



## 2015 UNITED STATES GRAND PRIX

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<b>From</b>	The FIA Formula One Technical Delegate	<b>Document</b>	39
<b>To</b>	The FIA Stewards of the Meeting	<b>Date</b>	25 October 2015
		<b>Time</b>	18:24

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### Technical Delegate's Report

#### Before the race:

The following parts have been replaced today after 12:55 and before the start of the race:

#### Lotus Mercedes:

Car 08: Driver's drink pump

#### Marussia Ferrari:

Car 53: Fuel chiller quick release coupling O-ring

A fuel sample was taken from car numbers 33, 13 and 12 and analysed during the race.

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

#### After the race:

The following cars were weighed:

<b>Number</b>	<b>Car</b>	<b>Driver</b>
44	Mercedes	Lewis Hamilton
06	Mercedes	Nico Rosberg
03	Red Bull Racing Renault	Daniel Ricciardo
05	Ferrari	Sebastian Vettel
14	McLaren Honda	Fernando Alonso
22	McLaren Honda	Jenson Button
11	Force India Mercedes	Sergio Perez
33	STR Renault	Max Verstappen
55	STR Renault	Carlos Sainz
13	Lotus Mercedes	Pastor Maldonado

53	Manor Ferrari	Alexander Rossi
12	Sauber Ferrari	Felipe Nasr

The steering wheel of all classified cars has been checked.

Car numbers 44, 06, 03, 05, 22, 11, 33, 55, 13 and 12 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 prescribed front wing section in Article 3.7.3 of the 2015 Formula One Technical Regulations was checked on car numbers 44, 06, 03, 05, 22, 11, 33, 55, 13 and 12.

The minimum distance between the adjacent rear wing sections at any longitudinal vertical plane was checked on car numbers 44, 06, 03, 05, 22, 11, 33, 55, 13 and 12.

It was confirmed for car numbers 44, 06, 03, 05, 22, 11, 33, 55, 13 and 12 that any vertical cross section of bodywork normal to the car centre line and situated in the volumes defined in Article 3.8.4 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, 06, 03, 05, 22, 11, 33, 55, 13 and 12.

The front and rear brake air duct dimensions were checked on car numbers 44, 06, 03, 05, 22, 11, 33, 55, 13 and 12.

The inclination of the last 150mm of the exhaust tailpipe was checked on car numbers 44, 06, 03, 05, 22, 11, 33, 55, 13 and 12.

The diameter of the last 150mm of the exhaust tailpipe was checked on car numbers 44, 06, 03, 05, 22, 11, 33, 55, 13 and 12.

The clearance between any bodywork rearward of the last 150mm of the exhaust tailpipe and its axis was checked on car numbers 44, 06, 03, 05, 22, 11, 33, 55, 13 and 12.

It was checked that no classified car exceeded 80 km/h when leaving the formation grid prior to the start of the race.

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 race.

Clutch bite point checks according to TD/017-15 have been carried out on all cars.

The start data of car numbers 06, 26, 19, 05, 07, 22, 11 and 26 have been checked.

The radio communication to all the cars has been checked.

The ES state of charge on-track limits were checked on car numbers 44, 03, 05, 22, 11 and 33.

The lap energy release and recovery limits were checked on car numbers 44, 03, 05, 22, 11 and 33.

The maximum MGU-K torque was checked on car numbers 44, 03, 05, 22, 11 and 33.

The maximum MGU-K speed was checked on car numbers 44, 03, 05, 22, 11 and 33.

The maximum MGU-H speed was checked on car numbers 44, 03, 05, 22, 11 and 33.

The ERS lap energy limits were checked on all cars.

During the race it was verified for car numbers 44, 03, 05, 22, 11 and 33 that the limits for electrical power and state of charge for the MGU-K and ES were not exceeded.

It was checked on car numbers 44, 03, 05, 22, 11 and 33 that the MGU-K was not used below 100 km/h at the start.

The ES use during pit stops was checked on car numbers 44, 03, 05, 22, 11 and 33.

It was checked that car numbers 44, 05, 22 and 33 did not exceed 15000 rpm during the race.

The fuel pressure of car numbers 44, 05, 22 and 33 during the race was checked.

The logged pressure within the engine cooling system during the race was checked on car numbers 44, 05, 22 and 33.

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.

The fuel temperature of all cars was checked.

The instantaneous fuel flow of all cars was checked.

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

Fuel system pressures of car numbers 06, 03, 26, 05, 14, 22, 33, 55 and 12 during the race were checked.

A fuel sample was taken from car numbers 44 and 03.

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.

All car weights and the items checked were found to be in conformity with the 2015 FIA Formula One Technical Regulations.

**Jo Bauer**

**The FIA Formula One Technical Delegate**