

## 2018 UNITED STATES GRAND PRIX

18 - 21 October 2018

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<b>From</b>	The FIA Formula One Technical Delegate	<b>Document</b>	28
<b>To</b>	The Stewards	<b>Date</b>	20 October 2018
		<b>Time</b>	20:00

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### Technical Delegate's Report

#### **Before the third free practice session:**

An engine oil sample was taken from car number 08.

#### **During the third free practice session:**

The tyre starting pressures of all cars during P3 were checked.

The instantaneous fuel flow of all cars was checked.

The fuel flow meter calibration checksum was checked on all cars.

#### **Before the qualifying practice session:**

An engine oil sample was taken from car numbers 33 and 27.

It was confirmed for all cars that the gear ratios used during the remainder of this Event belong to the gear ratios declared to the FIA technical delegate at or before the first Event of the 2018 Championship.

The thickness of the brake discs of all cars taking part in the qualifying session was checked.

#### **During the qualifying practice session:**

Car numbers 07, 35, 10, 08, 20, 02 and 09 were weighed.

The weight distribution was checked on car numbers 07, 35, 10, 08, 20, 02 and 09.

Car numbers 20 and 02 were checked for the following:

- 1) Bodywork around the front wheels
- 2) Front wing height and overhang
- 3) Rear wing height and overhang
- 4) Front and rear wing width
- 5) Rear wing configuration
- 6) Rear bodywork area
- 7) Rear winglet height
- 8) Stepped bottom
- 9) Diffuser height
- 10) Diffuser width
- 11) Overall height
- 12) Overall width

The profile of the in Article 3.3.2 of the 2018 Formula One Technical Regulations prescribed front wing section was checked on car numbers 20 and 02.

The minimum distance between the adjacent rear wing sections at any longitudinal vertical plane was checked on car numbers 20 and 02.

It was confirmed for car numbers 20 and 02 that any vertical cross section of bodywork normal to the car centre line and situated in the volumes defined in Article 3.5.7 form one tangent continuous curve on its external surface with a radius no less than 75mm.

The concave radius of sections of the two rear wing elements which are in contact with the external air stream was checked on car numbers 20 and 02.

The front and rear brake air duct dimensions were checked on car numbers 20 and 02.

The tyre starting pressures of all cars during the qualifying sessions were checked.

Fuel samples were taken from car numbers 35 and 55.

#### **After the qualifying practice session:**

Car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16 were weighed.

Car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16 were checked for the following:

- 1) Bodywork around the front wheels
- 2) Front wing height and overhang
- 3) Rear wing height and overhang
- 4) Front and rear wing width

- 5) Rear wing configuration
- 6) Rear bodywork area
- 7) Rear winglet height
- 8) Stepped bottom
- 9) Diffuser height
- 10) Diffuser width
- 11) Overall height
- 12) Overall width

The chassis identification transponders have been confirmed for car numbers 44, 77, 07, 03, 11, 27, 08 and 16.

The profile of the prescribed front wing section in Article 3.3.2 of the 2018 Formula One Technical Regulations was checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

The minimum distance between the adjacent rear wing sections at any longitudinal vertical plane was checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

It was confirmed for car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16 that any vertical cross section of bodywork normal to the car centre line and situated in the volumes defined in Article 3.5.7 form one tangent continuous curve on its external surface with a radius no less than 75mm.

The concave radius of sections of the two rear wing elements which are in contact with the external air stream was checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

The front and rear brake air duct dimensions were checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

A front floor deflection test was carried on car numbers 44, 05, 03 and 31.

The flatness of the reference and step plane and their position to each other was checked on car numbers 44, 05, 03 and 31.

The units locking status was checked on all cars.

The session type has been confirmed for all cars.

Software version checks have been carried out on all cars.

Chassis FIA checksum was checked on all cars taking part in the qualifying sessions.

Torque sensor software version checks have been carried out on all cars.

Torque sensor calibration checks have been carried out on all cars.

The torque coordinator demands were checked on car numbers 44, 05, 03, 31, 18, 55, 10, 08 and 14.

The torque control was checked on car numbers 44, 05, 03, 31, 18, 55, 10 and 14.

The rear brakes pressure control was checked on car numbers 44, 05, 03, 31, 18, 55, 10, 08 and 14.

The plenum temperature was checked on all cars.

The oil consumption was checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

The ES state of charge on-track limits were checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

The lap energy release and recovery limits were checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

The maximum MGU-K speed was checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

The maximum MGU-K torque was checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

The MGU-K power limits were checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

The maximum MGU-H speed was checked on car numbers 44, 77, 05, 07, 03, 11, 31, 27, 08 and 16.

Gear shift data checks have been carried out for car numbers 05, 07 and 27.

It was checked that car numbers all cars did not exceed 15000 rpm during the qualifying practice session.

The fuel pressure of all cars during the qualifying session was checked.

The logged pressure within the engine cooling system during the qualifying session was checked on car numbers all cars.

The tyres used by all drivers during the sessions today have been checked.

Fuel flow meter calibration checksums were checked on all cars.

The instantaneous fuel flow of all cars was checked.

The fuel temperature of all cars was checked.

Fuel samples were taken from car numbers 77, 07 and 03.

All the fuel samples have been checked for density and analysed by gas chromatography.

The results of fuel analyses show that the fuels were the same as ones, which had been approved for use by the relevant competitors prior to the Event.

Further the density change of the fuel samples taken today was within the permitted limits.

The engine oil samples have been analysed by FTIR spectroscopy and viscometry.

The results of the FTIR analyses show that the sampled oils were consistent with reference engine oil samples which had been approved for use by the relevant competitors prior to the Event.

The following software versions have been used by the teams during the qualifying sessions:

<b>Team</b>	<b>FIA Standard ECU system version</b>
Mercedes	SR1016
Ferrari	SR1016
Red Bull	SR1016
Force India	SR1016
Williams	SR1016
Renault	SR1016
Toro Rosso	SR1016
Haas	SR1016
McLaren	SR1016
Sauber	SR1016

All the above items were found to be in conformity with the 2018 FIA Formula One Technical Regulations.

**Jo Bauer**

**The FIA Formula One Technical Delegate**