support Formula Regional series

P23 Opinion

Richard Mille on why he created an all-female LMP2 team in a push for motor sport equality

P24-25 **Oscar Piastri**

The Australian has travelled far to achieve FIA Formula 3 Championship success - and now he has his sights set even higher

P26-29 Anatomy of a crash

A recent spate of race accidents have prompted experts to examine the safety aspects - AUTO looks at what comes next

(04)COVER STORY

Willemarck The FIA Deputy President for Automobile Mobility and Tourism on how COVID is changing travel

P32-33

Thierry

P34-38 **Feeling the**

impacts

A look at how the FIA's mobility clubs have been affected by and responded to the world pandemic

P40-43 The industry outlook

How the automotive world is beginning to recover from the effects of COVID and look to the future

P44-45 What the future holds

AUTO speaks to a trio of mobility experts who share their predictions for the next six to 18 months

P46-49

Lucas **Di Grassi**

The Formula E star is on a mission to push the technology of racing in the pursuit of sustainability

P50-51 Hydrogen goes large

Why hydrogen fuel cells are increasingly being touted as the future of haulage and public transport

P52-54 **The future** of fuel?

(05)

AUTO FOCUS

AUTO looks at how advanced biofuels could make the transition from race track to road

P56-59

Renault's game changer

New CEO Luca de Meo plans to transform the French make's fortunes following a difficult few years

P60-61

A safer trip to school

The FIA Foundation has joined forces with UNICEF to develop COVID and roadsafe journeys to school

P62-63

Voice of a generation

How UN Secretary-General Envoy on Youth, Jayathma Wickramanayake, is building a better future

P64

YOURS – a call for safety

The co-chairpersons of the Youth for Road Safety Organisation on why young people's opinions matter

(06)REAR VIEW

(07)

INSIDE THE FIA FAMILY

(08)

FINAL

LAP

P66—71 Legend: **Jochen Rindt**

AUTO examines the legend of F1's only posthumous champion 50 years after his untimely death

P72-78 **Seven of** Ferrari's best

The Italian team has now contested over 1000 GPs journalist Pino Allievi picks his standout moments

P81-85

Club World

AA Vietnam and the Vietnamese Motorsport Association are tackling a huge rise in motorisation and a growth in racing



Safety is at the heart of the FIA's motor sport mission, as our timeline of major safety gains in Formula 1 reveals



P10

P11

01

FOCUS



FIA FORMULA ONE WORLD CHAMPIONSHIP Lewis Hamilton matched Michael Schumacher's record of seven Formula 1 Drivers' Championship titles with a stunnin seven Formula 1 Drivers' Championship titles with a stunning

track Hamilton battled through to the lead with 22 laps remaining. The Mercedes driver then opted to stay on track



his heroics.

INTO THE INFERNO... FIA F1 Medical Delegate Dr Ian Roberts was first on the scene in the FIA Medical

Car driven by Alan van der Merwe. Roberts immediately went into the flames to help Grosjean escape the wreckage. "The fire extinguisher was just enough to push the flame away as Romain got high enough to then reach over and pull him over the barrier," said Roberts of

UP FRONT Gallery News Opinion DRIVING FORCES

TECH REPORT FIA crash

COVER STORY Toolkit' aid for mobility clubs Industry response to COVID; Changing lanes – the trends likely to alter mobility; is better for hydroge

towards greener fuels Renault's game-changing CEO; Ferrari at The FIA Foundation and UNICEF 1000 races redefine school trips; The UN's youth action; Road safety's young advocates

REAR VIEW Jochen Rindt; Ferrari at

INSIDE THE FINAL FIA FAMILY LAP AA Vietnam & Vietnamese Tracking motor spor safety Motorsport Association advances

P12

P13

THE FLAMES

FIA FORMULA ONE WORLD CHAMPIONSHIP When Haas F1 driver Romain Grosjean crashed at the start of the 2020 Bahrain Grand Prix what happened next amounted the 2020 Bahrain Grand Prix what happened next amounted **SAVED FROM** to the sternest test of FIA safety technology ever seen. The Frenchman's car broke through the barrier at a reported 221 kph and with a force of 53G before bursting into flame. Yet, despite the huge impact, the car's survival cell remained intact,

as did the Halo head protection device introduced in 2018, while the fire was kept at bay by the new standard of race suit introduced by the FIA this year. "[The Halo is] the greatest thing we've brought to F1. Without it, I wouldn't be able to speak to you today," said Grosjean, who escaped with minor burns. A full FIA crash investigation will now be conducted.



to safety: "We got the marshal there with the ext and that was just e push the flame away, so I could reach over and pull [over the ba



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PONT

COVER STORY
New routes for mobility;
'Toolkit' aid for mobility c
Industry response to CO
Changing lanes – the trer
likely to alter mobility;
Di Grassi's future focus;
Bigger is better for hydro

FIA FAMILY

P14

P15



In this issue: Formula 1 achieves high-level environmental award; Stefano Domenicali replaces Chase Carey as F1 chief; Alpine backs new Formula Regional European Championship; Electric car registrations overtake diesel for first time in Europe; FIA Girls on Track - Rising Stars finalists chosen

F1 plans to be carbon neutral by 2030 as it looks towards a

B Formula 1 receives **FIA Three-Star Environmental Accreditation**

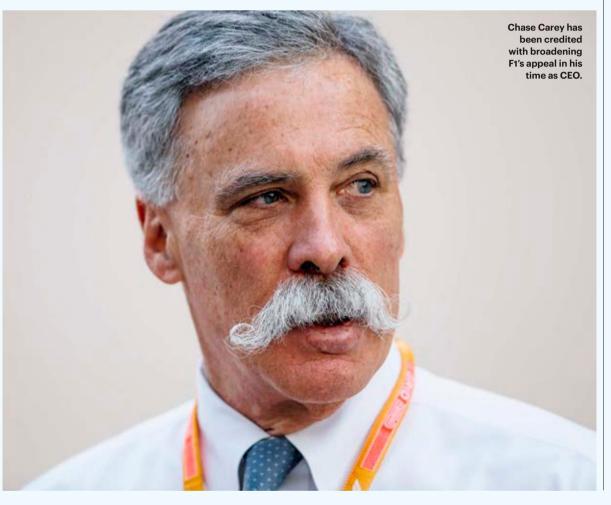
The FIA Formula One World Championship has been awarded Three Star Environmental Accreditation as measured against the FIA Environmental Certification Framework. The milestone has been reached exactly one year on from F1's announcement of its environmental sustainability plan. which is set to see the championship achieve net-zero carbon output by 2030.

From the launch of Formula 1's strategy in December 2019 until the FIA audit that took place in October 2020, several reports and surveys have been carried out by F1 together with external resources. The audit took account of the series' significant ambitions to improve its environmental performance across all areas of operation, and found the championship to be demonstrating best practice and commitment to seeking continual improvement through the implementation of an environmental management system.

The three-star rating reflects a credible, robust and fact-oriented road map that sets out to meet the overall objectives of its plans in the short, medium and long term, and means that the FIA Formula One World Championship joins the ABB FIA Formula E Championship as one of two promoters to reach this level of certification.

Felipe Calderón, President of the FIA Environment and Sustainability Commission said: "The FIA **Environmental Certification** Framework is an important standard by which sustainability is measured across motor sport and its stakeholders. I am pleased to see that the strong commitments and actions made by Formula 1 have brought it to the Three Star level, with rapid progress being made across all aspects of the championship, reflecting in new areas the pioneering innovations that have always been a part of the sport on the track."

FIA Deputy President for Sport. Graham Stoker, said: "The FIA Formula One World Championship set out a hugely ambitious sustainability plan one year ago, and we are very pleased to be awarding the FIA's highest level of environmental certification, reflecting the clear and decisive actions already being undertaken to achieve the goal of net-zero carbon emissions by 2030. Formula 1 represents the top level of global motor sport, and we believe it is absolutely essential that the championship capitalises on its inherent potential for innovation to not only be a world-leading advocate for sustainability, but a practical driving force for change.





Chase Carey takes role of F1 **Non-executive Chairman**

Chase Carey will move to the role of Formula 1 Non-executive Chairman from 2021, after spending four years as the Chief Executive Officer and Executive Chairman.

Carey replaced Bernie Ecclestone as the sport's CEO in January 2017 following the completion of the championship's buyout by Liberty Media.

Since then he has expanded F1 by introducing new races such as Jeddah for the Saudi Arabian Grand Prix, while also aiming to return to Zandvoort in the Netherlands in 2021 following a 36-year absence from the calendar

In addition, Carey was responsible for putting together the latest Concorde Agreement. a crucial renegotiation of the deal that governs how F1 shares revenues with its racing teams.

Prior to joining F1, Carey was a former executive vice-chairman of Rupert Murdoch's 21st Century Fox company, where he was instrumental in the set-up of Fox News and Sky Television.

People familiar with Carey's original appointment at the helm of F1 said he had planned to leave at the end of a three-year deal, but the CEO agreed to see out the 2020 season to ensure it could be concluded despite the disruption caused by the COVID-19 pandemic.

"Chase has done a phenomenal job leading F1," said Greg Maffei, Liberty Media President and CEO. "He assembled a first-class commercial and sporting organisation that has a long list of achievements, including broadening the appeal of the sport, growing its digital presence, establishing new technical regulations, securing a cost cap for the first time and reaching a new more equitable Concorde Agreement with the teams"

"His actions have reinforced Formula 1 as the pinnacle of motor sport," added Maffei, "As always he has been a great partner and I look forward to his continued counsel in his new role as Non-executive Chairman."

Carey said: "It has been an honour to lead Formula 1. I'm proud of the team that's not only navigated through an immensely challenging 2020 but returned with added purpose and determination in the areas of sustainability, diversity and inclusion

"I'm confident that we've built the strong foundation for the business to grow over the long term. It's been an adventure and I've enjoyed working with the teams, the FIA and all of our partners," he concluded.

🔀 Stefano Domenicali appointed President and CEO of F1

Stefano Domenicali, Chief Executive of Lamborghini has been appointed as the new President and Chief Executive Officer of Formula 1.

Domenicali returns to F1 after having spent 23 years at Ferrari, as Race Director at the Mugello circuit from 1991 and then Ferrari's Head of Personnel in its sporting department from '95.

In 1996 he was promoted to be F1 Team Manager and remained in that position until 2001 when he became the team's Sporting Director, then later Team Principal in 2008 until his departure in 2014.

Domenicali joined German manufacturer Audi as Vice-President

of New Business Initiatives before being named as Chief Executive for Lamborghini in 2016. During his time at Lamborghini, the Italian successfully expanded the brand in major global markets, producing strong financial results.

In addition, he has been head of the FIA's Single Seater Commission, during which time he worked on streamlining the route to F1 and the introduction of national F4 championships.

"I am thrilled to join the Formula organisation, a sport that has always been part of my life," said Domenicali. "I was born in Imola

and live in Monza. I've remained connected to the sport through my work with the Single Seater Commission and I look forward to connecting with the teams, promoters, sponsors and many partners in F1 as we continue to drive the business ahead.



New F1 chief Stefano omenicali has held senior positions at Ferrari, Audi and Lamborghini

"The past six years at Audi and Lamborghini have given me broader perspective and experience that I will bring to F1," he added.

Domenicali will replace current F1 Chairman and CEO Chase Carey who will move to the role of Non-executive Chairman.



01

FRONT News

REPORT ORCES

STORY

Road safety's young adv

ΓΙΔ ΓΔΜΙΙΥ

P16

P17

Here FIA and **Essilor renew** road safety partnership

Jean Todt, FIA President and the United Nations Secretary-General's Special Envoy for Road Safety. and Paul du Saillant, CEO of Essilor International, recently met at the FIA headquarters in Paris to continue driving global focus on the importance of vision for safe mobility.

The FIA's partnership with Essilor began in 2017 with the promotion of good vision as a key pillar of road safety through wide-reaching awareness campaigns within the FIA Action for Road Safety Campaign.

Launching a renewal of the collaboration. President Todt said: "Together with Essilor, the FIA has achieved significant milestones towards the UN's road safety-related 2030 Sustainable Development Goals. Today, we are accelerating our journey and will do so by equipping our FIA club members, providing glasses to people in need, and by continuing to support innovation through our racing expertise."

Commenting on the continued potential of the campaign for vision awareness. Paul du Saillant added: "By leveraging our expertise, innovation, brands and inclusive business programme, we are helping drivers, bikers, cyclists and pedestrians to enjoy the road safely thanks to good vision. By doing so, Essilor further strengthens its commitment to the FIA and the United Nations Road Safety Fund."

As part of the renewed commitment, Essilor and the FIA plan to provide FIA clubs with preferential access to adequate vision care solutions for their members through offline and online offers, and to collaborate on the distribution of glasses to road users in developing countries through the involvement of national FIA clubs. The FIA will also work together with Essilor's instruments division to define, improve and promote appropriate eve exams for drivers. The two organisations will explore further synergies by leveraging the Helmet Industry Working Group outputs and examine the possibility of Essilor's involvement in FIA championships.

High Level Panel for Road **Safety meets in Monaco**

The FIA High Level Panel (HLP) for Road Safety met in Monaco at the headquarters of the Automobile Club de Monaco (ACM), with 82 leading personalities from both the private and public sectors discussing road safety worldwide.

Held eight months after the 3rd Global Ministerial Conference on **HSH Princess Charlene** Road Safety, which took place in and FIA President Jean Stockholm in February, the meeting Todt (centre) at the tackled the topic of lessons learned HLP meeting.

from the COVID-19 pandemic with regard to mobility and road safety at a global level.

Discussions focused on the need to further mobilise important partners such as car manufacturers. new players in electric mobility and insurance companies to develop innovative and sustainable financing mechanisms, as well as on the urgency to strengthen prevention campaigns at local level.



Formula Regional and **Eurocup merge with Alpine support**

The FIA has announced that Formula Regional European and Formula Renault Eurocup will merge to form a new series in 2021 with support from Renault's Alpine brand.

The new series will be known as the Formula Regional European Championship by Alpine - certified by the FIA, and will mark a merger of two series that are placed between Regional Formula 4 and F3 on the motor sport ladder.

The championship will start next year and will feature 10 rounds consisting of two races. Three rounds will be staged in Italy, with the remaining seven across other European countries

A cap of 36 cars will be allowed on the grid with each team able to run a maximum of three, but they will be permitted a fourth car if they have a female driver. The car will be a Renault-powered Tatuus

chassis, which are being built at Alpine's base in Dieppe, and will run on Pirelli tyres.

"The establishment of a new Formula Regional European Championship by Alpine - certified by the FIA is another significant step in refining the pathway to the pinnacle of motor sport, Formula 1," said FIA President Jean Todt.



"I am pleased to welcome Jean Todt and members of the FIA High Level Panel in Monaco who like me are committed to road safety," said event host HSH Princess Charlene

of Monaco "This year which has changed our daily lives and lifestyles, is one of consolidation of the actions put in place by the FIA High Level Panel to fight against mortality on the roads, particularly in developing countries. We must unite our efforts in the service of this cause." The ongoing effort by the HLP

includes the implementation of regional observatories in Africa and Asia, which were supported by the World Bank, Asian Development Bank and International Transport Forum.

A further project looks to extend compulsory third-party insurance in several Latin American countries in cooperation with the Inter-American Development Bank. The HI P is also supporting a project to improve conditions for importing used vehicles to Africa, which is being done in association with the United Nations Environment Programme

"It joins the Formula Regional Championships in the Americas, Asia and Japan to form a global platform for young racing talent to progress their motor sport career.

"I would like to thank Renault, Alpine and ACI for making this merger possible, and I look forward to seeing the champions of the future racing in what is sure to be a thrilling new series."

The involvement of Alpine comes as part of Renault's sister-brand having a greater profile within motor sport, which will extend to the F1 team from 2021



Study on cerebral consequences of COVID-19 supported by FIA and FIA Foundation

The FIA and FIA Foundation are supporting a study by the Paris Brain Institute into the cerebral consequences for patients who are infected with COVID-19 over the course of a year.

During the early weeks of the pandemic a number of neurological symptoms were reported by physicians in patients infected with COVID-19, such as loss of smell or taste and more serious conditions such as seizures or stroke.

In April, a project investigating the severity of symptoms among patients was jointly launched by the neuroscience medical-university department of the AP-HP Pitié-Salpêtrière Hospital and the Paris Brain Institute

The unique study focuses on two aspects: the direct effects of COVID-19 on the central nervous system, and the impact of the infection on patients suffering from neurological diseases such as Alzheimer's, Parkinson's and Multiple Sclerosis.

The initial results after six months have identified the impacts of the disease and factors that contribute to the severity of the infection for

patients. These initial findings are helping researchers and clinicians build a better understanding of the neurological and psychiatric manifestations of COVID-19, and to develop new treatments to help patients in the best possible way.

The efforts of researchers and clinicians to better characterise the neurological symptoms of patients has led to the development of a new therapeutic approach in intensive care units. There are also further collaborations with prestigious research centres such as Yale and Liverpool universities, and with international consortiums.

The FIA-supported study looked at the neurological symptoms of **COVID-19** patients suffering with diseases such as Alzheimer's.

🚯 Amina Mohamed appointed to FIA World Motor Sport Council



Kenyan minister Amina Mohamed is involved in othe sporting groups as well as the WMSC. Amina Mohamed, Kenva's Minister for Sport, Culture and Heritage, has been appointed as a new member of the FIA Women in Motor Sport Council (WMSC)

Mohamed is also chairperson of the WRC Safari Rally Project Steering Committee and a member of the Ethics Commission of the International Olympic Committee

FIA President Jean Todt praised her appointment to the WMSC. describing Mohamed as "a great asset for the FIA in advancing gender equality and diversity".

Kenva Motor Sports Federation President Phineas Kimathi also congratulated Mohamed on her appointment. "I wish to congratulate Amb. [Dr] Mohamed on her election to this key organ of the FIA," he said. "This shows the confidence global motor sport has in Kenya, and this development will hold us in good stead as we prepare to return to the World Rally Championship fold next year."

Mohamed said her position in the WMSC is important in the context of Africa's ambition to get more involved in the management of global sport events in the continent.

"This recognition is not an individual one, but collectively represents Kenya's and Africa's ambition to get more involved in the management of global sport which will, in turn, translate to the development of sport on the continent in general," she said. "I would like to thank His Excellency President Uhuru Kenvatta for the support he has accorded sport, and his particular interest in ensuring the successful return of the iconic Safari Rally into the World Rally Championship calendar.

FIA confirms updated 2020/21 Formula E season calendar

Ahead of the start of the 2020/21 Formula E World Championship an undated calendar has been announced with the first four rounds confirmed.

Rounds one and two of Season 7 will take place in Santiago, Chile on January 16-17, with rounds three and four set to take place in Saudi Arabia on February 26-27.

While the Santiago race will be held behind closed doors, it is hoped that the Saudi Arabia event be open to spectators. All the races will be held in coordination with local health authorities to ensure their safe and successful running.



The Formula E rounds in Mexico City and Sanya, China have been postponed 'indefinitely' until later in the season, with races in Italy and France planned for April, Monaco and South Korea in May, and Germany in June. The championship is set to conclude in July with events in the US and UK. Formula E says it will continue to

work with local authorities to monitor the situation and is in constant communication with its community of teams, manufacturers, partners, broadcasters and drivers.

The next set of confirmed races will be published in early 2021 with all calendar updates subject to approval by the FIA World Motor Sport Council

AUTO #32 Q3 / 2020

01

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REPORT

Road safety's young advo

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New book looks

of COVID-19 crisis

at management

in France

A new book written by FIA medical

advisor Dr Eric Caumes called

'Urgence Sanitaire' (Health Emergency), which looks at the

management of Coronavirus

in France, features a chapter

to the global pandemic.

dedicated to the FIA's response

Dr Caumes, who is head of

the infectious and tropical disease

department at the Pitie-Salpetriere

Hospital in Paris, was part of the

FIA's panel of medical experts

that was formed to tackle the

restart of motor sport during

The chapter on the FIA's

how the organisation's panel

and how it led to the FIA

establishing the effective

COVID-19 Code of Conduct. Headed by FIA Medical Commission President Professor

Gérard Saillant, it was used to

Code of Conduct was used to

most international and national

motor sport events including

Formula E, the World Rally

Championship and World

Endurance Championship.

The book also examines the

wider response by France and

of the crisis, as well as how

identifies the mistakes and lack

experience from the SARS and

MERS epidemics should have

been looked at

of preparation in the management

restart Formula 1 in June and later

the pandemic.

inform all FIA stakeholders during

After close work with the World Heath Organization, the COVID-19

of medical experts was formed

response to the pandemic details

the COVID-19 pandemic.

🛞 Sébastien Ogier and Julien Ingrassia secure seventh FIA WRC title

Sébastien Ogier and Julien Ingrassia won their seventh FIA World Rally Championship title in eight seasons with victory at ACI Rally Monza the final round of the 2020 campaign. The French crew began the weekend Italy need to overturn 14-point deficit to Toyota teammates Elfyn Evans and co-driver Scott Martin. Ogier and Ingrassia the lead on Saturday morning, but Evans' measured pace kept the

FRONT

News

Welshman on course for a maiden championship success.

However, disaster struck for Evans when he skidded off the road in snowy condition. His slide down a muddy bank ruled him out of the day's remaining running and left Ogier in charge. The French driver eased through Sunday's final leg at the Autodromo Nazionale Monza to win by 13.9sec and take the crown by eight points.



There was one last drama for Ogier to endure. During a wet closing Wolf Power Stage, the wipers on his Yaris briefly failed. leaving him with no visibility behind a muddy windscreen.

"That was scary! I knew there were still a couple of narrow gates to pass and it would have been challenging without seeing anything," said Ogier afterward "It's been a difficult weekend. We feel for Elfyn today. He made a very strong season, very consistent, and we had really good fun to fight each other. I'm very happy and I feel very privileged."

Outgoing champion Ott Tänak finished second in a Hyundai i20, 1.4sec ahead of team-mate Dani Sordo. The double podium was sufficient to secure back-to-back manufacturers' titles for Hyundai Motorsport by five points from Tovota Gazoo Racing.

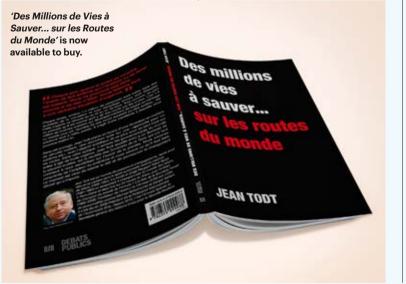
Evans finished outside the top 10 but banked three points from the final Power Stage in wet conditions.

Hean Todt's 'Millions of Lives to Save on the Roads' now available in French language edition

FIA President Jean Todt's book 'Millions of Lives to Save on the Roads', which advocates for a new philosophy on road safety, has been published in French.

