

THE OFFICIALS NEWSLETTER

2021 FORMULA 1 ARAMCO UNITED STATES GRAND PRIX

RANDOM RAMBLINGS by Lynne Huntting

Friday was hot with moderate humidity. Shade was at a premium and to be treasured. The Marshals had their morning muster in their area with breakfast, and then dispersed to their respective team meetings before being shuttled to their posts. Marshals were on their feet for entire sessions - no sitting anywhere. In the Pit Lane there's no sitting even between sessions. Fortunately the Pit/Paddock/Grid crew is larger this year and they can rotate shifts. They have 43 in total, with eight in the Support Paddock and the rest in the Pit Lane, and never the twain shall meet. Bubbles, you know. All the PPG marshals in the Pit Lane must wear helmets for safety, as well as headsets for communications, and a special orange neon hat for identification. This plus their PPG tabard and two different wrist bands allowing them access in Pit Lane. The marshals say there are more people in the Pit Lane area this Friday than there is on a usual Saturday. This keeps the PPG marshals busy, keeping the strict F1 schedules for access, gate closures, etc.

The other marshals in the Pit Lane, the Scrutineers, aren't allowed in the garages this race due to Covid, so their tasks are a little more challenging. The Tire Monitors have to depend on the teams to bring the tires to them.

The Starters stay in their stands except when rotating or resting. Something new for the COTA starters this year happens on Restarts. Formerly, the Race Director, Michael Masi, would tell them Go Green when the cars came around Turn 20 and were in sight of the Starter Stands. This year he tells them Go Green when the cars are in Turn 19.

Out on the corners it was business as usual. There was some excitement on Turn 12 two minutes into the first F1 practice. Fernando Alonso stopped hazardously and there was a Red Flag to retrieve him. So the marshals had some retrieval and recovery practice while Alonso was whisked away by MotoTaxi. Also happening out near Turns 3-4 Friday morning was the shooting of a new Netflix reality show on F1. No other details are known … yet. Meanwhile, the drivers were busily testing track limits in Turns 9 and 19. They had been warned before the session about lap times being deleted if limits were exceeded. Masi confirmed in his event notes for the COTA race, that starting this weekend that lap times set by drivers who run through a double waved yellow flag sector of a track will be automatically deleted. Previously this was left up to stewards to judge whether a driver had sufficiently slowed or gained an advantage.

In the first practice session, at least 23 times drivers exceeded limits. Twice the driver had just gone P1 and had the time deleted - Daniel Ricciardo and Lewis Hamilton. Valteri Bottas was fastest, followed by Hamilton and Max Verstappen. In the second session, they were still at it driving wide - at least 28 times. Frequent Offender was Yuki Tsunoda.

The F4 Series was also taking the track limits seriously. They have assigned Judges of Fact around the course on each station and in the Pit Lane. Among the judges are Scott Goodyear, former IndyCar driver who now is the F4 Race Director, and Sydney Davis Yagel, SCCA Pro Racing General Manager. Exceeding Track Limits is not protectable.

The Miami Grand Prix advance team is onsite this weekend. A nice chat with Ashley Davies of Australia and AGP is now with MGP. Marshal and Race Officials registration for the Miami F1 race will be on Motorsports Reg, and should be open next month or so. Stay tuned! The organization will be using local emergency, fire and medical personnel, but all the volunteer marshal teams currently used at COTA will be used in Miami.

F4 USA Championship had one practice session Friday and Jason Alder of the US was fastest at 2:17.513. There were 33 cars on track, with 23 of the drivers being from the US. Several were from Canada and Mexico, and other countries represented include Brazil, Spain and Sweden. The F4 drivers qualify Saturday morning and have their first race Saturday afternoon.

The W Series had two sessions Friday. Jamie Chadwick of England was the fastest at 2:06.429 in the first session. Eighteen drivers competed, and one is from the US - Sabre Cook from Colorado. The second session hadn't completed when we went to print. The W Series has qualifying Saturday morning and its first race Saturday afternoon.


