

## 2018 RUSSIAN GRAND PRIX

27 - 30 September 2018

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<b>From</b>	The FIA Formula One Technical Delegate	<b>Document</b>	44
<b>To</b>	The Stewards	<b>Date</b>	30 September 2018
		<b>Time</b>	18:00

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### Technical Delegate's Report

#### Before the race:

Clutch paddle linearity checks have been carried out on car numbers 05 and 20.

A front wing deflection test was carried out on car numbers 77, 05 and 16.

A front wing flap deflection test was carried out on car numbers 77, 05 and 16.

A fuel sample was taken from car numbers 77, 03, 18 and 08 and analysed during the race.

An engine oil sample was taken from car numbers 77 and 18.

On the grid it was checked that all cars had fitted their tyres when the "3-Minutes" signal was given.

On the grid it was checked that the top ten cars had fitted the tyres which they had used when doing their fastest lap in Q2.

On the grid the temperature of the LHS and RHS front and rear tyre was checked on car numbers 11, 35, 55 and 09.

On the grid the minimum tyre starting pressure of the LHS and RHS front and rear tyre was checked on all cars.

#### After the race:

The following cars were weighed:

<b>Number</b>	<b>Car</b>	<b>Driver</b>
44	Mercedes	Lewis Hamilton

77	Mercedes	Valtteri Bottas
05	Ferrari	Sebastian Vettel
07	Ferrari	Kimi Räikkönen
03	RBR TAG Heuer	Daniel Ricciardo
33	RBR TAG Heuer	Max Verstappen
11	Force India Mercedes	Sergio Perez
31	Force India Mercedes	Esteban Ocon
18	Williams Mercedes	Lance Stroll
27	Renault	Nico Hülkenberg
20	Haas Ferrari	Kevin Magnussen
14	McLaren Renault	Fernando Alonso
16	Sauber Ferrari	Charles Leclerc

The steering wheel of all classified cars has been checked.

Car numbers 03 and 33 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) Skidblock thickness
- 9) Stepped bottom
- 10) Diffuser height
- 11) Diffuser area
- 12) Overall height
- 13) 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 03 and 33.

The minimum distance between the adjacent rear wing sections at any longitudinal vertical plane was checked on car numbers 03 and 33.

It was confirmed for car numbers 03 and 33 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 03 and 33.

The front and rear brake air duct dimensions were checked on car numbers 03 and 33.

The inclination, the diameter and the position of the last 150mm of the exhaust tailpipes were checked on car numbers 03 and 33.

It was checked that no classified car exceeded 60 km/h when leaving the formation grid prior to the start of the race.

The race start data of all cars have been checked.

The units locking status was checked on all cars.

The session type has been confirmed for all cars.

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

Single clutch paddle use for the race start has been checked on all cars.

The brake temperature warnings were checked on car numbers 44, 05 and 14.

The plenum temperature was checked on all cars.

The oil consumption was checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16.

The MGU-K use at the race start was checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16.

It was checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16 that the ES was not charged while the car was stationary in the pits.

The ES state of charge on-track limits were checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16.

The lap energy release and recovery limits were checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16.

The maximum MGU-K speed was checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16.

The maximum MGU-K torque was checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16.

The MGU-K power limits were checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16.

The maximum MGU-H speed was checked on car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16.

During the race it was verified for car numbers 44, 77, 05, 07, 03, 33, 11, 31, 20 and 16 that the limits for electrical power and state of charge for the MGU-K and ES were not exceeded.

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

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

Fuel flow meter calibration checksums were checked on all cars.

The instantaneous fuel flow of all cars was checked.

The total fuel mass used by every classified car during the race was checked.

The fuel temperature of all cars was checked.

A fuel sample was taken from car number 07.

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

The results of all the 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.

An engine oil sample was taken from car number 20.

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.

All car weights and the items checked were found to be in conformity with the 2018 FIA Formula One Technical Regulations.

**Jo Bauer**

**The FIA Formula One Technical Delegate**