In the book, initially published in English ahead of February's 3rd

Ministerial Conference on Road Safety held in Stockholm, Sweden, the FIA President, who also serves as the United Nations Secretary-General's Special Envoy for Road Safety, makes the case for a road safety revolution to halt a global



tragedy in which 1.4 million people are killed each vear

Arguing that many road accident fatalities and injuries are preventable through available solutions, he calls for a 'safe system' approach with the ambitious aim of eliminating fatalities altogether.

President Todt also advocates for the establishment of a Global Road Safety Summit, modelled on the Farth Summits

"At the end of every day when the sun sets, the futures of 500 children who were there to see it rise have been wiped out. This can't be seen as business as usual. We are facing a road safety emergency," he says.

The new French language edition, 'Des Millions de Vies à Sauver... sur les Routes du Monde' is published by Debats Publics and is available at Librairie Evrolles (www.eyrolles.com) in print for €18 and in digital form for €12.99.

The FIA's COVID-19 Code of Conduct worked well in restarting motor sport.









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P18



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AUTO #32 Q3 / 2020

(01

FRONT

P20

B Four finalists selected for 'FIA Girls on Track - Rising Stars' shootout

The four finalists in the FIA Girls on Track - Rising Stars competition have been selected with the winner set to get a full season in FIA Formula 4 in 2021 funded by the Ferrari Driver Academy.

Launched in June this year by the FIA and Ferrari Driver Academy, the Girls on Track -Rising Stars programme aims to promote the best female junior racing talent from participants aged between 12 and 16.

The programme's final threeday training camp took place at the Circuit Paul Ricard in France, where eight drivers took to the track in F4 machinery and measured themselves against a benchmark lap set by Arthur Leclerc (Charles Leclerc's brother)

The four finalists – Brazil's Julia Ayoub and Antonella Bassani, France's Doriane Pin, and Dutch/ Belgian driver Maya Weug - went

on to attend a final training and assessment programme at the Ferrari Driver Academy headquarters in Maranello, Italy to determine who gets the fully-funded season of FIA Formula 4

"Congratulations to the four girls selected to compete at the Ferrari

Driver Academy in Maranello," said FIA President Jean Todt prior to the event. "Through actions such as FIA Girls on Track - Rising Stars, the FIA is embracing gender equality and diversity in motor sport, which is one of the objectives of our #PurposeDriven movement."



If a community honours the memory of road traffic victims around the world

The FIA Community supported the 25th World Day of Remembrance for Road Traffic Victims (WDoR) in November on the theme 'Remember, Support, Act'.

Celebrated by the European Federation of Road Traffic Victims (FEVR) since 1995 and endorsed by the United Nations since 2005. WDoR commemorates the many millions killed and injured on the world's roads, as well as families tragically affected by road crashes.

FIA President Jean Todt, who also serves as the United Nations Secretary-General's Special Envoy for Road Safety, said: "COVID-19 has reminded us to revalue human life, where one preventable death is too many. We gather in silence to remember the 1.4 million lives lost and the 50 million more injured with life-sustaining disabilities each vear on the roads.

"I would like to congratulate FEVR for their work in promoting the World Day of Remembrance for Road Traffic Victims for 25 years now. Their support for road victims

since 1995 has enabled us to bring this day to a large community of victims, road safety stakeholders. and institutions worldwide."

At the invitation of the World Health Organization, Jean Todt also participated in a global commemoration held online on November 13 with United Nations Secretary-General António Guterres, Jamaica Prime Minister Andrew Holness, WHO Director-General Dr

Tedros Ghebrevesus, Child Health Initiative Global Ambassador Zoleka Mandela, Bloomberg Philanthropies founder Michael Bloomberg, as well as families of road traffic victims.

The FIA Formula One World Championship, the FIA World Endurance Championship and the FIA World Touring Car Cup promoted WDoR2020 by organising family pictures in Turkey, Bahrain and Spain



onoured WDoF at the Turkish

Five-star rating for Honda Jazz as Euro NCAP releases latest set of test results



Jazz passed Euro NCAP's latest crash test with flving colours.

The new Honda | Euro NCAP last month published its third round of results, putting two small family cars to the test: the new Honda Jazz and Mazda's first all-electric vehicle, the MX-30, Both sign off with a complete set of stars.

The Honda Jazz now exclusively comes with a hybrid engine. Along with its modern drivetrain, the latest model is also equipped with the most up-to-date safety equipment, including autonomous emergency braking and an all-new centremounted airbag that protects driver and front passenger against injuries in far-side crashes.

Mazda ioins the growing list of debutant EVs with its new electric MX-30. Naturally, the CX-30-based MX-30 is a good deal heavier than its combustion-engined sister, but still delivers an impressive 91 per cent for adult occupant protection. thanks to its compatible front-end structure and new far-side restraints.

However, the MX-30 disappoints on its vulnerable road users' collision avoidance capabilities, showing mediocre test performance and lacking more advanced functionalities, such as turn-acrosspath intervention.

Euro NCAP's Secretary-General, Michiel van Ratingen, said: "The ratings released to date demonstrate that Euro NCAP's new 2020 protocols are having a tangible impact on the safety equipment and crash performance of car models in Europe, including the latest electrified vehicles. Industry response to consumer ratings remains one the most important drivers for vehicle safety innovation to the benefit of all road users across Europe."

The safes



Le Mans



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Richard Mille, founder of the eponymou watchmaking brand. is striving for greater diversity in motor sport

female racers who are at the highest levels and, most in our sport.

will spark long-term change.

(01)



Creating equal sporting opportunities

Striving for greater gender equality in motor sport, *Richard Mille* explains his own personal drive to open doors for female racing talent and his duty, as President of the FIA Endurance Commission, to lead change

The ambitious project of building the Richard Mille Racing Team was the beginning of a great adventure - not just for me and for Richard Mille as a brand, but also for the forefront of what we hope will be a new era of opportunity in motor sport, when talented women are afforded the chance to race at the importantly, with the top teams

The topic of how we can help women progress in motor sport has been tabled many times and we wanted to take action that we hope For that reason we opted to approach our goal in a more holistic way, not simply through the support of driving ambition on the part of emerging female competitors, but

through the creation of a complete environment in which they can grow and succeed

At Richard Mille, we have one ambition: always being at the top of everything we do; there are no concessions. Setting up the team meant having the best possible conditions, resources and technical support to enable us to showcase the talent and ability of female racers to compete at the top level of endurance racing.

As the first-ever all-female LMP2 team in the European Le Mans Series and at the Le Mans 24 Hours, we knew all eyes would be on us and our performance, so there was no question we had to be as ambitious and precise on track as we are with our watches.

FIA Women in Motorsport Commission President Michèle [Mouton] and I share the same passion: to unearth, nurture and develop female racing talent and to forge ahead with greater diversity across the whole of our sport. By working together and benefiting from the Commission's knowledge of worldwide talent, we were able to secure the best racers and role models for our programme.

The onset of the COVID-19 pandemic at the start of the motor sport season set us an even tougher challenge than expected and ahead of the revised FIA European Le Mans schedule our squad of three drivers - Katherine Legge, Tatiana Calderón and Sophia Flörschhad limited track time in which to familiarise themselves with the team's car

However, when the delayed ELMS season finally got underway at Le Castellet in France, our mission grew even more complicated as Katherine's accident in practice and Sophia's prior commitment to a rescheduled Formula 3 race meant that Tatiana was left as our sole remaining racer.

There was never any thought of giving up though and with the support of Signatech, our technical partner, we were able to get back on

'We are on a revolutionary journey that I hope will lead to a change in perception'

Tatiana Calderón, Sophia Flörsch and Beitske Visser became the first all-female LMP2 team to race at Le Mans. track with a revised line-up that went on to secure an enormously satisfying fifth place in our first race.

With such challenges comes even greater motivation and further opportunities, and while Katherine continues her recovery, we have been able to welcome Beitske Visser to the team – another young racer



RICHARD MILLE

who has already proved to us she has earned her place.

More promising results came in the following three ELMS races at Spa - where the team finished sixth and then back at Le Castellet and most recently Monza. It's a tough journey so far, but I'm extremely proud of what the whole team has achieved in its infancy.

The team's debut at the Le Mans 24 Hours was unusual. We had a rookie crew who had never competed together, the pre-event test was cancelled and the long practice sessions were reduced due to the compressed schedule.

The longer hours of darkness posed a greater challenge for newcomers and, of course, in light of the restrictions imposed by the pandemic the electrifying and magical atmosphere created by the incredible Le Mans crowd was gone

Despite the absence of fans, Le Mans still evokes intense emotions and the sense of pride when our red #50 Oreca 07 Gibsonpowered car took the chequered flag ninth in LMP2 was profound.

We are on a revolutionary journey that I hope will lead to a change in perception, greater on-track success and ultimately victory at Le Mans.

We have a long-term commitment to support female racers and to promote not only the need for equality but also everyone's right to it. There is a desire to facilitate change within everyone in the sport - it is hugely important and the day must come when labels and prejudices are firmly left behind in the past.





P24



Oscar's winning performance

Oscar Piastri's journey to this year's FIA Formula 3 (02) Championship title has taken him halfway around the world and through some tough times, but for the Australian even greater vistas are now on the horizon... Oscar Piastri perches on the arm of his sofa at home in Oxford as the newly-crowned 2020 FIA Formula 3 champion. Far from resting on the laurels of his success, however, the 19-year-old racer is fresh from a day working with Renault at Enstone where he's been pushing hard to prepare for a step up to Formula 2 next year.

It's a world away, both physically and metaphorically, from his earliest racing years in kart meetings in his native Melbourne, Australia, and Piastri admits that the journey to this point has been difficult.

"It was definitely tough," he recalls. "I left home when I was 14 with my dad, and we moved to the UK and lived together in a flat for six months. It was tough on both of us, especially my dad. I've got three sisters and obviously he had to spend six months away from my mum and his daughters. So I think it was just as tough for him as it was for me.

"Leaving all my friends behind was certainly a pretty big sacrifice, but it was one I knew I needed to take if I was going to have a career in European motor sport and ideally F1 if I can get there."

That commitment means the Australian - who is now managed by countryman and former F1 star

Mark Webber and has caught the eye of Renault Formula 1 driver Daniel Ricciardo - rates his father as the most influential person in his career. Following their move, Piastri went to boarding school in the UK until COVID-19 intervened. But Coronavirus hasn't halted his career progress. The journey to Europe was for a final season in karts that was solid but not spectacular, and he feels it was the switch to cars in the British Formula 4 championship that allowed him to showcase his potential.

"It's not a given that being quick in karts is going to mean you're quick in cars. To be honest for me it was almost a little bit of the opposite. I would say I was decent in karts but when I raced in Europe I didn't win anything.

"When I entered cars I came into my own and had six race wins that year," he adds. "I hadn't really won that many races for a year or two, so to know I could do it in cars as well and get the recognition of the car racing scene was important. To be honest, after your first year in cars nobody really looks at what you could do in karts anymore, so to establish myself was key." After a runner-up performance in his first full season in cars, Piastri stepped up to Formula Renault Eurocup in 2018, but the wins dried up as the reality of trying to juggle exams alongside pursuing a racing career hit home.

That made his 2019 season all the more crucial as Piastri moved to the series' defending champions, R-ace GP, and with a year's experience under his belt he was tipped as a pre-season favourite. A strong start saw him leading the way comfortably before his title rival Victor Martins piled on the pressure in the closing stages. Piastri was ultimately successful by just 7.5 points and it was a fight that would prepare him well for his F3 campaign this season.

I did this year as well.

"At the beginning of the year I had a strong first few rounds and then after that I didn't do anything spectacular, I was just there or thereabouts and picking up the points. That's what won me the championship I would say." Races in the compressed 2020 Formula 3 season came thick and fast, with a total of nine rounds and 18 races being held from early July to mid-September. But it was the final two events in Italy - at Monza and Mugello respectively - where everything came to a head.

P25



"Certainly the experience of the Eurocup title decider helped me this year. Victor was super quick and had a run of six poles in a row at the end, so we needed to pull off a miracle to just be there if he made a mistake and that's basically what I did. To be honest, that's pretty much what

"Monza was the most challenging weekend I've ever had in my life, let alone racing! It was just a massive rollercoaster of emotions. Qualifying was a disaster with all the traffic and then I picked up a grid penalty. Then to have the Race 1 that I did and come back to the podium, I'd rate that as one of the best drives of my career. "Obviously I was over the moon with that and was having a solid Race 2, but I got taken out

'Monza was the most challenging weekend in my life, let alone racing!'

and when I saw Logan [Sargeant] was up to fourth place from 26th that definitely didn't help! I had just got back to the truck, was watching the live timing and saw Logan's name drop down the order and I couldn't believe it. And then I picked up another grid penalty after that! So I went from happy to sad to happy to very angry, and I don't think I've experienced as many emotions as I did that day at Monza. Emotionally it was very taxing."

WINNING MINDSET

Piastri had to deal with those emotions fast as the title decider in Mugello came just a week later, and he came out on top of a three-way fight against Sargeant and Theo Pourchaire by a mere three points.

"Mugello was taxing for different reasons. In Monza there were quite a few things out of my control, but Mugello was a bit different. It was more just disappointment than frustration, but during the races I was making sure I could get as far up as I could. My mentality was, 'Wherever I end up, as long as I did the best I could then that's all I can do'. That mindset and mentality really got me over the line at the end."

There was some downtime with his girlfriend and school friends to celebrate, but after that Piastri went straight into prep mode as he looks to continue his progress next year. Making use of the Renault facilities in his first year as part

of the team's driver academy, the Australian keeps channelling his recent experiences to set realistic targets.

"It's very, very likely I will be in F2 next year. We're sorting the final details now, so it's more or less confirmed that I'll be on the grid," he says. "It's probably going to be a similar mindset to what I had in F₃. I came into F₃ knowing that there was a possibility I could fight for the championship but not really aiming to be fighting for it. I would have been quite pleased with a top five, so I think I need the same approach."

Piastri has been working on his upper body strength for both the more physical Formula 2 car and in the hope of a run in a two-year old Renault F1 car at some stage on his way to the top.

"If I keep doing what I've been doing the last couple of years then I'd like to hope that I could get an F1 seat, but there's some stiff competition in the academy at the moment with [Guanyu] Zhou and Christian [Lundgaard].

"Renault were in a tough spot this year. I know they've copped a lot of flak for putting Fernando Alonso back in the car but to be honest they didn't really have a lot of choice to promote from within the academy because I'm the only one that now has a Super Licence, and at the beginning of the year if you'd said am I going to have a Super Licence I would have said probably not.

"Having that Super Licence is definitely something important, but anyone who wants an F1 seat is going to have to stand out. I can't be complacent; I need to be fighting for championships. Everyone knows there's a lot more than just speed in F1. Timing's a massive part and a few other things as well, so all I can really do is the best I can, hopefully I'm at the top of a few championships and my time will come.'

While Piastri's journey has taken him a long way from his homeland and from his early racing career, it's clear that his latest success means a whole new world of racing opportunity awaits.



win with Prema Racing has set him on the road to an F2 drive in 2021.









FRONT

TECH REPORT FORCES

towards greener fuels The FIA Foundation and redefine school trips; Road safety's young advocate FIA FAMILY

P26

P27

TEXT 03 -MARC CUTLER ANATOMY OF AN ACCIDENT

Data collection and analysis is at the heart of the FIA's work to learn from accidents and continuously improve safety

During this year's Italian Grand Prix at Monza, Charles Leclerc lost control of the rear of his Ferrari SF1000 at 210km/h in Parabolica corner - one of the fastest points of the circuit - causing | mitigation, from using instrumentation to collect him to slam into the tyre barrier with an impact velocity of 155km/h and a resultant peak force equivalent to 32G. But the fact he walked away unscathed was no accident.

Using video analysis, the impact angle was determined to be 27 degrees. The type and placement of the barrier was predetermined by the FIA using simulation software, to ensure the energy of an impact at this angle could be successfully managed to prevent injury to the driver.

The FIA's circuit simulation software uses a virtual car model to predict the speed and trajectory should a loss of control occur at any design and choice of barrier for all corners and run-off areas. This software enables circuit designers to understand the angle at which any impact may occur at each corner, ensuring they select the best type of barrier to manage the energy during an accident and minimise the forces transmitted to the driver.

DATA DRIVEN

The use of real-world accident cases is at the heart of all the FIA's work in accident prevention and injury data from the cars and drivers, to analysing that data and using it to develop solutions.

Take, for instance, Racing Point driver Lance Stroll's accident during this year's Tuscan Grand Prix. He suffered a puncture at the high-speed righthander of Turn 9 at the Mugello Circuit and collided head-on with the barrier. While only one camera caught the accident, the FIA was able to piece together exactly what happened to the car and driver using an array of on-car sensors and data logging systems.

Post-race analysis using information from the onboard Accident Data Recorder (ADR) showed that Stroll lost control at 270km/h and impacted the point on the track, thus determining the optimum barrier at 97km/h. The ADR data also showed a peak car deceleration of 19G, with the impact angle into the barrier determined to be 48 degrees.

> Using this data can help researchers understand how the passive safety structures of the car and the driver's safety equipment are performing, enabling them to more fully understand the limits concerning the driver's tolerance to injury.







ORCES

TECH REPORT

Road safety's young advocate

P28

P29

A further important data source is the in-ear accelerometers which are moulded to fit inside a driver's ear canal to measure the movement of their head in a crash. Biometric gloves, currently only used in F1 and Formula E but which are likely to filter through to other championships, measure a driver's vital signs following an accident.

Another tool is a high-speed camera used in Formula 1 and other world championships which is mounted inside the cockpit facing the driver, filming at up to 400 frames per second. The data captured by the camera provides accurate information of what happens to a driver in the event of a crash, which may not be captured by the range of sensors inside the cockpit and can improve the understanding of the cause of any injuries.

All of these are incredibly important for FIA researchers, as the more data they have the better they can analyse each accident case and react where needed

RALLY RECOVERY

This safety technology was tested to the limit at this year's Rallye Monte-Carlo, when Hyundai crew Ott Tänak and co-driver Martin Järveoja were taken to hospital with minor abrasion injuries following a huge high-speed crash off the side of a cliff at the start of the event.

While there was only one off-car video showing how the accident started, using ADR data the FIA was able to determine that Tänak left the road in sixth gear at 165km/h exiting a right-left kink in his Hyundai i20 Coupe WRC.

The car then went into a series of barrel rolls after being launched into the air by a road edge ditch and verge. The initial impact occurred on the right side (co-driver), which was 27G, with multiple further lower-magnitude impacts during the rolling phase. The ADR logged a second high-magnitude impact of 30G before the car came to rest on its wheels.

The Hyundai sustained significant damage to the front-right corner and rear-left corner, but the survival cell remained intact with minor damage due to the magnitude of the accident. The onboard high-speed camera also captured the movements of the driver and co-driver in the cockpit as they went through the series of rolls.

This was all fed into the research project for a revolutionary new tubular chassis incorporating the safety cage for rally cars that the FIA is working on for launch in the WRC in 2022.

With ADRs working in conjunction with devices like the high-speed camera and in-ear accelerometers, a fuller dataset can be collected and a better picture of the accident emerges. This is essential for safety research and the mitigation of serious injuries, says FIA Safety Director Adam Baker.

"To understand what is happening during the crucial moments in an accident, we can piece all this data together to learn about the dynamics of the head and spine during a High-G impact," says Baker. "All of this information is delivered to us from the various recording instruments that capture data from the cars and drivers."

MEETINGS OF MINDS

That data is then fed into the World Accident Database (WADB), which brings together information from accidents around the world. from karting to F1, rallying and Cross Country. It enables researchers to study individual accident cases and, when considered collectively, the statistics generated are used to prioritise research projects and identify systematic risks.

The WADB is used by 139 ASNs around the world to submit data from any serious or fatal accidents that may occur across all motor sport disciplines. The data gathered includes acceleration and speed levels, detailed descriptions of the accidents and the medical repercussions for the people involved.

This data is then used by the FIA Serious Accident Study Group (SASG), which studies accidents that have caused fatalities or serious physical injuries to drivers, co-drivers or anyone else such as spectators and officials.

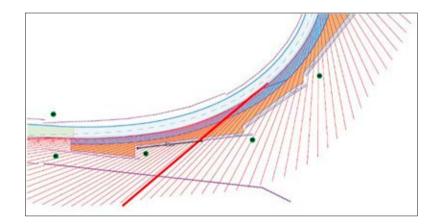
The group will also look, when appropriate, at severe accidents where there might not be physical consequences, such as the crash between Fernando Alonso and Leclerc at the 2018 Belgium Grand Prix where the Halo frontal protection device prevented Alonso's car from hitting his fellow driver.

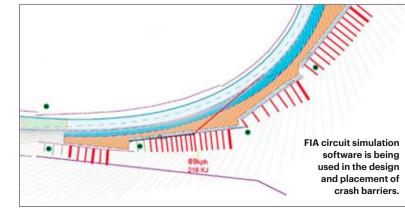
Other accidents that the SASG has investigated include the 2018 FIA Formula 3 World Cup race in Macau, where Sophia Flörsch suffered a fractured spine after her car went airborne and left the track: and the 2018 IndvCar race in Pocono, where a 200mph crash left Robert Wickens with severe injuries.

Each meeting is chaired by FIA President Jean Todt, which demonstrates the importance of the work, along with presidents of every FIA sporting



'Through our meetings the FIA can identify best practice and apply it to all levels of the sport'





explains Baker.

ongoing research projects.



commission including single-seater, rally, touring car, karting, drifting, drag racing and hillclimb. Also in attendance are the FIA Safety Department staff and sporting department heads. This multi-disciplinary make-up of its membership, which includes doctors, engineers, researchers and promoters, ensures that no area of motor sport is left unrepresented in these meetings. Each accident that is analysed is looked at from technical, operational and medical sides, and measures are then taken forward. "Through these meetings the FIA can identify best practice and apply it to all levels of motor sport, not only making sporting or technical changes in the championships it governs, but also recommending changes to the improvement and implementation of regulations for other championships outside its remit,"

These groups work in conjunction with the FIA Research Working Group (RWG), which 'peer reviews' ongoing research into new safety devices and practices conducted by the FIA. The RWG is made up of an influential body of engineers who have experience across all levels of motor sport, as well as medical experts who collaborate on matters of safety.

The meetings are led by the FIA's Head of Research Tim Malvon, an engineer who worked with Sebastian Vettel at Red Bull during its dominance of Formula 1. Together with Baker, Malyon has an oversight into every step of

These projects are typically reviewed with recent results from physical testing or simulation. with proposed design evolutions or changes in

test methodology that can be discussed. Once members have presented their feedback, they are asked to approve projects that have been previously peer reviewed and reached the conclusion of research. Members are then presented with the latest accident investigations to keep them informed of the developments in parallel working groups and commissions.

