The Best use of Tires by Ayrton Senna

The tire is a fundamental part of the car's performance. All of the setups made to the suspension has the objective of perfecting its functioning and performance and no decision about the machine is taken without consensus among the driver, the technical director, the sporting director, and a representative from the tire manufacturer.

To work perfectly, the tires must have the correct tire pressure as even a minuscule variation of 0.1 bar upward or downward can diminish performance. In the case of rain however, tire pressure is increased so that the water flows more easily through the special tire tread.

The care taken with the pressure is not only to keep the structure of the tire rigid but also to maintain the ideal temperature of the tire compound, which should be reached, but never passed, in order to maintain grip. Control is made at each pit stop with the temperature measured at the centre and the two edges of the tire tread, at around 1/16th of an inch of the
surface.

The temperature measurements in different points and in two sets, provide data about tire behaviour and require correct adjustments to the car by the technicians.

The correct the set of tires and suspension varies in accordance with the moment of the Grand Prix. While the suspension is set up so that the tires reach their ideal temperature on the first lap. Of course if the tire reaches this state, it means that all the work of the technicians in the days prior has been in vain. It can also mean that the driver doesn't know how to use his tires correctly perhaps because he was involved in too intense a duel in the first laps when the car was full of fuel and heavier. A good driver would never commit such a grave tactical error in a race. of qualifying creating faster wear, the harder compounds used in the races can last for almost 200 miles.

For the qualifying, the tires should be warmed up on the track in order to reach ideal temperature and balance – for this reason recently changed tires are often referred to as "cold" tires. If tires are not warmed up on the first lap, the driver's fastest lap in the qualifying will be compromised by the loss of grip.

In the race itself, once the ideal temperature is reached, the tires begin to wear more quickly and irregularly – and this can happen even more quickly if the suspension adjustments have been incorrect. The driver should pace himself if the race permits or, in the case of a tire change, take maximum advantage of what the tires still have to offer.

The excessive use of tires above their ideal temperature will cause blisters that are visible to the driver during the race in form of irregular marks. At this point, a tire change is necessary as the tire is useless once the blisters begin to break.

Another phenomenon that occurs regularly is graining of the tire compound. This generally occurs when the track is dirty and/or the tire compounds are too hard for the track conditions. In this case, the layers of rubber begin to lose their structure and mix, causing a loss of grip and a “goose bump” aspect on the tire surface.

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