

F1 Guide (Part 3) – Pit Stops

[Intro: Cedar Falls, Car Crash]

Welcome to the Sidepodcast Guide to Formula 1.

Pit stops are a funny thing – absolutely necessary to keep the cars running for the length of the race, but ultimately a bit of an inconvenience.

The pit lane runs alongside the start/finish straight, with the entrance just before and the exit just after the line. The teams set up their garages there, with mechanics waiting to assist their team and engineers monitoring all that is happening out on track. Given the amount of people milling around the pit straight, a speed limit is imposed to try and improve safety.

The pit crew is not insubstantial. Some teams have as many as 22 people ready and waiting for each pit stop, including three on each wheel, two on the fuel rig, two with jacks, some people clearing the sidepods and the lollipop guy. In a normal racing pit stop, the car will be flagged to come into the lane via radio. It used to be that signs were held out by the pit crew over the race track, but technology has made that all but redundant. You do find the odd occasion when the radios aren't working and someone is risking their arms out on the pit wall.

Anyway, the car comes in to the pit lane and crosses a white line signalling an immediate reduction in speed. Drivers are often penalised for speeding in the pit lane. The lollipop man will be furthest away from the garage, indicating to his car where to pull in, and the driver will pull to a stop in the marked box. Immediately, the car is jacked up so that the wheels can be changed, and it will also be refuelled, and any adjustments made to tyre pressures and wing positions.

The average pit stop is probably about 6-8 seconds, and to get through the pit stop and out in front of your opponent, you probably need a 30 second advantage.

Teams can run any combination of pit stop strategies, fuelling their cars longer to run a one-stop strategy, or keeping the weight of the car down but having to stop two or even three times. There is no limit to the number of times a car has to pit, but the size of the fuel tank dictates that they must stop at least once during a race.

Sometimes, pit stops occur more often than the race engineer planned. When a car is in trouble and can manage to get back to the pit lane, mechanics can try their best to fix it and get it back out on track, albeit further down the running order. Often a car will limp into the pits and retire, if it makes it back to the garage at all.

If a driver breaks a rule, the stewards can impose a drive-through penalty which means the car has to visit the pit lane without stopping at his garage. Because of the speed limits within the pit lane, this can be disastrous.

The sport of F1 is notoriously lacking in overtaking – when it does happen it's usually quite an event – and so a lot of the jostling for position takes place in the pits. It can be based around strategy, but for those cars at the front of the grid, a good lead is essential. Each lap that you stay out longer than your opponent, will gain you a few seconds advantage. That's because you will still be running light, whilst the other driver will be full of fuel and heavier. So, of course, decisions need to be made about how heavy you will run to start with, which in turn impacts on your qualifying position as well.



It's then that you start to see what a rich tapestry the sport really is, where seemingly off-hand decisions can result in a podium position or a retirement from the race. Nowhere is this more obvious than in the pit lane.

In our fourth instalment of the Sidepodcast Guide to Formula 1, we'll be looking at how a Formula 1 car is different to that car out in your garage.

[Out: *Cedar Falls, Car Crash*]

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