Projects will usually pass through the RWG three times before being pushed to the FIA Safety Commission, which is chaired by Sir Patrick Head. which gives them the final sign-off before they are put forward for a formal vote at the World Motor Sport Council - the ultimate ruling body. Cases that are of particular interest are also presented to the FIA Drivers' Commission, where members are given the chance to comment and contribute to the work of the RWG.

The process is a leap forward from when safety products used to be introduced into motor sport, with the HANS device a notable example that took around 10 years including the first tests before being adopted widely by all disciplines. Contrast that with the Halo frontal protection device and there is a clear roadmap for widespread adoption. Having first being put on F1 cars in 2018, by the end of 2020 the device will feature on most open-wheel championship cars.

"The pace at which this is being deployed across motor sport has much to do with the collaborative safety effort that exists in the RWG," says Baker. "This means more innovations that make motor sport safer and it gives the industry stakeholders access to the latest safety research which can be factored into their own planning to facilitate early adoption.

Above: a sample of the onboard data collected from Leclerc's Ferrari.

SIMULATION TECHNIQUES

This collaboration extends to circuit design. where much of the safety systems such as TechPro, debris fences and run-off areas are predetermined long before a race weekend.

Simulation capability extends to the research of spinal injuries after heavy impacts, which can be modelled using the Total Human Model for Safety (or THUMS).

With financial support from the FIA Foundation, the FIA is able to employ THUMS, which enables computer simulations of actual conditions during a crash using finite element analysis to simulate crash scenarios. Most recently THUMS has been used for research into seating positions in Cross Country competition vehicles, where spinal injury cases are frequently reported by drivers.

"Using THUMS simulation has enabled us to study a wide range of Cross Country accident cases and improve our understanding to refine the best practice for the seating position of competitors in Cross Country competition vehicles. This will help us to avoid spinal injuries which are common in that discipline," explains Baker.

With these various methods of data analysis and simulation techniques, researchers have more data than ever before to understand the anatomy of accidents in motor sport. But much like racing teams search for every last second of performance from their cars, the FIA is striving for better methods that can give a more complete picture and a clearer view of what is happening in an accident, and find ways to improve the situation for those involved.





04

UP FRONT Gallery News

TECH REPORT FIA crash DRIVING FORCES

COVER STORY New routes for mobility; 'Toolkit' aid for mobility clubs; AUTO FOCUS The FIA and F1 move towards greener fuels; Renault's game-changing CEO; The FIA Foundation and UNICEF The FIA Foundation and UNICEF redefine school trips; The UN's youth action; Road safety's young advocates

INSIDE THE FIA FAMILY Motorsport

FINAL LAP

P30

P31

COVER STORY

The road that lies ahead

P32—33

Navigating a new path

The FIA's Thierry Willemarck on post-

P50—51

P34—38

COVID travel trends

Mobility in the future The FIA 'toolkit' aimed

the brink How the automotive at improving mobility club resilience industry is recovering from the pandemic

P40-43

Back from Directions of travel

P44—45

Three mobility experts map the possible future of travel

P46—49

Di Grassi's future focus

The Formula E star on the race towards sustainable mobility Hydrogen's big goal Hydrogen fuel cells: the power for public and long haul transport?

(04) FROM CRISIS TO OPPORTUNITY

The COVID-19 pandemic is set to have a lasting impact on mobility and travel. But as businesses start to recover from its impact, they are seizing the opportunity to develop new modes of transport that will lead to a safer and more sustainable future







COVER STORY ew routes for mobility

Road safety's young advocate

FIA FAMILY

P32

P33

Navigating a TEXT new landscape



(04)

As we adjust to a post-COVID-19 environment, FIA Deputy President for Automobile Mobility and Tourism *Thierry Willemarck* looks at how the pandemic is changing the way we move and how emerging trends will shape the business of mobility in the future

The effects of the pandemic are only just

starting to become apparent and it seems as if

there will be no swift exit. What mobility trends

have you noticed emerging during this period?

I think the main effects we have seen are that

people are wary of public transportation and,

when travel has been possible, it has seen a

shift back towards personal car use and also

solutions, particularly e-scooters and e-bikes.

Demand for e-bikes is exploding and most

developing new services around that trend.

is a lot of activity around last-mile delivery

services. On the downside, we have much

fewer technical interventions, roadside

over public transport they are generally

driving less as home working has seen

In the post-COVID situation with the

a manifold increase.

assistance call-outs, than before because

while people are choosing personal mobility

experience we have there will be much less

business travel. Taking our own example at

the FIA, we are doing most things remotely.

I have been giving lectures as part of FIA University programmes to more than 150 people and you develop systems to deal with that. We have staff managing chat windows,

referring queries so that you can continue

I do believe it is a trend that will persist in

the wake of this pandemic.

to efficiently interact with the attendees and that adaptation is improving all the time.

as well as increased use of cargo bikes. There

an increase in the use of micro-mobility

FIA member clubs I have spoken to are



Thierry Willemarck is working with FIA mobility clubs to plan for a post-COVID future. Business travel has slowed dramatically but international travel for tourism has slowed to a trickle. For many motoring organisations tourism services make up a significant part of their business. Is it a business which clubs can continue to pursue?

Well, at my own club, the Royal Touring Club of Belgium (TCB), we had a board meeting recently to look at the forecast for the coming years and, honestly, we do not expect travel to recover up to the level it was pre-COVID before 2024. There are, however, some cancellation insurances that could continue to be sold but by and large we are going to probably stop that kind of business, simply because demand no longer exists. However, going back to micro-mobility, what you see is that the developments around e-bike, e-bike assistance, the sale of batteries and so forth presents an opportunity. So patrolmen on the roads might carry standard batteries. With three types of battery you can cover 80 per cent of the e-bike models on the market

That's something I think will generate some business in the future. But wider travel service remains a big question.

You mention opportunities around e-bikes. Are there other avenues to explore? How difficult a period is it for clubs to know what to do, whether to shift one way or the other?

We've had several conferences on the topic - working together and brainstorming and sharing experience - and we realised as roadside assistance call volumes are dropping, a motoring club active in that area can shift its activity from emergency response to an appointment-based service or to home visits. facilitated by the huge rise in home working.

That also creates efficiencies in regards to scheduling. You can co-ordinate the day of a patrolman or service person much more closely than when you are responding to emergencies. It has increased tremendously the productivity of our patrolmen. However, some clubs have the model of a call centre but no patrolmen and they rely entirely on towing companies. For them it's a variable cost. So if there is lesser volume it doesn't affect them tremendously.

Still, the towing companies are suffering because they have fixed costs and they have lesser volume to cover it. So in the long run the price per rescue could increase. That's what some are expecting in the years to come. The threat is also that if there is lesser rescue on the roadside assistance, the product may no longer appear as necessary. By that I mean that when the time for renewal comes around many people might think twice. To mitigate that, many clubs are starting promotions whereby if you renew now you get a six-month extension

You mention the need to brainstorm and innovate. For want of a better phrase, are clubs struggling to know where to place their bets?

There are many pilot projects happening but they are not providing the same kind of revenues and margins that travel assistance was providing. You cannot replace that overnight. So in our conferences we were also targeting cost-cutting and the scaling of economies.

In Europe we are very much looking at common systems to register the statistics of our roadside assistance and the communication with third parties. If each club has to invest in its own system, it's time wasted

'Demand for e-bikes is exploding and clubs are developing services around that trend'

around the world.





re-inventing the wheel. More than 80 per cent of the time we are doing common things. So why not agree a common platform? We all agree we pay per use and there is a fixed fee to enter and then, according to the volume. it should be cheaper than building your own system. This is something I know European clubs are looking at which could be employed

Prior to COVID-19, we were already in a period of disruption with the rise of electric vehicles and multimodal transport systems. Has that shift been hastened by the pandemic?

The change began 10 years ago where clubs were already beginning to think 'it's not the car that is important to us, it's the driver. the person, his or her family'. And that's still where we need to develop new services. So whatever means of transport you are on, if you are in trouble we are here as a kind of a mobility concierge service that provides you with a solution. You need a cab? We send you a cab. You need a train ticket? Here it is. You need a map to journey from A to B across different systems? Here are the options. At the TCB we are working together with a Dutch company that started the idea of bike swap. Instead of buying a bicycle, you rent it, okay? Whenever you have an issue with your existing bike, don't worry, as within half an hour you'll have a replacement delivered to you These are the kind of services I think we can

provide tomorrow. We will see more activity in final-mile delivery in downtown areas because local authorities will continue to fight against the presence of cars in those areas. Cargo bikes are going to be more and more numerous and that's a space we can occupy. These are the changes that we have been pursuing, but now COVID says we have to increase the speed at which we change. And in some ways it confirms that the developments we have been exploring are the right ones.

The only concern I have is that the message needs to be global and if you address members of the African or Asian clubs, their situation is very different. But there the solutions have been just as forward-thinking In Africa, a number of clubs have developed expertise in the evaluation of second-hand cars. They have positioned themselves as



While the pandemic has educed the need for roadside assistance there are opportunities for clubs with the growth in cargo bikes and ersonal mobility such -scooters (below)

a trusted source of valuation. Insurance companies are very much interested in their service. You buy a second-hand car, you want to get that car insured, and the insurance company needs a valuation for that car, they need a trusted source for that and clubs are meeting that demand.

Personal mobility - scooters, mopeds - have always been a major mobility option for emerging economies. Is that demand just going to increase in this environment as people shy away from public transport and does it present safety issues that could be solved by clubs getting involved in ratings or validation programmes?

| I think so. The FIA has developed a new norm for helmets that are safe enough for a low price. That's an ongoing project, and we had a first test in Tanzania that has been very successful and we hope to be able to multiply this kind of example. That's good for clubs because it puts them in the picture, they improvise and they can be used as a sales channel for safe helmets.

Obviously this crisis impacts every organisation and business. Some of the larger clubs are more resilient than others but is it the small and medium-sized ones that are most at risk?

| Undoubtedly you need to have a sense of urgency. When you are facing a tremendous reduction in turnover and your new possibilities are not compensating immediately, there is just one solution to cut costs

You still need to keep capacity so that you can continue to serve, otherwise you damage the image of your service. But at the same time vou need to move a little bit from a fixed cost structure into a variable cost structure. It's a very difficult situation

What I would say, though, is that the FIA is deploying all the means at its disposal to provide assistance and we will continue to do so in the future.





04

DRIVING FORCES Oscar Pias

FRONT Gallery News COVER STORY New routes for mobility; 'Toolkit' aid for mobility clubs; Industry response to COVID; Changing lanes – the trends likely to alter mobility; Di Grassi's future focus; Bigger is better for hydrogen AUTO FOCUS The FIA and F1 move towards greener fuels; Renault's game-changing CEO; The FIA Foundation and UNICEF redefine school trips; The UN's youth action; Pood safety's young advocates

INSIDE THE FIA FAMILY AA Vietnamese Motorsport Association

FINAL LAP Tracking motor sport's safety advances P34

P35

GA MOBILITY GOING FORWARD

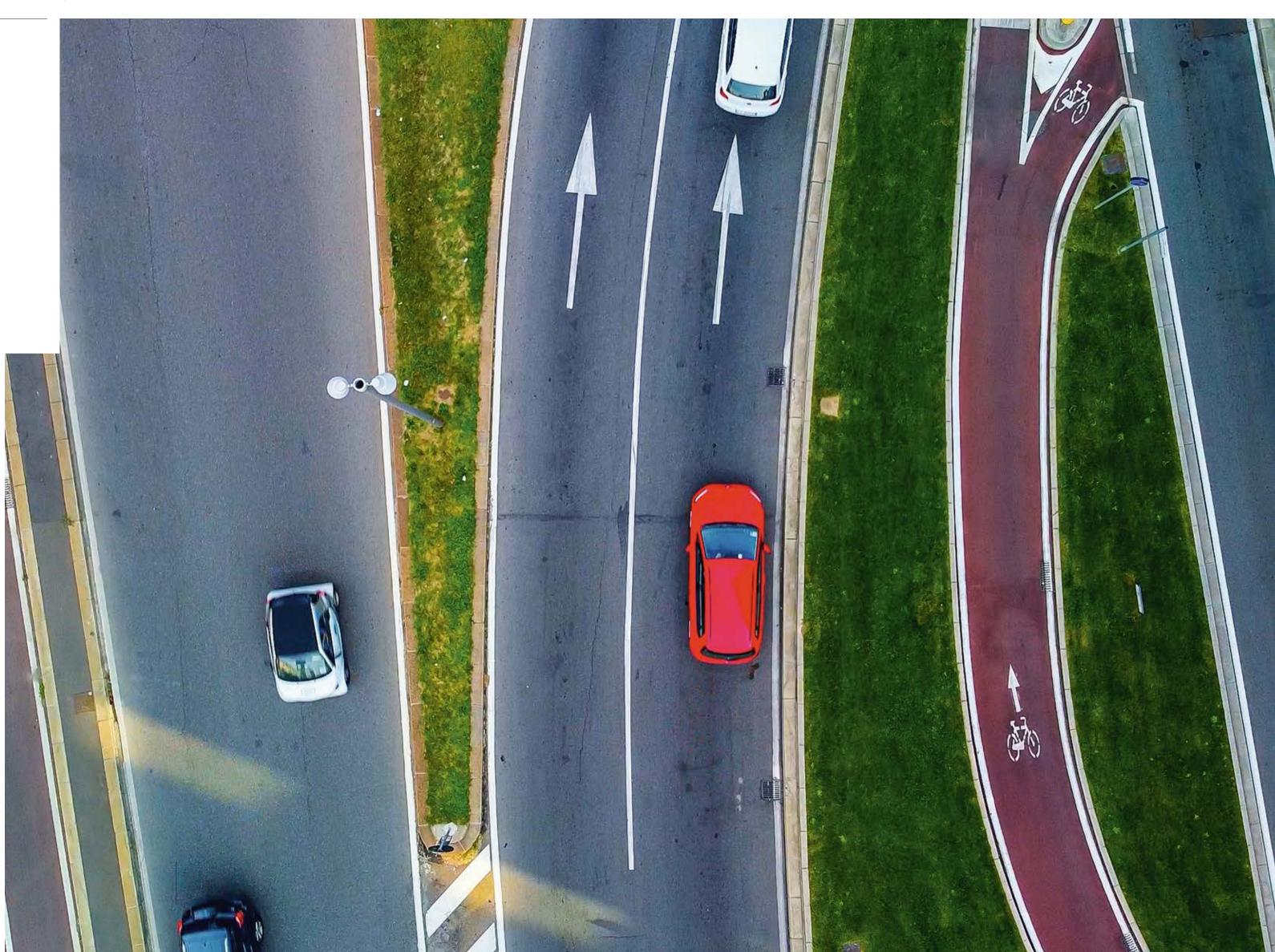
The COVID-19 pandemic has had a profound impact on almost every sector of the economy, and automobile associations are no exception. But, by leveraging the expertise, creativity and responsiveness of its network of 243 members, the FIA has built a toolkit design to improve the resilience on clubs around the world



A year ago, disquieting reports of a novel respiratory virus began to emerge from China, clustered in the Hubei Province and the city of Wuhan. By January 2020, the virus appeared to be spreading across China, and sporadic international cases – both real and suspected – started to appear. On January 30th, Tedros Adhanom, Director-General of the World Health Organization (WHO), made a formal declaration that the virus was a Public Health Emergency of International Concern (PHEIC). On February 11th, it received an official name: Coronavirus Disease 2019 – usually contracted to COVID-19.

By March 11th, WHO had declared COVID-19 to be a global pandemic. In the second quarter of 2020 many countries, for the first time in modern history, began limiting movement, requiring businesses to shutter and instituting command-economy blueprints never before seen in peacetime. •

A reduction in road travel during the COVID-19 pandemic has forced mobility clubs to rethink their business plans.





04

2020

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COVER STORY oolkit' aid for mobility clubs

Road safety's young advocate

ΓΙΔ ΓΔΜΙΙΥ

'Unprecedented' is the word most frequently used to describe the attempt to control COVID-19 and the impact of that on the global economy. In June, the World Bank forecast global GDP would shrink by 5.2 per cent in 2020. For context, the Global Financial Crisis caused global GDP to drop by 1.8 per cent in 2009

Every area of the global economy has been affected by COVID-19 but few to the extent seen in mobility. Lockdown has hit hard everywhere from travel and tourism to logistics, commuting, workshop services and training. Self-reporting from FIA Mobility member organisations has 71 per cent of clubs reporting a significant impact, and 27 per cent reporting some impact. The smallest clubs appear to be the hardest hit: 81 per cent of clubs designated 'small' say they are suffering significant impact

Those impacts are diverse and far-reaching but break down into easily understandable groups: club revenues are suffering because members are doing fewer of the activities that traditionally generate revenue for them; club services are being rendered irrelevant by a sudden and wholesale change in members' behaviour; and clubs are being required to be more agile and flexible in their organisational principles, while also endeavouring to make a positive contribution in the fight against COVID-19.

Part of the FIA's response comes via the Mobility Worldwide (MW) programme launched in April by the FIA Mobility Division and the FIA Innovation Fund. At its inception, the programme was aimed at providing enhanced support and mentoring to emerging and new FIA member clubs. The programme was conceived before COVID-19 struck – but augmented to include articles designed to deal with the impact of pandemic, moving from survival in the early stages to rebounding

'While COVID-19 poses a threat to mobility organisations, it also presents opportunities'

and building in the aftermath of the first wave.

MW's COVID-19 component commenced on June 8th. It was open to all mobility clubs and ACNs, with clubs invited to self-nominate, but also allowed region heads to suggest suitable candidates. As with many FIA initiatives, the intention was to share best practice: the programme targets both clubs in need of assistance in formulating their response to COVID-19, but also clubs who have found effective ways to deal with the new world - in addition to broader ideas to fuel resilience and growth beyond the scope of a COVID-19 response.

Ultimately, 28 clubs formed a core group participating in the MW activity, mixed between those receiving, and those needing help. Using the services of consultancy EY-Parthenon,



ANETA in Ecuador redeployed its driving school fleet to act as a food elivery service

the programme developed a best practice 'toolkit', the tools of which in large part come from observations of clubs deploying successful strategies in the midst of the pandemic, suggesting ways in which clubs can protect revenue, have a positive impact of the COVID-19 recovery effort, better connect with members and, indeed, grow the membership. It advances the theory that, while COVID-19 undoubtedly poses an existential threat to the existence of mobility organisations, it also presents opportunities.

RECOMMENDATIONS

The toolkit suggests the most pragmatic approach to coping with COVID-19 is to pull back and gain a strategic overview of the organisation, preparing first for survival with effective, shortterm crisis-response planning, then building in resilience by adapting the business to suit the medium-term outlook, and finally planning for growth to deliver long-term value creation.

The first step dealt with by the toolkit is triage. Few businesses – if any – were prepared for the impact of COVID-19. With hastily convened crisis management plans being put into place, it provides 10 questions to evaluate the vigour and fitness of that plan, covering basics such as: how does the organisation ensure the well-being of its people? Are there well coordinated and standardised communication systems and protocols? Keen to prevent 'crisis-paralysis', it goes on to ask operational questions regarding the appropriateness of cash reserves and the identification of broken links in the supply chain.

These questions are not a check-list but rather a route map to ensuring a club can develop a robust and professional crisis management plan. While COVID-19 is clearly at the forefront of everyone's thoughts, the nature of crisis planning assumes the sort of situations that arise are unforeseen. The goal is to build a business with enough inherent resilience to cope not iust with the pandemic but also be sufficiently robust to deal with any other crises that come along in a nebulous future.

While crisis management planning is largely generic and could be applied to almost any industry, participants in the MW project identified three overarching business resilience elements that begin to target planning more specifically on the mobility sector. Clubs that have performed well during 2020 all identified the need to have diversified income streams, a lean and agile cost structure, and a strong member base.

Having a diversified income stream allowed clubs to better cope with shocks to one particular aspect of the business. An example provided was of a club that took a big hit on travel insurance. rom many cancelled trips, offset by a strong decline in car insurance pay-outs because fewer journeys greatly reduced the number of road traffic accidents.

Having a lean cost structure was of more generic benefit, allowing clubs to scale cost up or down according to circumstance. Elements such



of costly assets.

stability and resilience.

P36

P37





as using contractors for Road-Side Assistance (RSA) rather than having the business in-house, and renting rather than owning office space, allowed clubs to greatly reduce their outgoings during lockdown, rather than carrying the burden

The subject of a strong member base manages to be specific to mobility but bears comparison to other business areas. Club memberships are typically fixed-fee and thus provided a relatively stable source of income for clubs. Membership does not necessarily decline even when customers make less use of the services on offer, and thus loyalty is inherently good for

BEST PRACTICE IN ACTION

Rather than feature generic examples to illustrate 'Survival', 'Resilience' and 'Growth', the toolkit contains practical and tangible instances of best practice, taken from the various clubs that participated in the programme. They provide a more relatable basis on which to move forward, while potentially also serving as a starting point for further bilateral club discussions: they present an open invitation to learn and to seek collaboration.

Many of the examples address specific issues of lockdown: idle assets: changing customer demands: the need to contribute to societal well-being. Some, however, look at a broader issue of operational security. One such initiative. developed by the New Zealand Automobile Association, was to closely monitor its weekly cash position to ensure the liquidity of the organisation during slow periods.

New Zealand's NZAA focused on cash flow as a way of protecting the business.

Decision-making was adapted within the NZAA to focus on cash flow considerations. with priority given to maximising cash-in, and minimising cash-out. During New Zealand's lockdown, all management decisions at the NZAA were made with reference to the weekly cash position forecast. This allowed the club to maintain tight control over its finances and, from that position of knowledge, make effective and focused decisions.

For many clubs, getting an iron grip on their cash flow position first required an income stream to be generated. South Africa's AASA found retail revenue cut off by the closure of physical shops

(prompting a switch to online sales) but also because of changing consumer habits.

It thus made the decision to pivot away from selling items popular with long-distance travel travel plugs, luggage, flight accessories etc - and instead concentrated on local travel, domestic mobility and local leisure demands including car care products, camping equipment and bicycles. While founding new supplier relationships required rapid change, it allows the AASA the opportunity to begin generating income again, while responding to a burgeoning need.

In some instances, the requirement has been to redeploy existing assets rather than change the offering. One of the most innovative and responsive initiatives came from ANETA in Ecuador.

Like many clubs, ANETA found that its assets - in this case a fleet of driving school vehicles and instructors - became a fixed cost when lessons were halted. Ingeniously, the club managed to solve its problem and provide a valuable public service by re-tasking the motorcycles in its fleet as a food delivery service. ANETA Express allowed the club to use its assets, maintain its employees and provide a service - not unlike the model of UberEATS - that allowed people to receive food from restaurants. The initiative had a positive impact on the club's short-term cash flow - but also encouraged Ecuadorians to stay indoors and maintain social distance.