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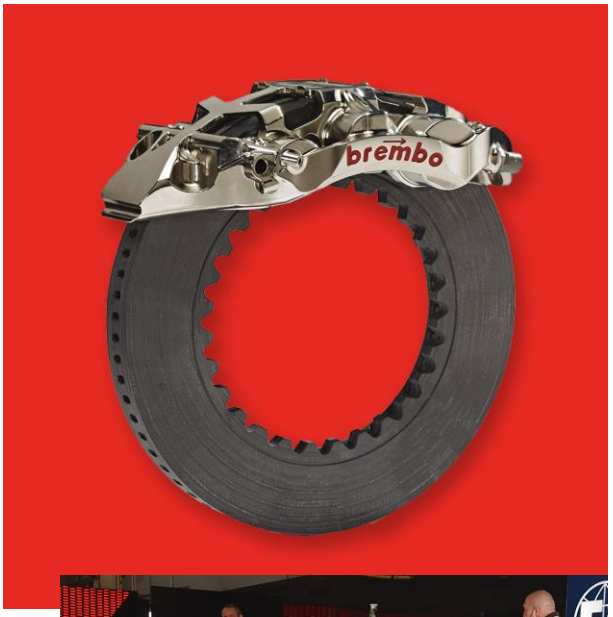
COURSE

BRAKING



After a year off, Formula One crosses the Atlantic Ocean once again for the 42nd US Grand Prix, the 9th on the Austin track. The single-seaters take 30 seconds less per lap than the motorcycles since they can do most of the bends at a higher speed, without even touching the brakes at times.

According to Brembo technicians, the Circuit of the Americas is classified as a track with a medium level of difficulty for brakes. On a scale of 1 to 5, it is rated 3 on the difficulty index, the same as the rating for the MotoGPs even if the brakes are used differently, both on each corner and throughout the entire Grand Prix.

Brembo carbon doesn't melt at 3,000°C (5,430°F). Carbon discs were first used in Formula 1 in the 1980s, before spreading to other motorsport competitions. Indeed, no other element offers that special combination of light weight, high thermal conductivity and absence of dilation, even at 1,000°C (1,832°F), that distinguishes Brembo's F1 discs. The density of carbon is 1.7 grams (0.06 oz) per cubic centimeter, compared with 7.8 grams (0.28 oz) for steel and 7.3 grams (0.25 oz) for gray cast iron. Its coefficient of thermal expansion is one-fifteenth of steel and one-eleventh of cast iron. The melting point of carbon is higher than 3,000°C (5,430°F), compared with the 1,200°C (2,190°F) of cast iron and 1,800°C (3,270°F) of steel.



There are 9 braking points on each lap. The hardest breaking point on the circuit is turn 12. Typical entry speed is 332 kph (205 mph). In a stopping distance of 120 m (394 ft), an exit speed of 95 kph (60 mph) is achieved in 2.38 seconds. This requires a maximum pedal load of 183 kg (404 lbs) and results in a maximum deacceleration of 5.6 G. *Article source Brembo (www.brembo.com)*

In a related story on brakes, Amazon Web Services (AWS), has been introducing six new F1 Insights throughout the 2021 season, beginning with Braking Performance which was introduced at the April 16-18 Italian Grand Prix at Imola. F1 Insights provide fans the data and analysis they need to interpret driver and team race strategy and performance. More than 300 sensors on each race car generate more than 1.1 million data points per second that F1 transmits from the cars to the pit and onto AWS for processing.

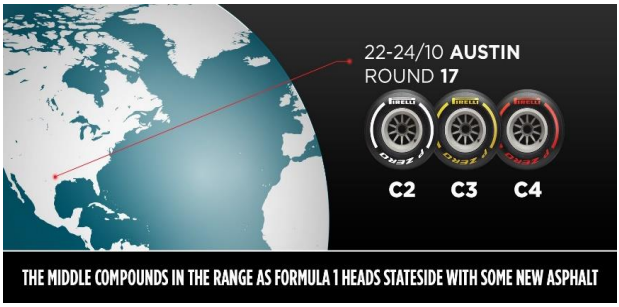


The F1 Insight Braking Performance, shows how a driver's braking style during a cornering maneuver can deliver an advantage coming out of the corner. When executed well, braking optimizes a car's speed through the phases of cornering and enables the driver to gain a better position on the track.

