

# 2024 SAUDI ARABIAN GRAND PRIX

## 07 - 09 March 2024

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From	The FIA Formula One Technical Delegate	Document	33
To	The Stewards	Date	08 March 2024
		Time	23:15

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### Technical Delegate's Report

#### Before the third free practice session:

The spare LHS front corner of an Aston Martin Aramco Mercedes car was digitally scanned and the scanned data were compared with the team declared CAD drawings. Further the team declared CAD drawings were also compared with previously submitted versions and checked for conformance with the 2024 Formula One Technical Regulations.

#### During the third free practice session:

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

The fuel pressure of all cars during the second free practice session was checked.

The logged pressure within the engine cooling system during the second free practice session was checked on all cars.

The engine high rev limit bands were checked on all cars.

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

The instantaneous fuel mass flow of all cars was checked.

The partial load fuel mass flow of all cars was checked.

The fuel temperature of all cars was checked.

The plenum temperature of all cars was checked.

The IVT temperatures were checked on all cars.

The ES state of charge on-track limits were checked on all cars.

The lap energy release and recovery limits were checked on all cars.

The MGU-K power limits were checked on all cars.

The maximum MGU-K speed was checked on all cars.

The maximum MGU-K torque was checked on all cars.

The maximum MGU-H speed was checked on all cars.

The MGU-K power model was checked on all cars.

The ES power model was checked on all cars.

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

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

The SECU custom software versions were checked on all cars.

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

An engine oil sample was taken from car number 01.

#### **Before the Qualifying practice session:**

A fuel sample was taken from car numbers 16, 31 and 23.

An engine oil sample was taken from car numbers 16 and 23.

It was confirmed for all cars that the gear ratios used during the remainder of this Competition belong to the gear ratios declared to the FIA technical delegate at or before the first Competition of the 2024 Championship.

The thickness of the brake discs of car numbers 01, 38, 10, 02, 22 and 20 was checked.

#### **During the Qualifying practice session:**

Car numbers 01, 11, 63, 44, 16, 38, 31, 10, 23, 03 and 20 were weighed.

The weight distribution was checked on car numbers 01, 11, 63, 44, 16, 38, 31, 10, 23, 03 and 20.

The uppermost rear wing element adjustable positions were checked on car numbers 38, 02, 03 and 77.

The minimum distance between the adjacent rear wing sections at any longitudinal vertical plane was checked on car numbers 38, 02, 03 and 77.

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

### **After the Qualifying practice session:**

Car numbers 01, 11, 63, 44, 16, 81, 04, 18, 14 and 22 were weighed.

The following aerodynamic component or bodywork areas were checked on car numbers 63, 04 and 22:

- |                            |                     |
|----------------------------|---------------------|
| - Floor Body               | - TR Article 3.5.1  |
| - Floor Fences             | - TR Article 3.5.2  |
| - Floor Edge Wing          | - TR Article 3.5.3  |
| - Nose                     | - TR Article 3.6.1  |
| - Forward Chassis          | - TR Article 3.6.2  |
| - Mid Chassis              | - TR Article 3.6.3  |
| - Mirror Housing           | - TR Article 3.6.4  |
| - Sidepod                  | - TR Article 3.7.1  |
| - Coke Panel               | - TR Article 3.7.2  |
| - Engine Cover             | - TR Article 3.7.3  |
| - Front Wing Endplate body | - TR Article 3.9.2  |
| - Front Wing Tip           | - TR Article 3.9.3  |
| - Front Wing Diveplane     | - TR Article 3.9.4  |
| - Front Wing Endplate      | - TR Article 3.9.5  |
| - Rear Wing Profiles       | - TR Article 3.10.1 |
| - Pylons                   | - TR Article 3.10.2 |
| - Rear Wing Beam           | - TR Article 3.10.3 |
| - Rear Wing Endplate Body  | - TR Article 3.10.4 |
| - Rear Wing Tip            | - TR Article 3.10.5 |
| - Rear Wing Endplate       | - TR Article 3.10.7 |

The uppermost rear wing element adjustable positions were checked on car numbers 01, 11, 63, 44, 16, 81, 04, 18, 14 and 22.

The minimum distance between the adjacent rear wing sections at any longitudinal vertical plane was checked on car numbers 01, 11, 63, 44, 16, 81, 04, 18, 14 and 22.

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 all cars.

The engine high rev limit bands were checked on all cars.

Fuel flow meter calibration checksums were checked on all cars.

The instantaneous fuel mass flow of all cars was checked.

The partial load fuel mass flow of all cars was checked.

The fuel temperature of all cars was checked.

The plenum temperature was checked on all cars.

The IVT temperatures were checked on all cars.

The ES state of charge on-track limits were checked on all cars.

The lap energy release and recovery limits were checked on all cars.

The MGU-K power limits were checked on all cars.

The maximum MGU-K speed was checked on all cars.

The maximum MGU-K torque was checked on all cars.

The maximum MGU-H speed was checked on all cars.

The MGU-K power model was checked on all cars.

The ES power model was checked on all cars.

The torque coordinator demands were checked on all cars.

The torque control 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 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 rear brakes pressure control was checked on car numbers 01, 11, 63, 44, 16, 38, 81, 04, 18,

14, 31, 10, 23, 02, 03, 22, 77, 20 and 27.

The steering wheel of all cars has been checked.

It was verified on all cars that the PCU dash board display configuration was not changed.

Custom software version checks have been carried out on all cars.

SECU software version checks have been carried out on all cars.

Cold tyre pressures were checked on car numbers 44 and 16.

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

A fuel sample was taken from car numbers 04 and 18.

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 Competition.

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

An engine oil sample was taken from car number 18.

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 Competition.

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

Team	FIA Standard ECU system version
Oracle Red Bull Racing	SR1603
Mercedes-AMG PETRONAS Formula One Team	SR1603
Scuderia Ferrari	SR1603
McLaren Formula 1 Team	SR1603
Aston Martin Aramco Formula One Team	SR1603
BWT Alpine F1 Team	SR1603
Williams Racing	SR1603
VISA Cash App RB Formula One Team	SR1603
Stake F1 Team Kick Sauber	SR1603
MoneyGram Haas F1 Team	SR1603

All the above items were found to be in conformity with the 2024 FIA Formula One Technical Regulations.

**Jo Bauer**

**The FIA Formula One Technical Delegate**