Not every customer-facing initiative was intended as a profit centre to offset lost income; some look to the future and the potential to use the unexpected slack in business models. for brand awareness. AMZS in Slovenia put its fleet assets to use to support frontline workers. It provided RSA and transportation from home to work for employees of hospitals, health centres and care homes. This was altruistic, and lacking in ulterior motive - though the MW programme highlights that this kind of social engagement can create brand awareness through media attention and ensuing publicity.



In South Africa, the AASA has shifted its business away from long-distance to local travel needs



P38

It strengthens the image of the club as a community-minded player, with a focus on all things related to mobility and travel.

The quest to be strongly associated with all things mobility and travel comes with certain responsibilities. In Europe at the moment, the different travel restrictions and guarantine requirements between neighbouring countries makes tourism a fraught exercise.

For this reason, ANWB in the Netherlands has introduced a travel information dashboard. Developed in cooperation with FIA Region I, it has been made available to members and non-members alike, making ANWB the trusted source for travel information in the region. Between January and April, monthly page views on the club website dropped from over nine million to under six; after the service launched on May 7th, the site has seen a 61 per cent uptick in hits. While free to use, raising brand awareness and providing an essential service, in the longer term it also generates significant

'The toolkit offers best practice examples in which clubs can endure the crisis'



MZS in Slovenia sed its vehicle fleet o support frontline orkers. Below: In the Netherlands ANWB became the go-to travel

cross-traffic to revenue-generating areas of the site - it is, in essence, a win-win for clubs and road users.

While COVID-19 continues to dominate the agenda, the route map suggested by the toolkit does, at least, posit a post-COVID future, offering best practice examples in which clubs can endure the crisis and emerge out the other side. more robust and flexible, better able to survive in a world sure to have changed.

For all its uniqueness, COVID-19 is also unlikely to be the only challenge faced by clubs in the coming decades. It is the sixth PHEIC declared by WHO since 2009, in a decade that has also seen increased financial volatility catalysed by economic and political upheaval. Meanwhile, climate change looms large and threatens greater unpredictability. While the focus of the moment is firmly on COVID-19, the experiences of tackling this crisis also provide a blueprint for stronger, healthier clubs better prepared to weather the next one.





Leading supply chain, transport and logistics company, Eddie Stobart, is a proud supplier to the Federation Internationale de l'Automobile.

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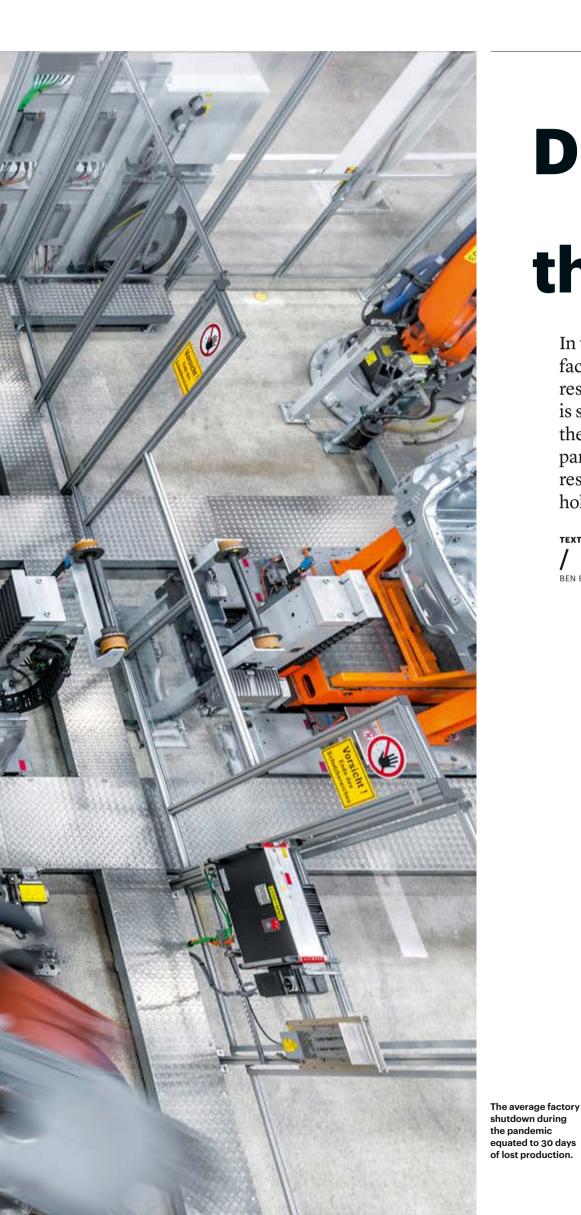
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Industry response to COVID:

P40

P41



04 Driving back from the brink

In the wake of plummeting demand, factory shutdowns, and painful restructuring, the automotive industry is slowly beginning to recover from the economic impact of the COVID-19 pandemic. But how have manufacturers responded and what does the future hold? AUTO investigates

техт BEN BARRY

> When the coronavirus pandemic began to take hold globally early in 2020, the automotive industry reeled, with factory shutdowns, staff furlough schemes and lay-offs, and a catastrophic drop in vehicle sales.

With much of the world in lockdown and governments grappling with an unprecedented health crisis, this was unsurprising, but even as the world begins to adapt to the reality of a post-COVID-19 environment, after-effects continue to ripple through the automotive industry, not only manifesting through depressed sales and hygiene protocols at car dealerships and factories, but also in effecting deep-rooted change within the industry generally.

The early impacts of coronavirus are relatively straightforward to quantify. According to Amon Madhok at Counterpoint Research, global vehicle sales dropped by 38 per cent in March from the same month in 2019, down 600,000 units to two million as countries implemented national or local lockdowns, many car dealerships closed and footfall dropped generally - according to IHS Markit - by 40-70 per cent in dealerships worldwide.

By May, the European passenger car market had fallen by 43 per cent, the US 23 per cent and China 27 per cent compared with the same period in 2019, with most experts predicting 20 per cent fewer global passenger vehicle sales in 2020 compared with the year before, estimated at around 71 million units.▶

2020

COVER Industry response to COVID:

Road safety's young advocate

Factory shutdowns of both OEMs and suppliers also resulted in the production of far fewer cars in June the ACEA (the European Automobile Manufacturers' Association) estimated production losses of 2.446.344 vehicles due to coronavirus. including cars, trucks, vans, buses and coaches. The average factory shutdown lasted 30 working days, with Italy and the UK worst affected with 41 days' lost production.

Government furlough schemes helped mitigate some of the impact, although Counterpoint Research reported one million job losses globally by late April, and in March Volkswagen CEO Herbert Diess revealed plant shutdowns were costing the company \$2.2 billion per week. With automotive suppliers enjoying a smaller financial cushion than multi-national OEMs, S&P Global Market Intelligence reported the odds of default for such companies jumped 20 per cent in April – with the wider repercussions of any insolvencies likely to be felt throughout the tightly interconnected supply chain.

While the predicted devastation of the automotive supplier base hasn't yet materialised, it's possible furlough schemes and government assistance have deferred the impact, and two

main trends remain likely: the acquisition of smaller suppliers by larger suppliers or OEMs, and moves to reduce reliance on China as a supplier base, with Counterpoint Research estimating that 85 per cent of global automotive parts are dependent on China, whether through finished components or raw materials; EVs are only likely to increase that dependency due to China's dominance in battery production. In response, Japan has earmarked \$2.2bn to help domestic companies shift manufacturing from China to Japan, and \$214m to shift from other countries.

RECOVERY SIGNS

Despite widespread disruption to existing supply chains and manufacturing bases, production actually began to recover late in the first quarter of 2020, albeit with new social distancing and hygiene protocols. Factories in China slowly resumed production from mid-February to early March, including in Wuhan, the centre of the outbreak, in part because China was first to feel the effects of the virus and first to start recovering. In the second quarter, Daimler and Hyundai re-opened US plants in Alabama in late April, and

European plants operated by all OEMs re-opened progressively over three weeks also in late April. The recovery of vehicle sales has similarly varied country by country, in line with when the virus first took hold, the severity of impact and government measures implemented.

Car sales in Italy plunged by 98 per cent in April, France recorded an 88 per cent drop, but pent-up demand in China was so strong that the Honda-Guangzhou joint venture plant worked overtime to meet demand. After an 80 per cent decline in February with only 310,000 units delivered, China actually recorded an increase year-on-year in April, up 4.4 per cent to 2.1m units, and stronger 12 per cent growth in May, again to 2.1m units. Supercar manufacturer McLaren might have axed 1200 jobs and restructured its lending, but it reported the first signs of recovery in May, with China leading the resurgence.

Counterpoint Research reported key markets globally posted signs of improvement in August on a month-on-month basis, though cautioned pent-up demand from lockdown might be concealing lower overall market demand. With an increase in coronavirus cases and furlough schemes winding down, it said, consumer

With safety

protocols in place.

started to recove

car production

in late Spring.

per cent decline in July

P43



Chinese make Lvnk&Co had already planned online sales in Europe pre-COVID.

> 'The pandemic hit when world car markets were already having growth issues'



P42



confidence may yet deteriorate - a picture that is perhaps emerging in Europe, with the positive trends seen since May reversing in August, and an 18 per cent year-on-year decline following the four

New consumer trends were also evident within the statistics. Buyers embraced online buying where possible, and IHS Markit reported that 30 per cent of dealerships regretted having no online support for sales, servicing and finance, and 65 per cent expect an acceleration of development in online vehicles sales and booking platforms. Perhaps surprisingly given a surplus of oil had severely depressed fuel prices, sales of EVs grew exponentially - up two thirds year-on-year in Europe in June, the same period in which petrol and diesel sales dropped a third.

Felipe Munoz of Jato Dynamics attributes this phenomenon to several near-simultaneous developments: "The pandemic hit when world car markets were already having growth issues, and many OEMs were getting ready for the coming CO₂ emissions targets in Europe. China also started to take off in the electrification race... and many OEMs launched more competitive EVs, so consumers had more choice," he explains.



Post-COVID, more car sales are expected to shift online Below: EV sales ave continued to grow during the pandemic, with . Tesla a beneficiary.



When the pandemic struck, "governments poosted their industries by increasing incentives and support, and much of that is being used to promote clean cars - because by incentivising EVs to boost economies they are also reducing dependence on fuels and improving air quality."

Tesla proved the biggest beneficiary of the shift o online sales and EVs, having already established a strong online buying model and retailing a purely EV line-up. Tesla was the only large OEM to increase sales during Q1, and in April and May its Model 3 became the UK's best-selling model.

MOVING ONLINE

While online buying was already becoming more prevalent - Lynk&Co, for instance, planned to offer vehicle sales online in Europe, supported by 200 'pop-up' stores - COVID has accelerated OEM strategies to fully embrace the digital arena, with Mercedes-Benz planning to convert 25 per cent of its vehicle sales to online by 2025. About 25 per cent of Ford's sales are online now with 72 per cent of its North American dealers offering online options, COO Jim Farley said in June.

Ford customers still need to visit a dealership to finalise the purchase, but a spokesperson said moving to a contact-free experience is a change n process, but our dealer partners are no strangers to change.

Counterpoint Research, however, expects the dealership model to account for the majority of vehicle sales for the next decade due to custome preferences for test drives, and because many US states don't allow direct selling to customers.

The pandemic could also strengthen demand or private car ownership, which was previously challenged by car-sharing/ride-hailing services.

Uber and Lyft, for instance, have recorded incredible growth over the last decade, providing a viable alternative to personal car use, most notably in crowded urban spaces. Yet as employers implemented working from home and travellers reacted to concerns over transmission of the virus, Uber and Lyft recorded an unprecedented fall in demand of 80 per cent in the US in April.

Similarly, demand for public transport in major cities fell 70-90 per cent, a trend that could greatly damage commercial vehicle manufacturing, with perhaps wider-reaching consequences for interlinked supply chains and employment than the downturn in ride-hailing services.

It's clearly possible that much of the trend away from car-sharing/ride-hailing could be reversed with the prospect of a vaccine and a return to work, and indeed Jato Dynamics' Felipe Munoz does ultimately foresee reduced private car use and increased car-sharing.

The automotive industry has already witnessed product development delays and the deferment of new model launches due to financial constraints, R&D bottlenecks and ongoing supply chain issues - GM announced the deferment of six refreshed models to 2022. and investment in new technologies such as autonomous driving could also be deferred. Investment in EVs is unlikely to reduce, however,

In Europe, OEMs face huge fines if the average CO2 emissions of the vehicles they sell exceeds 95g/km CO2 by the end of 2020. The target has become harder to hit due to the collapse of more CO2-efficient diesel sales in recent years, the introduction of stricter WLTP standards and the continued growth of SUV sales.

Jato Dynamics estimates fines could reach €34bn, but Munoz foresees no need to reassess. upcoming emissions standards, and expects EVs to account for more than 25 per cent of the European and Chinese new-car fleet in the midto long-term. "The shift from ICE to EVs will continue and is expected to accelerate mid-term once battery costs decrease and more choices. arrive, therefore I don't see why current CO2 policies should be relaxed," he says.

However the impact of coronavirus shakes out, in-car technology could capitalise as motorists embrace social distancing and OEMs fully exploit in-car touchscreens, over-the-air updates and 5G networks - perhaps for paying for fuel, tolls or drive-through services, although smartphone manufacturers and app developers are arguably better placed to take advantage with devices that are transferable between vehicles

COVID-19 has drastically altered the way we live in the short-term, but it is also beginning to reshape the automotive industry with potentially far-reaching consequences, from the way cars are built to how they're powered, from footfall at dealerships to where and when we drive. The full effect is yet to shake out, but there's no question coronavirus will leave a lasting legacy on the automotive industry, some of which will even prove positive for both motorists and the environment alike.

COVER STORY

Changing lanes - the trends ikely to alter mobility

The ELA Foundation and LINICEE 1000 ra ine school trips; Road safety's young advocate

VIEW

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P44

(04)Directions of travel

FORCES

REPORT

COVID-19 has led to profound shifts in travel patterns, but are the trends that have emerged temporary adjustments or has the way we move changed for good? Three mobility experts look beyond the pandemic to map the possible future of mobility

STEPHEN PERKINS

HEAD OF THE RESEARCH AND POLICY ANALYSIS OF THE INTERNATIONAL TRANSPORT FORUM AT THE OECD

(04)

/ 2020

COVID-19 has had many impacts but one of the major revelations has been the weakness that existed in our public services before this crisis. It's highlighted where we've underinvested and particularly under austerity policies.

We need more investment in public transport capacity and frequency of service and especially reliability in places where rail, metro and bus systems were already struggling to cope with peak crowding and peak demand – and we need it now, especially when people are more concerned about crowding

As we take measures to counter the impact of COVID, the overall guiding principle we need to adhere to is to maintain the pre-COVID priorities we had, particularly in terms of promoting sustainable mobility and ensuring that we build sustainable systems that in the long term are not substantially affected by short-term crises.

Reduced service and reluctance towards using public transport, has shifted trips to cars underlining the resilience of the automobile. To have a car in reserve offers comfort and security in the face of disruption

We have seen that reaction in recently released data from the second-hand car market in the UK. The price of second-hand vehicles has gone up sharply and that's not just because people have less disposable income and are worried about the future and don't want to borrow to buy a new car. They are also looking to keep an older vehicle as a second car to provide resilience in the face of disruption. However, buying an old diesel car is obviously far from ideal and going forward we need to stay on the

course of shifting towards increasingly clean vehicles on the roads

We are going to find that the roads are increasingly crowded. The competition for space on the roads is likely to be intense. The big increase in delivery vehicles on the road during Covid is one trend that seems set to persist.

To mitigate against public transport concerns and to cope with pressure on car use, many governments have been encouraging, and providing for, cycling, walking and micro-mobility in order to pick up the demand that just can't be taken on the roads. And, of course, these modes fit extremely well with the longer-term sustainability policies being implemented by

Stephen Perkins says work must continue on longterm transport agendas despite the pande



cities. Reallocating space to micromobility and to quality sidewalks is critical.

Post-COVID, I foresee a lot of the temporary allocations of road space becoming permanent. As long as you can provide a safe environment, more people will turn to these forms of mobility for short trips and those modes are an important part of the balance of mobility going forward.

And that's the key for me - continuity of purpose. Ultimately, the bottom-line recommendation is that we need to build back better. We need to keep our eye on long-term agendas as these are just as important post-COVID as they were prior to the pandemic. Reducing CO2 emissions and reducing air pollution remains critical. Short-term response measures are sometimes in direct contradiction with our policy goals and we have to be careful not to lose sight of the ultimate goals as we react to what is a serious but hopefully finite threat.

ANDREW **MCKELLAR**

FIA SECRETARY-GENERAL FOR AUTOMOBILE MOBILITY AND TOURISM

Looking at the observed trends of the last 10 months or so, there has undoubtedly been a shift away from shared mobility and public transport due to heightened concerns about the risk of infection. And while that has sent people back to their cars, it has been at much lower rates, people have generally been using their own cars less. Those short-term trends do come with spill-over impacts such as congestion being reduced, with possible positive impacts on air quality in cities. But the question remains as to whether the developments we have seen during the pandemic translate to longer-term changes in behaviour.

My own feeling is that it's unlikely everything will reset to the way we travelled before COVID-19, but the changes that we will see will be different from region to region around the world. depending on population density, prevailing modalities and levels of economic development.

In the cities of developed nations we are already seeing local authorities taking the opportunity to further agendas around mobility choice. There's been a sudden rollout of space for cycling and micro mobility. That's a development I do not think will reverse once the pandemic recedes.

Given the apparent reluctance of a lot of people to return to public transport and a manifold increase in personal transport, that increase in capacity will be useful. By extension, though, it could also push people back towards use of their car for commuting purposes and it's possible that in many places we are going to see worsening congestion problems and I suspect that will stiffen the resolve around tighter CO2 emissions regulation.

as one might imagine

to build resilience (see p34).

outcomes for people in the future.

JULIEN

P45



One of the easily identifiable impacts of the pandemic has of course been disruption of normal business, and for organisations concerned with travel and mobility the effects. have been severe - though not as devastating

Aware of the depth of the crisis, the FIA has rolled out a major support programme over the past five or six months called Mobility Worldwide. The central goal of the initiative was to engage with our member clubs to assess the impact the pandemic has had on their business, to define strategies to mitigate adverse effects and to build a toolkit of mechanisms they can employ in order

And what we've seen in most cases is that clubs were able to quickly adapt to the changed conditions. They swiftly transitioned to working remotely. They were quickly on top of managing cash flow and cutting costs where needed. And following that phase they were into a second phase, where they secured their businesses by connecting with their members, adjusting their services, and in some cases bringing new services to market in very short timescales. What does that mean for clubs in a postpandemic environment? I can see a huge increase in digitalisation, a growth in automation and an optimisation of services to reduce costs, particularly fixed costs, and increase efficiency. I think it will also see clubs adjust their business planning to redefine the offer they make to members and to diversify their businesses. Clubs will understand that to become more resilient they need to diversify. The changes are already happening in many organisations and we actually have very few clubs that have needed direct financial support. It is strange but, to some degree, out of adversity comes opportunity. Ultimately the pandemic will leave a lasting impact on mobility but in the end we will want to get back the sense of freedom that travel brings. However, the way in which we do it may be quite different. And there is a very real role that FIA member clubs can play in that process. We are service providers. We are membershipbased organisations and we're in touch with what consumers want. There will be a very real and constructive role that mobility organisations can play in delivering better



The pandemic undoubtedly caused a great deal of hardship in the mobility sector. As an example, in March the number of trips by shared mobility in Paris dropped by something like 90 per cent.



What we saw during the initial lockdown was that some operators opted to stay in the market. for differing reasons. Many initiated programmes offering free rides to frontline workers but some staved because it was the only way to survive. In Paris, there was a tender happening at the time and the results were announced after the first wave. For those who continued to work it demonstrated commitment and enhanced their reputation. There were also purely technical reasons, as with many electric vehicles if the batteries are not used they degrade.

Once the lockdown eased we saw a rapid recovery, though with some differences. Bikes and mopeds bounced back quickly as people were reluctant to use public transport and bikes offered convenience and effective social distancing. We also saw that across Europe. municipalities and governments created a lot of new bike lanes, new parking facilities and additional charging stations for e-mobility. As a result, we have seen traffic in many countries rising at a higher level than in pre-COVID times.

However, a lot of e-scooter traffic is reliant on tourism and obviously that has decreased massively. That sector has therefore had to reinvent itself by adapting their business models, altering pricing, and by changing the location of scooters to be nearer train stations and Metro stops. However, I would say that the outcome of the first lockdown has been interesting and actually quite good for the industry.

What's next? I think for shared mobility businesses such as scooters the first thing to note is that the period we are in now will not be as hard as the first lockdown - simply for the reason that we are in low season for their businesses. They will miss revenues, but not as severely as in March and April.

Secondly, when people do return to work the aversion to public transport will continue. That's obviously not good news, but it is a likely outcome. So again, the shared mobility sector, at least on two wheels, will continue to grow in the spring

FIA member clubs car adapt to support post-COVID changes in travel, says Andrew McKellar.

Julien Chamussy would like travel to shift to public transport combined with shared mobility.

More widely, I feel that this will prompt us to look at urban mobility more holistically. We increasingly need a combination of modes. We need a robust public transport network. because there is no way micro-mobility will be able to cater for demand.

If you take all the trips made on public transport in Paris in one day in September, it was in the region of eight million. There is no way shared mobility can take that strain, but we can create synergies between public transport and shared mobility, and this has to be the future. We have to offer flexible, easy access to the various modes and ensure seamless transition between various modes.

The difficulty comes in the shape of that anxiety over sanitation and for that I just don't have a clear answer.

For micro-mobility it's not an issue as I think people are happy to take responsibility for their own safeguarding, but with car sharing it's much more complicated because there are so many more touch points in a car.

In terms of public transport there could be a possibility to partner with mass transit to use real-time data to predict and moderate crowd numbers on public transport.

Indeed, I don't think we're far away from that. Here at Fluctuo, we recently applied to a challenge organised by the public transport authority of the Greater Paris region to try to upgrade the travel information system with real-time data in order to offer alternatives to commuters when there is disruption. To progress from that real-time use monitoring of passenger numbers to ensure effective distancing could be possible.

I see some interesting start-ups working on on-demand mobility, systems that adapt bus routes by taking into account real-time demand by people. That's very interesting and could provide part of the solution for what is likely to be a very different landscape in the future. ◀



AUTO #32 Q3

Di Grassi's future focus:

Formula E has been the

but he wants to leave a

making of Lucas Di Grassi,

legacy beyond motor sport

04 Racing ^t / TONY THOMAS the future

In the world of motor sport it's rare to find a driver whose focus extends beyond the intensity of competition. FIA Formula E star Lucas Di Grassi is different and his immersion in the electric championship has given the series' 2016-'17 champion a new mission – to push racing to the limit of technological possibility in pursuit of sustainable mobility

"I was crying. My mom was crying. All of Brazil was crying and I didn't know why. But it was then that I decided to try to become a professional racing driver.'