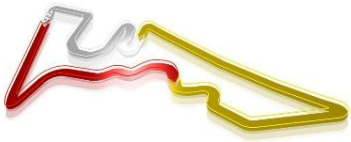
This stat displays and compares drivers' braking styles and performance by measuring how closely they approach the apex of a corner before braking. In addition, it will show the key performance metrics that lead to how the car and driver perform together when cornering, such as top speed on approach, speed decrease through braking, the braking power (KWH) utilized, and the immense G-forces drivers undergo while cornering. Braking Performance builds on the existing Corner Analysis statistic, which shows how cars physically perform while cornering. *Arrticle source AWS*

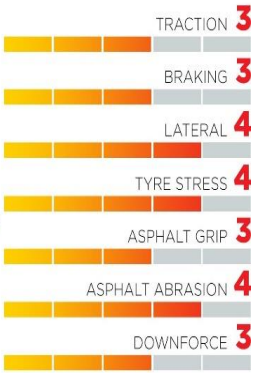
TIRES

Following a year out due to the Covid-19 pandemic in 2020, Austin returns to the Formula 1 calendar this year with a slightly new look. During 2020, the track underwent a partial resurfacing, involving around 40% of its total length. Although the roughness of the new asphalt has not been measured yet, Pirelli has confirmed the same nomination as two years ago in Austin based on the available data, with the three compounds in the middle of the range: C2 as the White hard, C3 as the Yellow medium, and C4 as the Red soft.



These tires are well-matched to the wide range of demands imposed by the famous Texan circuit. The track contains a bit of everything, with the layout having been inspired by different corners from some of the most famous tracks in the world. The weather in Texas at this time of year can be unpredictable. The selection of compounds chosen is consequently quite adaptable to a wide variety of temperatures, although this year's race is being held earlier in the season than last time.





The circuit has been resurfaced in quite few places: the start-finish straight (including the pit lane exit) to the exit of Turn 1, the exit of Turn 9 through to Turn 10, the exit of Turn 11 through to Turn 12, and Turn 15 through to Turn 19. Some depressions in the asphalt (between Turn 2 and Turn 3, as well as near Turns 4, 6, 10 and 14) have been fixed using a "milling" process, to make the surface more even.

The track hasn't been used extensively recently, which should lead to quite a 'green' track at the beginning of the weekend. However, Formula 4 and W series are on the menu so this means a high degree of track evolution as more rubber is laid down.



One of the most unusual features about COTA is the distinctive Turn 1, which is an uphill left-hand hairpin. This makes it quite hard to judge the braking point: especially at the start. Austin is one of the most demanding tracks of all in terms of lateral energy, with several high-speed corners between 250 - 270 kph in sector 1.

The winning strategy in 2019 was a two-stopper (medium-hard-medium) from Mercedes driver Valtteri Bottas, while his team mate Lewis Hamilton finished second with a medium-hard one-stopper. All three compounds played an important role during the race.



Mario Isola, head of Pirelli F1 and Car Racing stated; "Although the teams have quite a lot of experience of Austin, this year they face a track that has changed a bit compared to 2019, when we last raced here. Around 40% of the track has been resurfaced but due to COVID-19 restrictions we were not able to send our personnel to analyze the new asphalt, so its characteristics are a question mark for everyone and we will only discover the final effects on tires and car performance in general when we are there. As usual, the tire nomination was done based on data obtained before the race, with the compounds in the middle of the range well-suited to the circumstances. With the championship battle so finely poised as we enter the final few races of the season, it's clear that every element of strategy will count – as we saw at the last race in Turkey." *Article source Pirelli (www.pirelli.com)*











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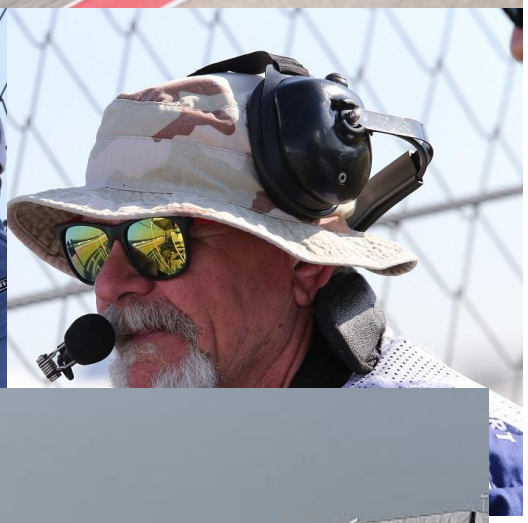



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