A nine-year-old Lucas Di Grassi had just seen his hero, Brazil's demi-god Avrton Senna, die in the accident that made the world choke with grief and which would permanently re-set attitudes towards safety in motor sport.

The dark-haired kid who loved football and cars, like a million other scrappy Paulistas, didn't fully understand his feelings that May 1, 1994, but the effect of Senna's death on everything he knew sparked in young Lucas a conviction that somehow in life he had to do something useful, something with purpose.

"This guy was a racing driver," says Di Grassi, "but the impact he had on Brazilian society was immense. And it was then I realised that, look, this is something I want to do. I want to have the same impact as this guy. I want to follow in his footsteps.'

He was karting busily a year later and soon following the tyre tracks scorched by a legion of talented, charismatic forbears, from Emerson Fittipaldi to Felipe Massa.

European racing in Formula 3 and then GP2 were the stepping stones to a season of Formula 1 in 2010 and top-level endurance racing. Outright success proved elusive, however, until his move in 2014 to the nascent Formula E championship.

His perspicacious switch to all-electric racing, which only six short years ago seemed daringly avant-garde, proved to be the making of Di Grassi. He won the first-ever Formula E race in Beijing in 2014, and two seasons later he was champion

Now established, at the age of 36, as one of the series' heavy hitters, Di Grassi is increasingly recognised as a driver whose engagement runs deeper than mere sporting participation.

He helped develop the prototype Formula E race cars and, as a member of the championship's advisory committee since its inception, he exhibits an innate affinity with its sustainable mobility mantras. Indeed, where most of his peers are happiest discussing lift-off oversteer or track surface imperfections, Di Grassi appears almost more at ease promoting the necessity of ethical investment, the links between air pollution and social inequality, or how motor sport beyond Formula E is ignorant of the existential crisis it faces.

"I think it's fair to say I share overall the same vision, the same understanding of how to create Formula E," he says, "so it really makes sense to me the way things are being done there. The level of the championship is really hard. It's really nice on the sporting side. There's

'Formula E needs to be the fastest-accelerating series on the planet'

equality between the cars, the level of the drivers and the level of the teams, so the fun we have at the races and the difficulty of the race tracks make it a very complete championship. After I'd done my years in F1, then endurance racing and Le Mans, Formula E seems to be the natural progression."

BIGGER PICTURE

Di Grassi speaks first and foremost as a racing driver. This is his day job after all - a fabulously elevated one, of course, but a day job nonetheless. More intriguing, though, are his bigger-picture thoughts about motor sport: where it's at, where it's going, and, perhaps, the role he might have to play in shaping its future.

Take his vision for the development of Formula E: "The championship needs to have a fresh new vision and follow that regardless of what Formula 1 is doing," he says. "They need to be very aggressive with their strategy.

"A lot will depend on the technical decisions that Formula E will take," he adds. "The championship still has a lot of space to grow, and the correct path is one that keeps the balance between opening up the technical regulations and keeping costs under control.

"You need to make a decision that creates value over cost on the R&D side and the same on the entertainment side: you increase the entertainment, the level of the drivers, the spectators, without increasing the cost, so you gain value. So all decisions have to be these two ways: increasing technical expertise without increasing cost and increasing entertainment without increasing cost."

He also warns of the dangers of the sport being unconsciously moved away from its disruptive founding philosophies by commercial influences. Better, Di Grassi suggests (both publicly and in his advisory board capacity), is a futuristic technical approach designed to appeal to auto manufacturers' road-relevance needs, while grabbing fans with a visceral hook.

"I've done the calculations and it's possible," he insists. "For me, Formula E needs to be the fastest-accelerating formula motor sport series on the planet. So that will create excitement without creating extra cost. We can add four-wheel drive, or replicate the drivetrain we have at the rear on the front axle and that will double the power. But it will only increase costs by seven per cent, because you are duplicating a part that already exists."

The upshot would be a "very exciting" machine that could out-sprint an F1 car from o-100mph for only a marginal cost increase. Design-wise, he says, the next generation of Formula E cars should be like something from the movie Tron, with aerodynamics and suspension both active and LED body panels capable of showing different sponsors in rotation.

It remains to be seen to what extent Formula E will pursue any such bold vision, but in the meantime Di Grassi is exploring other, more radical, motor sport avenues.

P46







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ORCES Galler News

COVER

Di Grassi's future focus:

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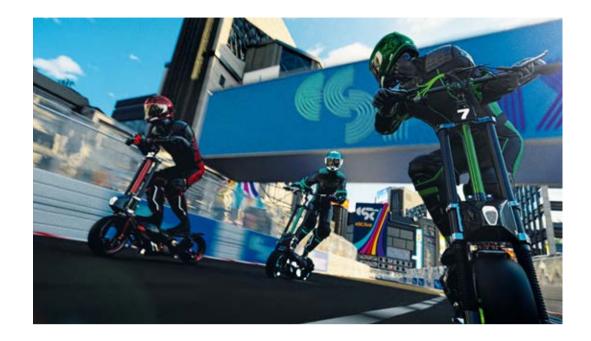
NSIDE THE

P48

P49



Di Grassi has raced for Audi Sport ABT since Formula E's inception Right: he is also a founding partner in the Electric Scoote Championship



'I'm using my platform, motor sport, to try to improve the world in my own way'

He is CEO of Roborace, the avowedly futuristic series dedicated to research and experimentation in autonomous vehicles. And most recently he has become a founding partner in ESC, an Electric Scooter Championship that aims to explode development in the burgeoning micro-mobility sector via an injection of competitive intensity.

"It follows more or less the same idea as Formula E," he says. "It's a question of how you take a segment of mobility that's going to have a huge future - micro-mobility, which will become a \$300 billion dollar industry – and develop that faster through competition. Nobody has explored racing with electric scooters yet, but we have created something very fast and very interesting that can excite people and at the same time generate value for R&D."

Prototype scooters are already being developed by Williams Advanced Engineering (also battery suppliers to Formula E for the Gen1 and Gen3 cars) ahead of a 2021 racing season launch.

Logistical hurdles imposed by COVID-19 have curtailed some of the more ambitious season one plans, but Di Grassi and his co-founders, who include fellow blue-sky thinker Alex Wurz, are confident of being able to flaunt something new and attractive in the very near future. Naturally enough, the Di Grassi credo dictates that ESC must exhibit credentials beyond the solely sporting.

"We think there are two key problems with scooters at the moment," he says. "Firstly, technical: does a scooter need to have two, three or four wheels? And what size of wheel? What about the battery range? And should it have electronic systems to help it be more stable? We don't know.

"Then safety: there is no global standard for scooters on safety and infrastructure. We want to tackle these two problems by leaving many of the technical aspects open, so people can develop their own product to be more competitive and stable and better.

"At the same time we want to create a standard of safety technology that could be implemented in shared micro-mobility sectors in the future. So the racing creates excitement, as we push to create a better product and evolve the segment. Motor sport has always worked like this."

The breadth of vision Di Grassi displays, while still in the white heat of his racing career, has led some observers to suggest a post-competition role at the heart of motor sport politics. For now, though, the focus remains on racing and pursuing interests around mobility and sustainability that first gripped him early in his racing career.

He recalls noticing, back in the mid-'oos, how he would use much less fuel than his parents when driving the same car at similar speeds. A penny dropped: "I realised that my experience as a professional driver could be used broadly beyond motor sport, to try to teach people how to save fuel and improve the environment at the same time. So I launched my first NGO, SmarterDriving.org, to try to do that."

Di Grassi's is a voice of ambition grounded in pragmatic necessity, while laced with a twist of idealism. He carries the conviction of one who can glimpse the future more clearly than most - and understands that the future may come to him.

"If you have the capacity and are able to," he concludes, "you should change the world for the better in your own way, with your own knowledge, or in your own field. Regardless of whether you're an artist, a sportsman or a businessman, I really think that after you have covered your basic needs, the next thing you try to do is create a legacy. And I'm using my platform, which is motor sport, to try to improve the world in my own way. I think, in fact, it's a moral and ethical duty that everyone should do this, as far as they are able." •



KUKA

Ariello ups



(04)



Bigger is better for hydroger

P50

P51

Powering up for the long haul

Largely abandoned as a future power source for passenger vehicles, hydrogen fuel cells are increasingly being touted as the future of haulage and public transport. And in recent months some of the automotive industry's major players have committed to new initiatives that could make long haul transport the cleanest form of mobility on the road

> TEXT JUSTIN HYNES

Last month Hyundai claimed fifth place in a ranking of the world's most valuable automotive brands, with Interbrand's Best Global Brands 2020 showing the Korean automotive company's global value up one per cent year-on-year to \$14.3 billion

And key to the consultancy's rating was Hyundai's rapidly expanding investment in hydrogen fuel cell technology. The company recently delivered the first seven units of the world's first mass-produced fuel cell electric heavy-duty truck, the Xcient, to customers in Switzerland, with a total of 50 hitting the roads there this year. Production capacity for fuel cell trucks will reach 2,000 units per year by 2021 to support its expansion into Europe, the US and China as demand for clean mobility grows.

"The delivery of Xcient Fuel Cell starts a new

chapter not only for Hyundai's hydrogen push, but also the global community's use of hydrogen as a clean energy source," said In Cheol Lee, Executive Vice-President and Head of Commercial Vehicle Division at Hyundai Motor. "Today's delivery is just a beginning as it opens endless possibilities for clean mobility. With successful delivery of the first Xcient Fuel Cell trucks, we proudly announce our plan to expand beyond Europe to North America and China where we are already making great progress."

The increase in capacity will be backed by a US\$1.3bn investment in addition to a previously announced US\$6.4bn stake in establishing a hydrogen ecosystem to support the creation of a hydrogen society.

The Swiss sale, however, was later dwarfed by the potential of the Korean firm's involvement in



Hyundai's hydrogen powered Nexo and, top its Xcient Fuel Cell truck which was launched in Switzerland.

fuel cell sales to China, where it signed two letters of intent with Chinese companies to supply a total of 4,000 fuel cell trucks by 2025. Hyundai plans to sell more than 27,000 hydrogen trucks in China by 2030. When presenting its international business strategy for hydrogen trucks two weeks ago, Cheol Lee said: "Currently we are focusing on China's four major hydrogen spots, including Jin-jin-ji, the Yangtse River Delta, the province Guangdong and the Provence Sichuan, and discussing corporate initiatives such as joint ventures with local partners. Our plan is to achieve an aggregate sales volume of 27,000 units by 2030 based on the three models."



The Chinese government, too, is keen to advance the uptake of fuel cell technology. Just over a year ago the country announced

its goal of one million fuel cell vehicles on China's roads by 2030.

Hyundai has long been a champion of hydrogen power and first began exploring the technology with its Project Mercury vehicle in the late 1990s. But while it remained one of the few to persist with research into fuel cell-driven cars, with its ix35 ECEV model and 2017 EE Fuel Cell Concept, its ambition for trucks powered by fuel cells has been matched by others who see hydrogen as the ideal power for vehicles ranging rom trucks to trains to boats.

Mercedes-Benz has developed the GenH2 Fruck, a fuel cell truck with a range of up to 1.000 kilometres. The firm plans to begin customer trials of the GenH2 Truck in 2023 and series production is to start in the second half of the decade. According to Mercedes, its use of liquid instead of gaseous hydrogen with its higher energy density means the vehicle's performance is planned to equal that of a comparable conventional diesel truck.

The development has met with approval from government too with Andreas Scheuer, Germany's Federal Minister of Transport and Digital Infrastructure, saying: "We need zerocarbon goods vehicles on our roads. These include hydrogen fuel cell trucks. There is huge potential inherent in hydrogen for the protection of our environment and a strong economy. That is why we have been funding hydrogen as a transport fuel for over 10 years – one current example is the concept truck presented today. We will continue to provide strong support to the development of climate-friendly drivetrains and innovations in and for Germany. This will include, but not be limited to, significantly expanding the funding of vehicles."

NEW TRACKS

The GenH2 Truck is not the only fuel cell venture Mercedes is involved in. At the beginning of November, Daimler Truck AG and the Volvo Group signed an agreement for the joint development and production of fuel cell systems for use in heavy-duty trucks as the primary focus but also n other applications

"For us at Daimler Truck AG and our intended partner the Volvo Group, the hydrogen-based fuel cell is a key technology for enabling CO2-neutral transportation in the future. We are both fully committed to the Paris Climate Agreement for decarbonising road transport and other areas, and to building a prosperous jointly-held company that will deliver large volumes of fuel cell systems," said Martin Daum, Chairman of the Board of Management at Daimler Truck AG.

Toyota, too, has embraced the technology as a potential future power source for a wide variety of large vehicles - including trains.

As well as tasking its North American arm with development of fuel cell trucks in partnership with Hino, using the latter's XL Series as a platform, the Japanese firm is working closer to home on hydrogen-powered mass-transit.



Mercedes Benz will start customer trials of its fuel cell GenH2 Truck in 2023.

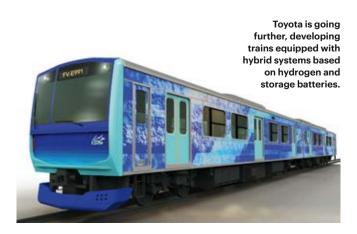
In partnership with Japanese railway company JR East, Hitachi Ltd, Toyota will develop test railway vehicles equipped with hybrid systems that use hydrogen-powered fuel cells and storage batteries as their electric power source with the aim of improving the environmental superiority of railways and help realise a carbon-free, sustainable society.

Buses too are being targeted as ideal carriers of fuel cell power. In the UK, hydrogen fuel cell double-decker buses - considered to be the 'world's first' - are to be deployed on the streets of the country's second largest city, Birmingham, as part of plans to tackle air pollution.

Developed by the Northern Ireland-based manufacturer Wrightbus, 20 zero-emission hydrogen fuel cell double-deckers will be introduced from April 2021. The buses are expected to consume four times less fuel compared to standard diesel buses, covering 300 miles on a single tank and with the ability to refuel in seven to 10 minutes.

While Toyota and Hyundai continue to explore fuel cell technology with their Nexo and Mirai models respectively, it increasingly looks like the future of hydrogen is in large commercial vehicles and mass-transit applications, which means that in the near future the next delivery or the next cross-town journey might be the cleanest ever made. ◀

'There is huge potential in hydrogen for the protection of our environment'





AUTO #32 Q3

/ 2020 New routes for mobility; 'Toolkit' aid for mobility club Industry response to COVID Changing lanes – the trends likely to alter mobility; Di Grassi's future focus; Bigger is better for hydroge

FOCUS The FIA and F1 move towards greener fuels; Renault's game-changing CEO; The FIA Foundation and UNICEF redefine school trips; The UN's youth action; Road safety's young advocates INSIDE THE FIA FAMILY AA Vietnam & Vietnamese Motorsport Association

FINAL LAP Tracking motor sport's safety advances P52

P53

Fuelling up os for clean racing

Formula 1's pursuit of efficiency has been enormously successful since the introduction of hybrid power in 2014. Now the FIA and F1 are targeting even greater gains through the development of advanced sustainable fuels





TEXT

LUKE SMITH

Formula 1 has been pushing for a greener, cleaner future ever since its adoption of hybrid power units in 2014. As environmental issues have become increasingly relevant throughout motor sport and society, the progress F1 is looking to make has been accelerating.

The sport unveiled an ambitious plan last November to become carbon neutral by 2030, with much of its focus laying with the existing power units. Its hope was that by advocating the use of energy recovery systems and advanced sustainable fuels, it could pave the way for the global automotive industry to shift away from the traditional internal combustion engine.

The push for sustainable fuels is something the FIA and F1 have been working closely together on in shaping what the future of the pinnacle of motor sport will look like.

There are three generations of biofuels. The first, largely developed from crops grown specifically to create fuel, is not sustainable and has ethical issues, making the second and third generations the preferred routes. The second looks at turning waste and biomass into fuel, while the third generation – known as e-fuels – is more chemically driven.

"E-fuels are fuels created by combining CO2, which is a pollutant, with hydrogen, which will lead to hydrocarbon," explains FIA technical director Gilles Simon. "Hydrogen is mainly the by-product of the petrol industry, and there are a lot of efforts and big investments to develop from a sustainable source, which is basically hydrogen coming from hydrolysis – electrolysis of water – with a green energy source or sustainable electricity."

Simon and his team believe that both the second and third generation of biofuels are sustainable. "Both approaches are currently in development," he says. "We will not make them compete, but just help this technology develop through motor racing."

F1 has always been a laboratory for the automotive industry, with many of its advancements working their way to road cars and helping to change global perceptions of the technology being used.

F1 chief technical officer Pat Symonds said last year that the sport's shift away from internal combustion engines in 2014 helped "show what a hybrid could be, and it moved people's perceptions of what a hybrid is capable of". This kind of wider impact is at the heart of F1's vision for a cleaner future, with the focus on sustainable fuels being a key part of it.

"F1's DNA is all around technological innovation at pace driving progress," says Yath Gangakumaran, director of strategy and business development at F1. "Ultimately this is something that F1 has been doing for 70 years. What we're trying to say is let's continue to do that, but focus our attention more particularly on environmental sustainability.

"We wanted to develop these fuels so that not only can we reduce the carbon footprint of our cars when they drive around tracks, but also



FIA technical director Gilles Simon is leading the drive towards sustainable fuels in F1.



People's perceptions of hybrid power changed when it came to F1, says tech chief Pat Symonds.

see if we can make them relevant to the wider automotive industry.

"We have over a billion vehicles on the planet, and something like 99 per cent of them have an internal combustion engine. These vehicles are going to be around for the next decade or two, minimum, so having an impact outside F1 means developing these fuels so that over time they can hopefully become relevant to wider road cars, and we can start to reduce the carbon emissions of these vehicles that have internal combustion engines.

"That's the first leadership point that we want to take when it comes to CO2 emissions."

COLLABORATIVE EFFORT

On-track competition has always been an effective method of advancing technologies, and is a large part of what has made the sport so attractive to manufacturers throughout its history.

The same is true for fuel suppliers. Petronas, Shell, ExxonMobil and Castrol are all currently involved in F1, and are working closely with stakeholders in the development of future fuel solutions. Simon hopes the push towards more efficient fuels can help foster greater competition between suppliers and manufacturers.

"It's a good showcase of evolution of the technology," Simon says. "Different companies will have a different technical approach to the topic, as there are different routes possible. So that will be an interesting technical competition.

"We are in the very first stages. We are starting to discuss this and do some trials. We will supply some experimental fuels to engine manufacturers for them to test, so it's really a common work plan we have before we are able to say yes, it's feasible, let's do it, and we can advertise it.

"For now, it's really technical work ongoing with good collaboration of the engine manufacturers to test these fuels and give their feedback."

'F1's DNA is all around technological innovation at pace driving progress'

All agree that a move to biofuels must not come at the cost of car performance.





he FIA and F1 move

towards greener fuels, Road safety's young advocate

produce 10,000 barrels of algae

Using advanced cell engineering

biofuels a day by 2025.

technologies at Synthetic Genomics, the ExxonMobil-

Synthetic Genomics research

team most recently modified an algae strain to enhance its

oil content from 20 per cent

to more than 40 per cent.

"This key milestone in our

advanced biofuels programme

confirms our belief that algae

can be incredibly productive

source with a corresponding positive contribution to our

as a renewable energy

environment," says Vijav

Swarup, vice-president for

research and development

at ExxonMobil Research and

Engineering Company. "Our

work with Synthetic Genomics is

an important part of our broader

research into lower-emission

of climate change."

technologies to reduce the risk

P54



Biofuels are already present in F1 to a small degree. The technical regulations for 2020 and 2021 state that "a minimum of 5.75 per cent of the fuel must comprise bio-components", with this figure increasing to 10 per cent under the 2022 rules that were initially planned for next year.

The goal is for this figure to reach 100 per cent, tentatively as early as 2023. "It's clear that this is quite a huge development and ahead of the production capabilities, so we believe it will be implemented in F1 first and then the other championships," says Simon.

"Bear in mind the quality of fuel required in Formula 1 is guite high, and this is not an obvious task to implement it in the coming years. We have not yet completed a full plan, but what I can say is that our target we are working towards is 100 per cent sustainable fuels in '23.

"We are progressing, but it's a little too soon to say we will be using 100 per cent sustainable fuel in 2023. But this is what we will try and achieve." The next generation of F1 power unit is set to arrive in 2026, three years after the FIA's initial target to use fully sustainable fuels.

Throughout the process, all parties have been clear that any advancements in efficiency cannot come at the cost of performance. "This has been clear from the beginning," stresses Simon. "We will maintain the existing performance. It's already guite a difficult task to manufacture a fuel with the quality needed in F1, and reaching this point will be a good achievement.

"That's a worry of our colleagues everywhere - can we maintain the current performance of the engines? It's part of the positive image, that yes, we can run fully-sustainable fuels, and the engine is the same level of performance that we have today."

F1 may be leading the way on the advancement of sustainable fuels, but the vision is for it to trickle down into all of the FIA's championships - something Simon feels is critical to safeguard the future of motor sport at all levels.

"It has become clear what we will try and implement in the years to come, [creating] a kind of road map for all our championships and categories to switch to sustainable fuels," he says.

"We have to be realistic, because we need to be progressive as the industry is also building up. There will be more and more of these fuels available, even for grassroots motor racing, which is the way we need to go to maintain sustainability in our sport. It's quite an important parameter to be accepted as part of society." 4

The road to sustainable fuels

At motor manufacturers and energy concerns, work is already underway on the next generation of liquid fuels

Though automotive manufacturers and energy companies have focused attention on electric vehicle technology, much work on sustainable fuels is also taking place in parallel.

Japanese car maker Mazda is lending technical support to the combination of research into genome editing by Hiroshima University and plant physiology by the Tokyo Institute of Technology, which it hopes will lead to a breakthrough in sustainable fuels sourced from microalgae growth.

The car maker says that as it expects internal combustion engines combined with some form of electrification to still account for some 95 per cent of the vehicles it produces in 2030, and that liquid fuel will remain dominant in the automotive industry until at least 2040, it considers a renewable liquid fuel essential to drastic CO2 reduction. Because when burnt algae biofuel only releases CO2 recently removed from the atmosphere via photosynthesis

as the algae grew, Mazda considers its development to be critical to achieving the carbon neutrality of cars powered by the internal combustion engine. Microalgae biofuel has numerous positive attributes as a renewable liquid fuel. Algae fuels can be farmed on land unsuitable for agriculture, can be grown with minimal impact on freshwater resources, can be produced using saline and waste water, have a high flash point, and are biodegradable and relatively harmless to the environment if spilled.

'Algae can be incredibly productive as a renewable energy source'

Meanwhile, energy companies are also concentrating research programmes on sustainable fuels, in large part for the aviation industry. ExxonMobil and biofuel company Synthetic Genomics (SGI) are carrying out a research programme to develop advanced biofuels from algae. The joint effort is working towards the technical ability to

French firm Total is to convert its Grandpuits refinery in France into a zero-crude platform and by 2024, following an investment totalling more than €500 million, the platform will focus on four new activities. including production of renewable diesel primarily for the aviation industry.



Mazda is focusing or renewable liquid fuels as a way of cutting alobal CO2 emissio

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AUTO #32 Q3

/ 2020

Renault's game-changing CEO: he UN's vouth act

(05)Changing the game

Dogged by management upheavals, crumbling partner relations and falling sales, the Renault brand has endured a torrid few years. New Group CEO Luca de Meo has been charged with turning the company around – and he believes the secret to success is to alter its 'game module' and prioritise value over volume

TEXT JUSTIN HYNES

Once the poster child for automotive globalisation and voracious expansion, in recent years Renault has been besieged by a disparate array of attackers, ranging from the singular to the global. The singular came in the shape of the spectacular and very public fall from grace of flamboyant boss Carlos Ghosn, a man once regarded as an industry visionary and the leader who had single-handedly and autocratically set the course of the French car maker and its allies Nissan and Mitsubishi for two decades. The alobal came in the shape of the current pandemic, a once-in-a-century crisis that impacted almost every business on the planet.

Renault is reinventing the Mégane in EV mode Right: CEO Luca de Meo returns to the company fresh from reviving SEAT's fortunes



In between the two came a fracturing of relations with its Asian partners, rising costs associated with meeting emissions regulations, and falling sales - especially at Nissan - that threatened the alliance's position as the world's second largest manufacturer.

The decline, sharply accelerated by the coronavirus outbreak, was so stark and so rapid that in February of this year Renault reported its first annual loss in a decade, as margins fell and the French automotive maker felt the impact of Nissan's troubles. Renault reported a net loss of €141 million in 2019, compared with €3.3 billion net profit the previous year. Sales fell 3.3 per cent to €55.53bn and stock plummeted to a seven-year low.

Charged with calming the turbulent economic water churning around the company and steering a fresh course towards profitability is new CEO Luca de Meo.

The 53-year-old Italian comes to one of the most high-profile roles in the automotive industry from one of its most low-key - though it is the one that earned de Meo his moment in the limelight.

As CEO of SEAT, de Meo was responsible for taking an underperforming, unloved and always unprofitable Volkswagen brand from red to black in just four years. And after posting a profit in 2015 (the first in VW's 25-year full ownership of the brand), de Meo followed it with equally successful bottom lines in each of the following

four years, with profit reaching a maximum of €346m in 2019, up 17.5 per cent on the previous year.

De Meo's success at the Spanish brand should have come as no surprise though. The Italian executive started his career at Renault more than 25 years ago before joining Toyota in Europe and then moving to Fiat Chrysler Automobiles. His star was firmly put in the ascendant when late boss Sergio Marchionne picked him to relaunch the Fiat brand and de Meo played a major role in launching the hugely successful 500, a vehicle which helped revitalise the fortunes of the Italian marque.

Revitalising Renault, however, is a different and more complex task, but it's one that de Meo is well aware of.

"We are in a complex, difficult situation, we all are, but Renault took the COVID hit as we were already. I would say, feverish," he told an investors call recently. "So for sure, it is even harder for us. I am personally already pretty deep in the diagnostic of what went wrong. what is wrong and what we need to do to fix it. The good news is that Renault is still a great company with a lot of substance, projects and also a lot of competence.

"People are frustrated, but I think that's what I feel, they are very eager to change direction. The sense of urgency is also definitely there. We are currently touching from what I see the bottom of a negative curve that started several years ago and probably even earlier."

BUILDING BRIDGES

Part of that negative curve is undoubtedly the fractious relationship the Group currently has with its Japanese partners, but the new CEO is keen to build bridges and construct a new working arrangement.

"The first priority is for both companies to focus and fix their miseries internally," he says. "We are finding a good set-up and we are trying to focus on four or five key projects where we can really prove to each other that by working together it's going to bring a benefit. We are making it not too philosophical, very pragmatic and concrete, and you know the Japanese are very concrete people, so they are starting to appreciate that new way of playing the game.

P56

'We are bringing a dream brand alongside the biggest names, for spectacular car races' **CEO Luca de Meo**





COVER STORY
New routes for mobility;
'Toolkit' aid for mobility clubs
Industry response to COVID;
Changing lanes - the trends
likely to alter mobility;
Di Grassi's future focus;
Bigger is better for hydrogen

AUTO FOCUS Renault's game-changing CEO:

he UN's youth actio

P58

P59





We will see in the next months and years the result of that very operational and pragmatic work. I am confident we can give a lot to one another."

The road to fixing the miseries of both will not be without pain, however. Both Renault and Nissan are embarking on harsh cost-saving programmes, totalling in the region of \$5bn in fixed costs, and there are plans to shed at least 27,500 jobs in the coming years. Both companies are looking at cutting back production capacity by about 20 per cent to a combined 8.7 million vehicles a year by 2024.

Renault's share of that burden will be to eliminate about 14,600 jobs worldwide and lower production capacity by almost a fifth in a bid to survive the global auto industry downturn triggered by the coronavirus pandemic. The plan includes trimming 4,600 positions in France, or about 10 per cent of the car maker's total in its home country

With cost-saving identified by de Meo as "a first essential step in the turnaround of Renault", the task now is for the new CEO to reinvigorate the Renault brand. And for de Meo that means implementing a game-changing strategy.

"The company needs to change its 'game module' and move from a search for volume to a search for value and profitability," he said recently as he unveiled his plan for the future.

That strategy envisages the group developing its organisation around its brands, grouping them mainly into four business units: Renault, Dacia, Alpine and New Mobility. The objective would be to give each unit an autonomous organisation with the aim of creating a simpler and more results-oriented organisation.

"The organisation around four strong brands and large cross-functional functions would make it possible to work in a simpler way, more oriented to the markets and customers, to seek the best possible result. This is an essential lever for the Group's recovery," says de Meo.

The immediate future of the Alpine brand was revealed within weeks of de Meo's appointment. At September's Italian Grand Prix Renault announced that the company will rename its team Alpine from the 2021 season, when F1 star Fernando Alonso will rejoin the company with which he scored both his world championship titles in 2005 and '06.

"Alpine is a beautiful brand, powerful and vibrant, that brings a smile to the faces of its followers," de Meo says. "By introducing Alpine, a symbol of French excellence, to the most prestigious of the world's automotive disciplines, we are continuing the adventure of manufacturers in a renewed sport. We are bringing a dream brand alongside the biggest



De Meo says Dacia's first EV, the Spring, will be the most affordable model on the market.

followed by enthusiasts." level at Le Mans.

Alpine certified by FIA.

NEW WAYS



names, for spectacular car races made and

As well as further confirming Renault's commitment to Formula 1 – a move already made by the signing of the sport's new Concorde Agreement between promoter and teams - the company will also take the Alpine brand to a new

The Signatech Alpine team has scored three Le Mans LMP2 class victories and two LMP2 world titles. But now Signatech Alpine will become the Alpine Endurance Team racing in the LMP1 class, which will continue to run alongside the new hypercar under balance of performance rules. Then, at the start of November, the company announced that its Formula Renault Eurocup series would merge with FIA Formula Regional to create a new step on the ladder to F1 – FIA Formula Regional European Championship by

With the performance oriented and sporting side of the organisation taken care of with Alpine, Renault itself is set to move away from the smaller, cheaper passenger cars that have been its backbone in recent years. "The centre of gravity of the Renault brand has to be more

upmarket," de Meo said in an interview with France's Le Point magazine.

It also means a deeper push into the EV market, for both Renault and for budget brand Dacia, and the first fruits of this were unveiled at the company's eWays event in Paris, which not only explored the future of electric vehicles and mobility but also cities and technology.

Chief among the models announced at the event was the Mégane eVision - a concept car and the latest in the line of Renault electric vehicles, based on the new modular CMF-FV platform developed under Renault's new arrangement with Nissan. The hatchback features one of the thinnest batteries on the market and an ultra-compact powertrain providing a more spacious interior layout. The production version of the Mégane eVision is set to be introduced in 2022

"Thanks to our brand-new Alliance platform CMF-EV, we broke the rules of size, use, design and energy efficiency to imagine the Mégane eVision show car," said de Meo at eWays. "We fully leveraged the potential of a pure electric platform to re-invent the classical hatchback in an emotional way. We took our 25-year best-seller and took it to the future. This is just the beginning; a whole new generation of innovation-packed electric vehicles is to come." Above from left: Renault welcomes Fernando Alonso back to its F1 team in 2021 and will race under the Alpine brand; Alpine already races in the **World Endurance** Championship: there has been podium success in F1 this year with Daniel Ricciardo.

The company also confirmed the first electric vehicle for its low-cost Dacia brand – the Spring. To be made available across continental Europe, the Dacia Spring Electric will be the most affordable electric vehicle in Europe. Two options will be available for use across different mobility needs: a version for shared electric urban mobility, and a cargo utility vehicle for last-mile deliveries with no tailpipe emissions.

These launches mark the first phase of de Meo's new regime. When he joined the company fully in July the new CEO promised that "a lot will happen in this house in the next six months", and with a reorganised brand-focused structure, a bold high-performance strategy and a series of new model launches under his belt, de Meo has been as good as his word. The next phase is awaited with baited breath.

'This is just the beginning: a whole new generation of innovation-packed electric vehicles is to come'

/ 2020

The EIA Foundation and LINICEE redefine school trips:

P60

P61

(05) **Building better** KATE TURNER school journeys

The public health crisis caused by COVID-19 has sharpened the focus on safe and sustainable mobility, and now the Child Health Initiative, co-oridnated by the FIA Foundation, has partnered with UNICEF to issue a new set of guidelines designed to promote safe and healthy school journeys

As hope begins to dawn for the immediate challenges of COVID-19, the long-term recovery implications are increasingly seen as an opportunity to address systematic inefficiencies and inequalities, with policymakers and public alike calling to 'build back better.'

The sustainable mobility agenda has become a focus as the co-benefits of actions for both mobility and public health have never been more explicit. Temporary shifts to more sustainable transport modes like walking, cycling and scooting have helped enable physical distancing and given an unprecedented alimpse of the wider public health benefits, especially in urban spaces. Across many urban areas, fewer vehicles on the roads have meant cleaner air, re-purposed roads to encourage walking and cycling, widened pavements for more walking and greater accessibility, and improved health for those using more active transport.

On school journeys children are often faced with multiple threats, from dangerous road traffic. dirty air and COVID-19. Now more than ever, safe



of pedestrian and cycling provision in enabling safe social distancing.

NEW GUIDANCE

'The pandemic has highlighted the vital role of pedestrian and cycling provision

and healthy journeys to school are crucial. Many of the solutions for one threat also address the other - lower vehicle speeds, more walking and cycling, more space to move - and all are important for COVID-19 prevention and reduced road injury risks. These measures enable safe physical distancing and help lower air pollution - believed to increase the risk of contracting COVID-19 as well as causing respiratory illness, which actually increases vulnerability to the novel coronavirus. The journey to school is a particularly urgent issue as more than a billion children are at various stages of returning to school as governments seek out ways to balance COVID-19 risks with the need for education. Road traffic injury, however, remains the leading global cause of death for young people age five to 29. These connections are not just being made by specialist sectors - the support for change is across the globe from parents and the wider public alike. Almost three-quarters of people worldwide support local changes like road closures, limiting traffic and reducing speeds to protect children, and more than two-thirds of parents would switch to walking and cycling on the journey to school as part of COVID-19 social distancing measures, but only if streets were safe. Saul Billingsley, Executive Director of the FIA Foundation, says: "Parents are facing difficult choices about how to protect their children from COVID-19 exposure, from dangerous roads and air pollution, while still accessing education. The pandemic has highlighted the vital role

To keep children safe from both risks on the roads and COVID-19, the Child Health Initiative, a global health partnership co-ordinated by the FIA Foundation, partnered with global charity UNICEF to develop 'Guidance For Safe And Healthy Journeys To School During The COVID-19 Pandemic And Beyond.' The guidance includes 10 key action areas highlighting simple, low-cost ways to not only make streets safer during the pandemic but also in the long-run for children and the wider population. The guidance outlines how to: engage the entire school community; enable social distancing; prioritise active transport; make walking, cycling, scooting and riding a wheelchair safe; help students to follow protocols; reduce private vehicle use: treat school buses as extensions of the classroom; promote safety and hygiene on shared transport; ensure equality; and sustain long-term change.



London Mayor Sadiq Khan has backed a city scheme to reduce car journeys to school

It draws together the successes of experience from across the world in a wide variety of environmental and economic settings. By creating checklists for education authorities and policymakers as well as communities, and by issuing broad, illustrative guidance it aims to encompass the varying needs of children of different ages and abilities living in different contexts

From using community events to build improvised street separations with logs and rocks in rural spaces to city-wide public transport messaging, there are ways to protect every child - no matter where or who they are. Bringing together examples from across the globe, the Child Health Initiative and UNICEE joined with Save the Children to develop a live, open database to share real-world examples. This project gathered examples of safe and healthy interventions to build learning and understanding from across borders. While gathering experiences from interventions across the pandemic, the database also includes pre-pandemic examples that support COVID-19 interventions now since they are conducive to outdoor activity, physical distancing and cleaner air.

One example of pre-COVID-19 child road safety interventions with current and long-term impact is the Mayor of London's School Streets programme. It encourages walking, cycling and scooting by closing roads around schools to vehicle traffic at drop-off and pick-up times to enable physical distancing and improve road safety and air quality. The city's wider Streetspace plan aims to provide safe space for walking and cycling to avoid a damaging car-led response to coronavirus

"It is vital that we don't throw away the improvements made to air quality during lockdown and the past few months with a damaging car-based recovery from this pandemic," said Mayor of London, Sadig Khan. 'Too many lives are already lost each year as a result of our city's toxic air and the results of our monitoring study will show just how much of a difference reducing car journeys through School Streets makes."

The impact of the project is being assessed by a new air quality testing programme funded by the FIA Foundation and Bloomberg Philanthropies. The study, the first of its scale, is intended to add to the global evidence base to support a growing public demand for the interlinked issues of safer streets for children and cleaner air.

Public demand for safer streets

There is overwhelming public support for investment in safe walking and cycling to protect children on their journey to school from both COVID-19 and road danger - that is the result of an opinion survey in 11 countries conducted by YouGov for the Child Health Initiative. Almost three-quarters of the general public support physical changes such as road closures, limiting traffic and reducing speeds to protect children worldwide, and three in five were worried about air pollution. For parents, more than half of school journeys are considered not safe, and more than two-thirds would switch to walking and cycling on the school journey as part of COVID-19 social distancing measures if streets were safer. Latin American respondents reported the highest concerns about air quality and the journey to school. Overwhelming global public support - not just from parents but the wider population - for road safety measures around schools. which would slow, limit and even ban vehicles in the vicinity. saw 74 per cent of respondents expressing support. In five countries (Argentina, Mexico, Turkey, India, and Kenya), that support rose to more

than four out of five members of the public

Overall, more than 69 per cent of parents said they would commit to 'shift modes' by walking and cycling on the journey to school to support COVID-19 distancing measures if they felt the streets were safe. This represents the potential for a huge change in how journeys are made reducing pollution encouraging physical activity and reducing congestion, while at the same time reducing the risk of COVID-19 transmission. **Executive Director of the FIA** Foundation Saul Billingsley says: "This polling shows there is overwhelming and wide community support to invest in walking and cycling, and to reduce vehicle access and speeds around school streets everywhere. Local authorities have public backing to make these changes to streets now, in response both to COVID-19 and the wider challenges of road traffic injury - the leading global cause of death for children and young people and air pollution. While we await the roll-out of COVID-19 vaccines, we must implement the speed vaccine."





FORCES

REPORT

STORY

The UN's youth action:

NSIDE THE FIA FAMILY

P62

P63

TEXT IUSTIN HYNES The change generation

From climate change to diversity and from healthcare to road safety, young people have embraced activism with a commitment not seen for many decades. Jayathma Wickramanayake, the UN Secretary-General's Envoy on Youth, explains why, if we are to build a better future, today's youth need to have a seat at the decision-making table



The current generation of youth has embraced political activism with great zeal. How can that movement for positive change be targeted at boosting road safety worldwide and are their voices heard enough by policy makers?

In August 2018, young people took to the streets of Dhaka, Bangladesh to demand better road safety in their communities. Echoing this message we have seen how young people all over the world are calling for better road safety in their countries. It has been frustrating to see that we lose thousands of young lives in road traffic accidents that are 100 per cent preventable. As you can see from youth movements alobally, young people are able to highlight how different global challenges are interlinked with one another. For example, when young people are tackling the climate crisis, they are also addressing gender inequality, which is primarily responsible for the disproportionate impact of climate change on young women and girls. This is because young people understand the intersectional nature of the issues that the Sustainable Development Goals aim to address and solve Policy-makers need to acknowledge the power of young people's leadership and to do so we must actively listen to youth. At the United Nations, as we celebrate the 75th anniversary of our work, we recognise the need to listen meaningfully to young

people's priorities and concerns. The global UN75 survey and town hall which reflected thousands of young people's voices showed that 87 per cent of young people who took part believe global cooperation is vital to address today's challenges. This shows how young people are ready to be heard and engaged as leaders and equal partners in global action, working side by side with policy-makers.

When mobilising young people and their leadership, it is also important for us to highlight the connections between road safety and other global priorities. For instance, we need to be able to highlight how best road safety practices can contribute to the global health agenda, climate action agenda, improve accessibility and inclusivity, and lead to better access to education infrastructure for young people. We need to embrace young people's political activism, while also ensuring that they are engaged in the development of solutions for road safety. By acknowledging young people as equal partners and cocreators of the global road safety agenda, the world can best benefit from their leadership and agency.

According to the World Health Organization, nearly 1.3 million people die in road traffic crashes annually. Of these, nearly 400,000 young people under the age of 25 are killed.

That's a staggering 30 per cent of lives lost. What must be done to reduce that number?

| This staggering number cannot be ignored. Road traffic injuries are the leading cause of death globally for young people. Every day more than 1000 young people under the age of 25 are killed in road traffic crashes, many of them vulnerable road users - pedestrians, cyclists, motorcyclists and passengers of public transport.

To reduce this number, we not only need global collaboration, but also joint multistakeholder efforts that are cross-sectoral ranging from public awareness, to education to infrastructure development, to accountability and rule of law. This is crucial because road safety policies and solutions should be a shared responsibility for both road users and the stakeholders involved in building and improving road infrastructure and policies. These joint efforts and collaboration should open opportunities to share data, research and best practices that can lead to global vehicle safety standards, road laws and regulations, and sustainable transport systems. A meaningful multi-stakeholder collaboration on road safety can only be achieved through a truly inclusive process that ensures young people, who often make up for the largest proportion of road traffic victims, are consulted throughout and are included in relevant decision-making on this issue.

recoverv agenda.

action on this subject?

liveable, healthy planet



Road traffic injuries are the leading cause of death for children and young people aged 15–29. Do you think public awareness of this crisis needs to be elevated to the level shown towards other issues? And is that particularly the case among young people who can pressure their elders towards better road behaviour?

Since the start of the COVID-19 pandemic, the world and our lives are no longer the same. Even though preventative COVID-19 measures have limited our mobility and travel, the 'new normal' that we're living in today also presents a possibility to re-evaluate our infrastructure, policies and ways of living. This re-evaluation should serve as a guide on how the world can build back better as part our post-COVID

It is important to continue raising awareness and ensuring that road safety is included as part of this agenda, so the infrastructure and policies that are being reimagined during the recovery period are ones that align with the best practices on road safety.

As for young people, we are witnesses of their consistent advocacy for the need for better road safety policies and global standards. in addition to their rightful demand for meaningful engagement in decision-making processes. At the 2nd World Youth Assembly for Road Safety, the Global Youth Statement - reflecting the voices of 1,500 young people from around the world – demanded better road behaviour in addition to better road policies, standards and infrastructure.

An issue that is at the forefront of the minds of young people is climate change. Does that level of concern make you optimistic about future

| I think if there's one way to describe young people's climate activism it would be 'we're just getting started'. Young people's consistent call for urgent action by leaders, decision-makers and business leaders is one of the things that keeps me optimistic about our future. Today's young people understand the irreversible impact of climate inaction and therefore they are ready to risk their lives. safety and well-being to be at the forefront of climate action efforts. They know that the clock is ticking and we need to act now. At the end of the day, climate change is an existential issue for young people. It is about having a

The efforts that young people are undertaking to raise awareness, demand change and create solutions for reversing climate change, global warming, environmental degradation and biodiversity loss have led to significant progress in the global effort to demand accountability from decision-makers. When young people are meaningfully engaged as leaders and equal partners, the world will always have a chance at not only being hopeful, but finding the most impactful and sustainable, future-proof solutions.

Obviously the automotive world has a responsibility with regard to sustainability Are you encouraged by moves towards

electrification and cleaner mobility? | I'm very glad to see that the awareness and commitment from the automotive sector has been increasing. Efforts to drive the automotive world to be cleaner and more sustainable are positive signs for a greener future. However, I also hope the sustainability efforts which are implemented in the automotive world are holistic, and that rights-based sustainability principles are applied throughout the entire process from design and production, all the way to the end-user experience.

'One way to describe young people's climate activism is "we're just getting started"'

COVID-19 has deeply affected all aspects of life globally. How concerned are you about the long-term effects of the global pandemic on young people in terms of economic hardship, joblessness, mental health and the erosion of opportunities?

Like young people all around the world, I am deeply concerned regarding the long-term impact of COVID-19. Even before the pandemic, young people were already facing the consequences of unemployment, the impacts of the climate crisis, and the lack of mental health resources and services available for youth. The pandemic has only exacerbated these concerns and deepened the inequalities.

As a result of the COVID-19 pandemic more than one in six young people are out of work and nearly 1.6 billion learners in more than 190 countries are affected because of school and university closures. Increased gender-based violence has affected young women and girls disproportionately, and we are at a risk of further leaving behind youths with disabilities. LGBTIQ+ youths, young indigenous peoples and other minority youths who were already facing multiple layers of exclusion and decision-making even before the pandemic turned the course of our world.



Creating safer travel for children including to school is high on the youth ment's agenda.

However, with these concerns in mind, I also want to acknowledge that young people are often unparalleled in their resilience and resourcefulness. Throughout the COVID-19 pandemic, they have taken initiatives to contribute to creating solutions to safeguard their communities

I've also seen how young people provide peer-to-peer support for mental health, volunteering to be first responders, fighting misinformation online, and young entrepreneurs who are helping the local economy. These are clear examples of how the world can learn from young people in our attempt to overcome global challenges, recognising that governments must work hand-in-hand with young people and invest in youth-led solutions towards recovery.

The UN Sustainable Development Goals 2030 were launched in 2015 with an emphasis on youth engagement in the delivery of those goals. How has youth involvement in that process developed over the past five years and are their actions having an impact?

For the longest time, young people have been advocating for a seat at the table. However, in the five years since the 2030 Agenda for Sustainable Development was first agreed. we have not seen enough progress towards achieving the SDGs. The COVID-19 pandemic was the 'test' and we failed. As a result, we have seen young people everywhere increasingly claiming spaces, demanding accountability, and significantly pushing a sustainable development progress that leaves no one behind.

As an example, the world's youth movement for climate action through global climate strikes has led more world leaders to strengthen their commitment for climate action in line with the Paris Agreement. All over the world young people are not only voicing their concerns but also offering youth-led solutions and helping mobilise communities to contribute to the achievements of the SDGs.

In recognition of the leadership and potential of young people, UN Secretary-General António Guterres launched the system-wide UN Youth2030 Strategy in 2018 that serves as a common framework to ensure the United Nations and its partners can work together with and for young people of all diversity towards the achievement of the SDGs and ensuring they can fulfil their potential. Since then, a system-wide effort led by my office has worked to put the Youth2030 Strategy into action even during the pandemic. Today, the establishment of the Secretary-General's Youth Advisory Group on Climate and the new class of Young Leaders for the SDGs are concrete examples of how young people's voices are included at the UN's highest level and how they are contributing to shaping global action. 4

AUTO #32 Q3 / 2020

Road safety's young advocates

New voices for safety

TEXT OMNIA EL OMRANI / THIAGO GRUNER

As the leading cause of death in youth and adolescents globally, road traffic injuries lead to devastating impacts on young people, their families and friends on a daily basis - no matter where they are.

Yet we, as youth, no longer tolerate being marginalised as the victims of a mobility system that was designed around the use of motor vehicles instead of our safety and health. Not only do road crashes threaten our existence, they also imperil sustainable development and social equity due to their significant effects on low- and middleincome countries. That is why road safety is relentlessly tackled by YOURS - Youth for Road Safety. YOURS has mobilised thousands of young leaders, including us, to advocate for meaningful engagement in shaping safer roads that do not kill us or our dreams.

These continuous efforts reached a turning point in February in Stockholm where the 2nd World Youth Assembly for Road Safety took place. It was an empowering event organised by youth for the youth, gathering global young leaders from all walks of life to act against road traffic violence.

Young advocates, innovators and changemakers from academia, private and public sectors participated in an action-oriented, artistic and inclusive event, with more than 160 young people from 74 countries in attendance.

Most importantly, a Global Youth Statement for Road Safety, based on 200 youth-led consultations, was approved and presented the following day during the 3rd Global Ministerial Conference on Road Safety. This key advocacy document illustrates the current challenges faced by young people across all five regions, as well as our demands and commitments for safer roads.

To reinforce the crucial role of young people as agents of change in the road safety agenda, we joined eight other youth leaders to form the Youth Advisory Board for the first-ever Global Youth Coalition for Road Safety.

Our aim is to build the capacity of young people

for Road

(05)

Founded in the wake of the United Nations World Youth Assembly for Road Safety in 2007, YOURS, the Youth for Road Safety organisation, earlier this year issued a statement demanding safer roads worldwide. The Co-chairpersons of the 2nd World Youth Assembly on Road Safety explain why it's crucial that young people are given a voice at the decision-making table on global mobility

to effectively advocate for a safer mobility system. We also work to advance the grassroot efforts led by young people to empower their communities and drive policy change, hence putting the Global Youth Statement into action. By this, we can engage as key stakeholders and emphasise the urgency of addressing this global crisis that is impacting current and future generations to come

Since the launch of the coalition, we have organised three virtual events that reached over 30,000 people. We additionally participated in more than 10 online conferences and panels to further scale up youth-led advocacy for road safety

'It's critical we build safer roads with a transformative and health-centred approach'

and its connection with COVID-19 and the post-pandemic recovery, highlighting how critical safe mobility is to building a better future.

Now, what kind of world will we inhabit once the COVID-19 pandemic comes to an end?

As young people, we believe it's critical that we build safer roads with a transformative and health-centered approach that ensures no one is left behind. We call on world and local leaders to have a seat for us at the decision-making table so that we can deliver our inputs and create solutions for safer and more sustainable mobility systems.

We are those who will face the consequences of the decisions made today. We are here to claim our space and ask you: will you work with us to save lives and put an end to the global road safety crisis? You can find more information about our initiative at www.claimingour.space. Feel free to reach out to us in case you are interested in partnering with us! •









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AUTO #32 Q3 / 2020

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Jocher Rindt;

P66

P67

<u>()</u> Rindt Remembered

September 5th marked the 50th anniversary of the death of Formula 1 legend Jochen Rindt. AUTO celebrates the career of the sport's only posthumous champion

TEXT WERNER JESSNER It is the summer of 1970. Daughter Natasha is two years old. The newly-built house on Lake Geneva, right next door to his friend and rival Jackie Stewart's, has been remodelled and Jochen Rindt's win at the French Grand Prix of July 5 means the 28-year-old is now leading the Formula 1 World Championship for the first time. The man with the distinctive nose and nasal voice, competent at a number of sports, one of F1's new breed of 'rock star' racers and a national hero back home in Austria, had already had an impressive career. Life was good.

Strictly speaking he wasn't Austrian at all. He was German. His father Karl owned the Klein & Rindt spice mill in Mainz. Karl Jochen Rindt had a German passport and retained it until his dying day. Only his mother, Ilse, was Austrian, as was his racing licence further down the line. When asked what nationality he felt he was, he always answered "European".

Both Jochen's parents died in Operation Gomorrah, a series of RAF bombing raids on Hamburg in the summer of 1943, which cost 34,000 people their lives. Jochen was 15 months old at the time. He had no memory of his parents. All that survived were a few fading photos. Jochen and his half brother Uwe were sent to the Austrian provinces in the hope that the orphans would have a better chance of survival in Bad Ischl and later Graz than in the middle of Germany.

Rindt's youth was wild, even by the standards of the day. He first came to the police's attention at the age of 15 for speeding on his moped. Problems at school saw him sent to boarding school in Bad Aussee where he shared a room with Red Bull's current Head of Motorsport, Helmut Marko. When he broke his leg in a skiing accident, the spice mill sent him a VW Beetle, chauffeur included. He sent the driver back, proceeded to terrorise the mountain roads

Jochen Rindt paved the way for Austrian involvement in motor sport, and was a national hero.

but the car stayed. Rindt and his cohort before they even had driving licences.







	INSIDE THE FIA FAMILY
n	AA Vietnam
	& Vietnamese
at	Motorsport
2000	Association

He came to motor racing through an acquaintance of his late mother's who advised him to put his impetuousness to competitive use as a competitor in rallies. In 1961 he bought a Simca Montlhéry and after that a much more powerful Alfa Romeo Giulietta TI in which he mixed it up on the central European racing scene. Rindt finally sat in an open-wheel car for the first time on an icy cold day in February 1963 on tyre manufacturer Semperit's test track in the town of Kottingbrunn in Lower Austria. His friend, Austrian motor sport journalist Helmut Zwickl, recalls: "It was the Formula Junior of local star Kurt Barry and Rindt wanted to buy it. He got out after a couple of laps, exasperated. 'What a load of s**t,' he ranted. 'I can't see a thing. I'm not comfortable. The wheels are vibrating.' A couple of weeks later he won his first formula car race in the very same car at Cesenatico in Italy."

And so it continued. Rindt came of age and finally had access to his inheritance. He moved to England and invested a not inconsiderable sum in a Formula 2 Brabham and employed a mechanic. In May 1964 he won his first race on English soil, the London Trophy F2 race at Crystal Palace, going head-to-head with then-world champion Graham Hill. If he hadn't featured on the list of racing greats of the day until that point, he did now. He would go on to win 29 F2 races in all.

'He got out the car exasperated. A couple of weeks later he won his first formula race in it'

Rindt's F1 debut in 1964 at Zeltweg, where his brilliant car control was in evidence. Right: celebrating Ferrari's last win at Le Mans with Masten Gregory, but F1 was always the focus.

His first Formula 1 outing came in a Brabham at his home race in Zeltweg. His reputation as a fearless, no-holds-barred competitor with unbelievable car control was confirmed. He drove for Cooper in the 1965 season - the first non-British racing driver to start for a British team. The 'madman with the nose', as he was known to colleagues, had made it to the top. He managed to make it into the points twice in his first full F1 season, despite having an inferior car. The highlight of the year was a race that would never have loomed large on his career radar. He and Masten Gregory thrashed their way to victory at the Le Mans 24 Hours in a Ferrari 250 LM.

A third driver was also reputedly involved in that win. In the middle of the night, while Rindt slept and Gregory, who wore thick glasses, struggled to see due to fog and the smoke drifting from cooking fires all along the course, American sports car racer and NART team member Ed Hugus stepped in and drove Gregory's final stint. Team principal Luigi Chinetti probably wasn't all that sure if the registration procedures had been strictly adhered to and kept quiet about the third man. So Rindt and Gregory, aided by Hugus' surreptitious stint, won. It remains Ferrari's last overall victory at Le Mans.

Despite the success Rindt was always focused on Formula 1. He finished the 1966 season in third



place, again with Cooper. The following campaign was a year to forget, except in his private life, as he married Nina, née Lincoln, the daughter of a Finnish racing driver. After another fruitless year with Brabham, he finally moved to Lotus in 1969, the first non-British driver in that team's history. "I'll either become a world champion or die here," he said prophetically.

Neither option was that far-fetched. The cars designed by the ingenious Colin Chapman were the technological benchmark of the day but they were also delicate and unpredictable. At Montjuich Park in Barcelona in 1969 the rear wing supports failed, as did a steering column during practice for the 1970 French Grand Prix. But technical fragility was a price Rindt was willing to pay in exchange for the raw pace of Chapman's car and in order to make his dream of a world championship title come true.

"I don't trust Lotus. We have a business relationship," Rindt said provocatively to camera without a hint of diplomacy or political correctness. He also said: "It's impossible to knock any sense into Chapman's thick skull". He didn't mince his words when it came to the mechanics either. When the steering column broke in Clermont-Ferrand, he tore a strip off the Lotus crew in front of Zwickl, who recalls the driver saying: "If this happens again and I survive, I'm going to kill you all."

ALL OR NOTHING

But the calculated partnership with Lotus continued, as it was now all or nothing. The brand-new Lotus 72 was a radical departure from its predecessors, and from its rivals, and was loaded with potential. Introduced for the Spanish Grand Prix, the car proved a handful, however, and after a second unsuccessful outing at the non-championship BRDC International Trophy at Silverstone seven days later, Lotus decided to temporarily withdraw the 72 from service and thoroughly rework it. With two races gone (Rindt had opened the campaign in South Africa driving a 49C to 13th place) the Austrian driver was pointless, while Jackie Stewart led the championship chase with 13 points, four ahead of Jack Brabham.

In Monaco Rindt again started in the old Lotus 49. This time though he was determined to make an impact. He chased veteran Brabham through the streets of the Principality in a thrilling race, driving like a man possessed to close up to the Australian in the late stages. On the final corner of the last lap, he was right behind the three-time champion and forced him into a mistake. Brabham slid into the straw bales, Rindt slipped by and won. He would later cite his Monaco drive as the best of his career.

Meanwhile, the heavily-revised Lotus 72 was now considered stable enough to return to action. Rindt took it to victory at the Dutch Grand Prix in Zandvoort, having secured pole and gone on to lap all the other drivers in the race bar second-placed Jackie Stewart.

The first win on English soil was the 1964 London Trophy F2 race, where Rindt beat world champion Graham Hill

P68







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ORCES

Galler News

REPORT

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GOLD

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Road safety's young adv

REAR VIEW Jocher Rindt;

P70

P71







His winning streak in 1970, including victory in Britain, meant Rindt could not be beaten to the world championship.

where he battled lckx's Ferrari for the lead. **Right: The Austrian was**

But there was no cause for celebration. Piers Courage was killed in a crash and Rindt drove by the burnt-out wreck of his friend's car for 58 laps.

Victory next time out in France took him to the top of the world championship standings - despite suffering with an ulcer, a condition exacerbated by his constant smoking - and he extended his lead at the British and German Grands Prix.

The lead changed between Rindt and Jacky Ickx a full 13 times in the first race at the newdesign Hockenheimring before the Lotus driver got the upper hand and left the Ferrari in his wake. "My luck is beginning to unsettle me," said Rindt, ever the realist. He retired due to technical problems at his home Grand Prix at the newlycompleted Österreichring. It was to be the last race for a man who was already beginning to envisage life after a championship win.

"If I become champion," Rindt was quoted by the New York Times as saying only a few days before his death, "I think it will be different. I want to give up racing in the next three years.

'I haven't put in 10 years to give up racing just as I am ready for the kill'

But I haven't put in 10 years to give it up just as I am ready for the kill."

September 5 1970, Monza. The day the sun fell from the sky. According to contemporaries, at Chapman's insistence, Rindt went out in practice without nose wings or aerofoil in an attempt to squeeze as much straightline speed as possible out of the 72 to counter the more powerful flat-12 Ferraris. The right-hand brake shaft on the Lotus snapped as he went into Parabolica and Rindt arrowed off track and into the Armco barriers.

Denis Hulme, who had just been passed by Rindt, saw it happen. "First the car moved to the right, then left and then right again before suddenly veering left and straight into the crash barrier."

Rindt hadn't fastened the leg straps on his seatbelt so as to be able to get out of the car more quickly in case of fire. It proved fatal. He slid forward in the cockpit and died on the spot from multiple injuries. He was just 28 years old.

Some 30,000 mourners attended his funeral, among them the totality of motor sport's elite. After the penultimate race of the season, the American Grand Prix at Watkins Glen, it was clear that nobody could catch Rindt in the world championship and he remains to this day the only man to win the title posthumously.

And what is Jochen Rindt's legacy? He has left a deep imprint, especially in Austria. The Österreichring was built because of him and from that point on we can draw an unbroken line right up to present-day Formula 1 with the Red Bull teams and Toto Wolff as Mercedes team principal. Helmut Marko is certain of his childhood friend Rindt's place in history: "Austrian motor sport would never have developed in such a dynamic way were it not for Jochen Rindt." Fellow countryman Niki Lauda once said: "I don't think any of us would be where we are if Jochen hadn't laid the groundwork."

Bernie Ecclestone, Rindt's manager, close friend and gin rummy partner, was short and concise in his appraisal. "He didn't over-think things. He got into the car and knew what he had to do. He was the best." •





06

DRIVING FORCES Oscar Pias **COVER** STORY New routes for mobility; 'Toolkit' aid for mobility clubs Industry response to COVID; Changing lanes – the trends likely to alter mobility; Di Grassi's future focus; Bigger is better for hydrogen

The FIA and F1 move Jochen towards greener fuels; Rindt; Renault's game-changing CEO; Ferrari at The FIA Foundation and UNICEF redefine school trips; The UN's youth action; Road safety's young advocates

INSIDE THE FIA FAMILY AA Vietnam & Vietnamese Motorsport Association

FINAL LAP Tracking motor sport's safety advances P72

P73

06 JUNC ALLIEVI

In September, Ferrari made Formula 1 history when it started its 1000th Grand Prix. Italian motor sport journalist *Pino Allievi* first covered the Scuderia in 1974 and over four decades with *La Gazzetta dello Sport* and Italy's Rai TV witnessed some of the team's greatest achievements. Here, he chooses his most important moments from across Ferrari's seven decades of F1 glory



The legend begins

1951 - BRITISH GRAND PRIX

It all started on July 14, 1951. Of course, Enzo Ferrari was not in attendance at Silverstone, preferring as always to stay at home and let his staff tell him what was going on. The previous year, he refused to send cars for the championship's inaugural race, as the organisers were offering a pittance in start money, so he chose to send three cars to race in Mons, Belgium for more reward and lesser competition. Now, though, Ferrari needed to make a name for himself, and racing in England fitted the bill.

Although it did not follow the philosophy of his 125, Ferrari built the 375 with a 4500cc naturallyaspirated V12 to put an end to Alfa Romeo's dominance with its turbocharged 159, which was very powerful but burned through fuel. At the wheel, Ferrari employed the little-known José Froilán González. Stout and muscular, he'd allowed himself the pleasure of overtaking the master, Juan Manuel Fangio, his friend with whom he shared an Alfa coupe the previous Sunday.

'll Cabezon', as he was known, had never been to Silverstone and Fangio took him round the track lamenting the fact it was "perfect for your Ferrari".

González smiled and after he took pole on Saturday, he began to believe it. The race went badly for Fangio in the Alfa and a final





(06)

ORCES

RONT

Galler Vews

REPORT

TOP

Ferrari at 1000 races edefine school trips; Road safety's young advocates

NSIDE THE FIA FAMILY

FINAL LAP

P74

P75



Shark tale

1961 – BELGIAN GRAND PRIX

"In the Emilian countryside I have always seen the oxen pulling the cart, not the other way round," said Enzo Ferrari when the agile rearengined Cooper started winning. "When I had lunch with the Commendatore at Maranello, he admitted he would never have built a rear-engined car," recalled John Cooper.

In 1959, however, Ferrari had a change of heart and instructed technical director Carlo Chiti and assistant Giotto Bizzarrini to look at putting the engine behind the driver. Thus was born the Dino 246 P. The following year, the sophisticated rear-engined, six-cylinder Ferrari 156 appeared, with its unmistakable shark nose and bodywork

designed in the wind tunnel. It proved unbeatable, with a clean sweep of the top four in the Belgian Grand Prix at Spa-

Francorchamps, a record that still stands today. Phil Hill won by just seven tenths of a second from Wolfgang von Trips, with Richie Ginther third in the yellow colours of the Belgian importer. Olivier Gendebien was fourth.

Ferrari's press officer, Franco Gozzi, had persuaded Ferrari to enter Gendebien, who had just won the Le Mans 24 Hours for them. Ferrari wasn't convinced, and after being told the top three by phone asked, "What about Gendebien?" On hearing he was fourth, he replied, "I told you he was slow in an F1 car!"

Phil Hill keeps the sister 'Sharknose' of Wolfgang von Trips at bay at Spa.

'The Commendatore admitted he would never have built a rear-engined car'



Lauda revives the Prancing Horse

1974 - SPANISH GRAND PRIX

Ferrari had endured a terrible season in 1973 and for the following year Mauro Forghieri, back in charge of the Race Department, redesigned the 312 B3, with Arturo Merzario employed as test driver. Forghieri thought Merzario would be the number one driver for 1974. However, the Old Man wanted Clay Regazzoni back, who in turn suggested he take on Niki Lauda, his former BRM team-mate.

The 312B proved immediately competitive and Ferrari breathed a sigh of relief, especially after Lauda and Regazzoni lapped everyone at Jarama.

In Spain, Lauda won after Peterson retired and Luca di Montezemolo was seen jumping for joy at the finish line. It was the start of a renaissance. Ferrari was back on top and stayed there for years, even if in a thrilling championship that year the titles went to Emerson Fittipaldi and McLaren.

It all went away from Clay at the final round in Watkins Glen, USA, as the set-up on his 312B was completely wrong, partly because Forghieri was late getting there due to a problem with his flight. The engineer drove like a madman in his hire car from Chicago to the Glen. Regazzoni always felt he had lost the world championship before that day, believing Montezemolo favoured Lauda. Niki's only comment was that, "Clay deserved the title and I was very sorry for him."

> Lauda and Regazzoni led Ferrari's renaissance at Jarama in '74, but Fittipaldi took the title.



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FORCES

REPORT

FRONT

Galler News

STORY

Renault's game-changing CEO: define school trips; Road safety's young advocate

REAR

Ferrari at

1000 races

NSIDE THE ΓΙΔ ΓΔΜΙΙΥ

P76

P77



Villeneuve and the art of the impossible

1981 – SPANISH GRAND PRIX

In Canada the country was awash with banners proclaiming, "J'ai la fievre Gilles Villeneuve" (I've got Gilles Villeneuve fever). In Italy the populace was in a frenzy and glued to its television screens. Everyone only had eyes for the charismatic Quebecois, especially as he had just won the Monaco Grand Prix, proving that the turbocharged Ferrari could also be competitive on the twistiest of tracks.

Then, as the Jarama race approached, Gilles headed to Maranello where within earshot of Enzo Ferrari, who doted on him, said he wanted "a car as quick as the other one or one that's half a second slower. I'll find the missing second!" Villeneuve put his theory into

practice on June 21 when, in the very powerful Ferrari 312 CK, with a poor chassis and a habit of getting through its tyres, he took the lead in Jarama on lap 14 and for the remaining 66 laps kept the pack of wild dogs in check.

At first it was Carlos Reutemann, but eventually it was Jacques Laffite who pushed him all the way to the end in the Ligier. The Ferrari had the speed down the straights, but not in the corners. Others might have waved a white flag, but not Villeneuve, who drove with flair and precision. Laffite finished 0.22 seconds behind him, then came Watson (McLaren,) Reutemann (Williams) and de Angelis (Lotus). The five were separated by just 1.24s. It was an incredible demonstration of a man utterly in command of his car and Italy was enraptured. "Gilles reminded me of Nuvolari," was the greatest possible accolade from the Commendatore.

Fan favourite Villeneuve made his 312 CK unbeatable at Jarama in '81.

Prost the centurion

1990 - FRENCH GRAND PRIX

The previous year Alain Prost had overtaken Ayrton Senna at the same corner, down the inside at Le Beausset, going on to win his home race at the Paul Ricard circuit. Twelve months later he did the same thing to Ivan Capelli in the Leyton House-Judd before charging off into the lead, giving Ferrari its 100th Formula 1 win.

The first of those two wins, on July 8, 1989, came in the middle of a political storm as the Frenchman felt Senna was getting preferential treatment at McLaren and so, at the end of year, he walked out.

Ferrari welcomed Prost with open arms and, with Cesare Fiorio as team manager, Prost did a great job of developing John Barnard's 641/2, which took its first win in Brazil and then in Mexico, where, in the other Ferrari, Mansell pulled off that amazing passing move on Berger at the terrifying Peraltada corner.

Then came the French Grand Prix at Le Castellet, the win carrying the perfume of Provence. Capelli, who had failed to qualify in Mexico, went into the lead, getting the better of Berger, Senna, Mansell and Patrese thanks to his Leyton House, which had been brilliantly developed by Gustav Brunner. While the rest had stopped for tyres. Capelli pressed on. But in the end, his tyres were shot and Prost passed him. It was hardly a spectacular victory for Ferrari, but it was historic, being the one hundredth.





A new legend begins

2000 - JAPANESE GRAND PRIX

At 15:41 Japan Standard Time on October 8, 2000 Michael Schumacher effectively became world champion for the first time with Ferrari. The race was not yet over, but Michael, pushing like mad once Mika Häkkinen had pitted for dry tyres three laps earlier (even though the track was still wet), made his own stop and emerged from the pitlane 4.1 seconds ahead of the Finn's McLaren. The gamble had given him the title, now he just had to make it to the chequered flag. Back in Italy and Germany, champagne corks were popping as the celebrations began for something that had been five years in the making. "My heart is bursting with happiness," said Schumacher, "Ross [Brawn] gave me a winning strategy. It won't stop here, we will go on winning for a long time." Gianni Agnelli, president of the Fiat group, the major stakeholder in Ferrari, said it was "a win that was

good for Italy," while Prancing Horse president Luca di Montezemolo added: "We knew how to wait and it's the best moment of my career."

Everyone felt the victory in Japan was the start of a magical period that would go on for years, the best in Ferrari's history. Jean Todt had masterminded a group of exceptional people who had learned to work together as no others had done before.

At the tip of the Ferrari spear was Schumacher, the shy, quiet German who found a new family in Maranello. Todt was a cross between a big brother and a father to him, a man with whom he would go shopping, holiday with and confide in. The team were his other family member and the symbiosis between driver and team was a magical formula, unique in F1. Suzuka was only the first step, the rest was the logical, though utterly stunning consequence.



Kimi Räikkönen secured Ferrari's first Drivers title of the post-Schumacher era.

Räikkönen's reward

2007 - BRAZILIAN GRAND PRIX

Kimi Räikkönen won the world championship in his first season with Ferrari. It seemed unlikely going into the final round as all the money was on a battle between the McLaren drivers, Hamilton and Alonso, who led on 107 and 103 points respectively. Räikkönen was seven points adrift, so it seemed it would take a miracle. But he did it.

At the start he slotted in behind team-mate and pole-sitter Massa. while Hamilton had a mediocre start and then went off-track before a gearbox problem on lap eight saw him drop to P18. With Massa leading and Lewis out of the points, Alonso was the virtual champion. But after the second run of pit-stops, Massa let Räikkönen pass and that's how they stayed to the flag, giving Kimi the crown.

On the podium, the iceman thawed and even smiled and waved. He had achieved his childhood ambition and in his usual laid-back way, declared: "I didn't think I could do it. I wasn't the favourite. I'm happy now and this title is not just mine it is also Ferrari's, who didn't put a foot wrong, and it's also Massa's, who helped so well."

It was Ferrari's first title in the post-Schumacher era, with Stefano Domenicali replacing Jean Todt at the helm of the Gestione Sportiva. As he stepped off the podium, Räikkönen could not hold back the tears, causing his race engineer Andrea Stella to comment: "Those tears made us understand even more that Kimi is one of us." •



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ORCES

Road safety's young advocate

Ferrari at 1000 races

Celebrating 1000 races, on home soil

2020 - TUSCAN GRAND PRIX

Ferrari's 1,000th race had to take place at a special location and in a year when sudden change was forced up Formula 1, what better venue could there be to host the landmark race than Ferrari's own circuit, Mugello, at the heart of one of the most beautiful landscapes in the world, the hills of Tuscany.

The weekend began with a stunning celebration of the Italian marque's storied F1 journey in Florence. Then, after the gala and back at Mugello, the flowing, high-speed layout didn't disappoint.

Lewis Hamilton won a dramafilled, incident-packed Tuscan Grand Prix that was twice red-flagged due to crashes. The Briton took his 90th career F1 win ahead of team-mate

Valtteri Bottas, while Red Bull Racing's Alex Albon scored his first Formula 1 podium finish with third place.

For Ferrari, labouring through a difficult season, the spoils were less extravagant but with Charles Leclerc ninth and team-mate Sebastian Vettel finishing in tenth place, the



Charles Leclerc on his his way to P9 at this year's Tuscan GP





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P81



Image: OT Geared up Gorden up for greater safety

As one of South East Asia's most dynamic economies, Vietnam's rapid development has sparked a huge increase in motorisation. But while interest in mobility and motor sport has blossomed in the country it also comes with a downside – a rising toll of injuries and deaths on the road. Aiming to arrest that trend are the country's AA Vietnam and the Vietnamese Motorsport Association

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(07

ORCES

STORY

REPORT

he UN's vouth actio Road safety's young advocate INSIDE THE & Vietnamese Motorsport

P82

P83

AA VIETNAM -For the benefit of all

As the world struggled to contain the COVID-19 pandemic, a small Vietnamese non-profit helmet factory named Protec used its assembly line to produce millions of face masks, thus helping save lives around the world.

Protec's Founder, AA Vietnam President and long-time philanthropist Greig Craft, calls this initiative an example of "social enterprise" for its twofold goal of helping his factory's workforce (many of whom are physically disabled) and benefiting society as a whole.

"The goal is to give people with disabilities an opportunity to work so they can feed and care for themselves and their families, and also do something good for society. Many of the workers are physically disabled from road crashes, vet are among the most productive of our employees," says Craft. "With the support of the FIA Foundation and AIP Foundation, we are producing quality and CE-certified medical masks for frontline workers and hospitals, with a special focus on supporting vulnerable communities in impacted countries."

The club president was committed to making a positive impact in Vietnam long before the pandemic started, however.

Since the establishment of the AIP Foundation in 1999, the AA Vietnam president's priority has been to reduce the suffering experienced by so many in the country due to road trauma.

"Twenty years ago, when traffic deaths and serious injuries were skyrocketing in Vietnam and other developing countries - many due to head injuries from motorcycle crashes - we established the AIP Foundation, a non-profit organisation, and in 2018



AA Vietnam to deliver effective road safety interventions centred around research, education infrastructure, advocacy and communication, in addition to the core mobility tasks of insurance, travel and roadside assistance," explains Craft.

"What started as Helmets for Kids, a school-based programme launched in collaboration with former US President Bill Clinton in 2000, has since expanded into a comprehensive set of AA Vietnam road safety programmes, each designed to address unique communities. In collaboration with the FIA, FIA Foundation and AIP Foundation, this approach has expanded into car safety and speed reduction interventions."

In 2018 AA Vietnam, with the support of the FIA, brought the #3500LIVES Global Road Safety Campaign to the country, leveraging a multifaceted

AA Vietnam President Greig Craft has long upported the use of safe helmets, especially for children



communications strategy to install billboards in 12 locations and conduct training workshops for 200 drivers in Hanoi. As a result, more than 700.000 members of the community were exposed to educational materials aimed at encouraging safe driving habits for car and motorcycle owners. Also as part of the FIA Road Safety Grant Programme, in 2019 AA Vietnam implemented the Child Safety in Car initiative, modelled after the FIA Child Safety Toolkit. Through training workshops, the initiative has considerably raised awareness of the importance of child vehicle restraints and seatbelt use in the country.





'Work needs to be done to remove dangerous helmets from Vietnam's streets'

URGENT ACTION

Nonetheless, recent road safety figures in Vietnam show an urgent need for action.

"In 2018, road crashes resulted in approximately 24,970 deaths in Vietnam; road injuries cost the country more than US\$5.4 billion annually, which accounts for 2.9 per cent of its GDP," explains Craft.

"Approximately 2,150 children die on the roads of Vietnam each year, the equivalent of five children dving per day. As of 2017, road crashes are the fourth leading cause of death among Vietnamese children aged five to 14." To address this unacceptable

situation, AA Vietnam, in

Many of the workers at Craft's Protec factory have disabilities but have learned how to support themselves

compliance varying widely between rural and city areas.

In 2006 Craft launched the hard-hitting campaign 'Wear a Helmet. There are No Excuses'. With backing from the Vietnam Helmet Wearing Coalition and the support of the government, the scheme was rolled out nationwide.

The success of the campaign, together with advocacy initiatives carried out by AA Vietnam, the AIP Foundation, the FIA and FIA Foundation, were pivotal in influencing and advancing the successful passage of Vietnam's universal helmet law in 2007.

"Helmet compliance went up overnight, from below 10 per cent in the early 2000s to over 90 per cent," says Craft. "After 10 years, the impact of the law has been significant, with savings of US\$3.5bn, a reduction in fatalities of 15,000 and 500,000 fewer head iniuries.

A unique step towards road safety was taken in 2019 with a new initiative organised by AA Vietnam in collaboration with the Global Alliance of NGOs for Road Safety and AIP Foundation, when the Vietnamese government made specific pledges of action to meet the road safety SDG target by 2030.

"Since the round table, the Government of Vietnam has taken action to demonstrate its national commitment in promoting helmet safety for children," says Craft. "Between 2018 and 2019 the Government and Honda have delivered nearly 4 million helmets to first graders nationwide with support from AA Vietnam and AIP Foundation, in addition to 1 million Helmets for Kids helmets distributed by the AIP Foundation/ AA Vietnam and the FIA Foundation beginning in 2000."

In a comprehensive helmet safety strategy, nonetheless, affordability and quality of helmets remains essential

Since the creation in 2000 of the world's first 'tropical helmet', adapted to humid and wet climates, Craft's team has challenged itself to think about the best way to increase helmet quality and use at an affordable cost

In recent years, AA Vietnam has focused on improving the quality of helmets in light of an increasing number of counterfeits appearing on the market.

"Research conducted by the AAV/AIP Foundation suggests that up to 90 per cent of helmets do not pass local safety standards," says Craft. "Work needs to be done to remove dangerous helmets from Vietnam's streets, including education for consumers and enforcement by police and regulatory authorities, but we are encouraged by the steps that have been taken."

AUTO #32 Q3 2020



FRONT

FORCES REPORT

STORY

he UN's vouth actio Road safety's young advo

INSIDE THE FIA FAMILY	FIN LAF
AA Vietnam	Trac
& Vietnamese	mot
Motorsport	safe
Association	adv

P84

P85

Thanks to an upcoming initiative in collaboration with FIA and its club network, the Protec laboratory plans to develop an affordable ECE 22.05 standard motorcycle helmet as well as a new Star Rating system so that it could serve as an FIAcertified testing facility and assess helmets in the Asia-Pacific region.

While the motorcycle remains the most common mode of transport on Vietnam's roads, the country's fast-growing middle class is increasingly embracing car ownership. Between 2016-18, 300,000 new cars were registered per year

"We feel that it is imperative to support the government as it aims to develop safe road systems across the country, which protect all road users, pedestrians, cyclists, motorcyclists and passengers."

He believes a road system focused on safety for all road users can contribute to prosperity and life eniovment.

"Smart urban mobility will not just improve roads, but other success indicators of a city. With

"While the journey to school is often a dangerous one for far too many of the world's children, the pandemic has forced a rethink of how to incorporate safety into many areas, including public transport and road safety, which previously were accepted as a status quo." Ultimately, AA Vietnam's

contribution to society provides an example of what is possible when a dedicated government, NGOs, and public and private partners work together towards a common obiective

"AA Vietnam and AIP Foundation have worked with government, corporations and civil society organisations to implement life-saving interventions and protect society's most vulnerable from road crashes and its consequences," says Craft. "Our goals for the future are driven by optimism of the huge role and benefits that ongoing motorisation will bring to societies.

Besides road safety, AA Vietnam and the AIP Foundation have made a positive impact in other areas of society as well, such as health and



a safe journey to school, children's' access to education increases. A safe journey also saves the country costs in medical care and lost labour output," adds Craft, "With improved sidewalks, families are encouraged to walk or cycle, which contributes to a healthy lifestyle and decreases carbon emissions."

To ensure that children have safe journeys to school. AA Vietnam recently partnered with the FIA Foundation, UNICEF and the Child Health Initiative to develop a Guidance on Safe and Healthy Journeys to School during the pandemic and beyond.

gender equality - 90 per cent of AA Vietnam and AIP Foundation management are women, including AIP Foundation CEO Mirjam Sidik.

Such 'global social vision', allied to a plan of action and multisectoral cooperation, and - above all - supported by political courage and commitment can only lead to lasting success.

'It is imperative to support the government as it develops safe road systems' **VIETNAMESE MOTORSPORT ASSOCIATION -**Sporting responsibility



With a female workforce participation rate of 48 per cent, Vietnam is the Asian leader in gender diversity. Women fill 22 per cent of senior leadership roles, hold 25 per cent of CEO and board-level positions, and own 30 per cent of enterprises at the most recent count. Thi Quy Phuong Nguyen, President of the recentlyestablished Vietnamese Motorsports Association (VMA), makes no exception to this trend.

"With my new position as VMA Executive President, I find that I have more advantages than challenges," she says. "The VMA team is full of voung, enthusiastic women. This is not only an inspiration for the motor sport community in Vietnam, but has also fostered the active engagement of women in motor sport."

Passion and dedication are core values of the VMA, formed in 2018 thanks to the joint effort of a variety of stakeholders.

"Before 2010, there were no legal guidelines and regulations for motor sport in Vietnam," Nguyen explains. "Competitions were being held outside the law or called 'driving skills competitions'. Thanks to the enthusiastic, thoughtful and professional guidance of Motorsport Australia, the VMA was able to take its first confident step into the world of motor sport."

In 2018, the club was recognised by the Ministry of Culture, Sports and Tourism as the only Vietnamese body volunteers and officials.

responsible for organising motor sport races in the country and, after one year of active engagement, it became an official member of the FIA. Then in 2020, the Ministry of Home Affairs appointed the VMA as the National Sporting Federation, responsible for managing all legal motor sport activities in Vietnam.

"In just two years the VMA has actively developed motor sport activities in Vietnam," says Nguyen. "These include organising the first official national motor sport competition - the AUTO Gymkhana Championship - and forming a professional licensing structure. granting licenses for the 32 first Vietnamese drivers, as well as organising activities that connect national club members."

The club's chief goal in 2020 has been restarting motor sport activities post-COVID, with a special focus on grassroots motor sport.

"Motorkhana [Gymkhana], Go-Kart and E-Motorsports are our priority choices in this first phase as they do not require a high level of participation and training ground conditions," says the president. "Over the past five years, a certain number of clubs and drivers have gathered and generated a young and dynamic motor sport community in Vietnam."

Unlike other popular sports, motor sport is relatively new to Vietnam and requires specific skills, especially in

been trained and certified by quarter of 2020, the VMA has

major objective

Safety Campaign.





"Thanks to the efforts of the Standing Committee of the Executive Boards of the VMA, motor sport is gradually becoming a favourite sport for car owners in big cities," says Nauven. "As a result, the VMA database recorded more than 4,000 profiles and over 1,000 officials have Motorsport Australia, our FIA Region II Training Provider. As of the third admitted three more affiliated clubs." Helping young people to get involved in motor sport is another

"We have supported two junior go-kart drivers, Pham Hoang Nam and Bui Duc Minh. After being granted an International Go-Kart License Grade C, Pham Hoang Nam has become the first Vietnamese driver qualified to compete in the FIA Karting Academy Trophy 2020.." In a bid to help young drivers the club has made great efforts to find partners to operate driver-training centres, such as the Vietnam Racing Academy (VR), which was recently established in Ho Chi Minh City. Besides motor sport, the VMA is committed to social responsibility. promoting and raising awareness on education in mobility and road safety. Over the last two years it has successfully organised events as part of the FIA's #3500LIVES Global Road

In March 2019, the club hosted the campaign's launch event in

Hanoi, with FIA President and UN Special Envoy for Road Safety Jean Todt receiving a baton symbolising the Vietnamese government's commitment to tackle the road safety challenge

Then in April, 10,000 bike helmets were donated to students in Hanoi with the support of the Vietnamese Sporting Community during the 'Ultimate Technology – Absolute Safety' event organised by the VMA and attended by Jean Todt and UNDF Goodwill Ambassador and actress Michelle Yeoh.

Another major road safety event, attracting over 10,000 participants,



took place in Vietnam's capital, where a round table discussion was centered on traffic safety.

More than 500 Vinschool parents and students joined Michelle Yeoh for a traffic safety education programme. During the event, representatives of the National Traffic Safety Committee Office and the Vietnamese Motorsports Association signed a coordination agreement on the implementation of the #3500LIVES programme in Vietnam.

COMMUNITY WORK

In addition, the club is proud of its contribution to the Traffic Safety Day in mountainous northern Vietnam. held last December as part of the #3500LIVES campaign and in collaboration with the National Traffic Safety Committee.

"In order to raise awareness of traffic safety with ethnic minorities the event consisted of various practical activities such as safe driving skill competitions and parades to communicate the FIA campaign's golden rules," says Nguyen. "Some 2,000 local participants attended the event and

> The VMA has actively promoted road safety with the suppor of the FIA and President Jean Todt.

the VMA handed over 5,000 helmets, especially designed for married Thai women to cover their hair buns (a ritual of ethnic Thais), thus ensuring safety as well as preserving the uniqueness of Thai culture."

Promoting road safety through motor sport is the VMA's ultimate goal, according to Nguyen.

"The VMA wishes to attract as many participants as possible through motor sport because if one practices motor sport, they will be equipped with safe driving skills," she says. "This is not only a crucial goal for the VMA but also of significance to Vietnamese society."

Recently the VMA worked with the Ministry of Information and Communications and Vietnam Post to issue one million stamps of four of the #3500LIVES Golden Rules (Never Drink and Drive, Buckle Up, Wear a Helmet, Use a Child Safety Seat), with the goal of delivering the safety message via letter to as many recipients as possible.

Due to the pandemic, many of the club's motor sport activities had to stop and events such as the FIA Regional Congress and the final round of AUTO Gymkhana Championship were postponed. Nonetheless, the VMA has continued to connect with its members.

"During the pandemic, the VMA joined the disease prevention process by donating 240 Essilor goggles sent by the FIA Medical Commission to doctors at Vinmec International Hospital and 108 Military Central Hospital.

Thanks to its collaboration with ministries, the National Traffic Safety Committee and Vietnam Post along with national media, the club has spread its campaigns as well as the FIA's values among leaders, government and other stakeholders.

The support received from ASNs in the Asia-Pacific Region, as well as FIA experts and technical teams, was essential, according to Nguyen, for the VMA to start building a road safety culture in Vietnam and developing a stronger ASN.

"The VMA has contributed to a firm foothold of motor sport in the country," she concludes. "In the next 10 years, we will become one of the most prestigious national sporting federations helping to lead public awareness activities and support national authorities in developing safer and more civilised mobility in Vietnam." •

President Thi Quy Phuong Nguyen has helped the VMA achieve many goals in its first two years

/ 2020

P86

Miller

RACING TOWARDS SAFETY

FIA investigations into Romain Grosjean's fiery crash in Bahrain have already begun, and it's simply a continuation of decades of relentless safety improvements dating back to the earliest days of top level motor sport...

(08)

When Haas' Romain Grosjean arrowed off the track and speared the barriers at the 2020 Bahrain GP it was perhaps the sternest test of FIA safety measures for many decades. Yet despite the shock fire that resulted from the crash, the Frenchman emerged largely unscathed. His remarkable escape is the result of an unrelenting drive to make the pinnacle of motor sport the safest possible racing environment - a quest that stretches back to the early years of the sport. The improvements are often incremental, but here are some of the majo steps forward taken over seven decades.

1950 MARSHALS

Marshals have been used ever since the formation of the FIA Formula 1 World Championship in 1950. They are rigorously trained and are often the first to tend to incidents on-track.

1952 HELMETS

Drivers tended to race with simple cloth caps and eye goggles in the early days of the championship, but proper helmets became mandatory from 1952. The full-face helmet was introduced in 1968. and used by the entire arid by 1974

SIX-POINT HARNESS After recommending drivers wore full seatbelts in 1968 the FIA made the use of six-point harnesses mandatory from 1972.

1972

1975 **RACE SUIT STANDARDS** For the 1975 Formula 1 season the FIA introduced crucial standards for fire

McLaren became the first team to pioneer an all-in-one carbon fibre resistance in race suits. survival cell on its cars in 1981. In the decades since the survival cell been

1993 SAFETY CAR

Although F1 first used a safety car at the 1973 Canadian Grand Prix The FIA introduced it the race weekends on a permanent basis in 1993. helping to neutralise races after incidents

IMPROVED SIDE IMPACT PROTECTION In 2014 an advanced side

impact protection system was put in place offering stronger design. Structures either side of the car and in testing were able to absorb nearly 40kJ of energy, in both normal and oblique

CLOTHING STANDARD

Protective clothing requirements became more stringent for the 2020 season, improving exposure to heat by 20% in relation to the previous **FIA Protective Clothing** standard

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1994 **TRACK AND BARRIER CHANGES** In the wake of Avrton Senna's death at Imola. F1 took a stricter approach

to track layouts, and the standard for safety barriers was improved to better dissipate energy in impacts

VIRTUAL SAFFTY CAR

Following the ultimately

fatal crash for Jules Bianchi

at the 2014 Japanese Grand

Prix, the FIA introduced a

range of safety measures.

2015 introduction of the

VSC which sets a minimum

time allowed for each lap.

forcing drivers to slow.

chief among which was the

2015

1000 WHEEL TETHERS

2016

Wheel tethers were introduced in 1999. ensuring wheels did not break free in the event of an accident. The number of tethers has been increased from one to three per wheel. Energy absorption has increased more than five times since 2005.

HIGH-SPEED CAMERA

F1 cars were fitted with

high-speed cameras -

filming at 400 frames

at the drivers head at

all times, allowing for a

better understanding of

incidents.

per second - that point

2003 HANS DEVICE

The Head and Neck Support (HANS) device limiting head movement to prevent severe injuries was made mandatory for the 2003 season in 2007. the FIA made a HANS-type device an obligation for the majority of FIA-sanctioned series

F1 HELMET VISOR PANEL REINFORCEMENT Following a near fatal head

2011

injury for Felipe Massa in 2009, the FIA introduced a Zylon panel to increase the strength of the shell immediately above the visor opening and increase protection below the top edge of the visor opening.

2014

rigorous tests

CARBON FIBRE

SURVIVAL CELL

constantly updated and

improved by the FIA with

IN-EAR ACCELEROMETER The FIA introduced a new in-ear accelerometer to gain data on G forces and head movement in the event of crashes.

impact directions.

2020 **NEW PROTECTIVE**

One of the other

safety advances was the introduction of the Halo cockpit protection device in 2018. It has since become mandatory in all FIA single-seater championships

2018

HALO

2018 **BIOMETRIC GLOVES**

Biometric gloves were introduced alongside the Halo, fitted with sensors that transmit a driver's heart rate and blood oxygen levels to the Medical Car at all times. giving medical staff greater information and more targeted response.

SAFEST EVER HELMET

A new helmet standard was

made mandatory for 2019.

Visor opening lowered by

10mm. advanced ballistic

(against projectiles up to

225g travelling at 250kph).

increased by 12% and 20%

for medium and large size.

protection introduced

Energy absorption

2019

201/

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Talk to Tim

Miller's Tim Nagle and his team, work with a broad range of FIA members, from suppliers, manufacturers, teams and their drivers or riders, to championship and event organisers.



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