



F1 Safety – Circuits

Welcome to F1 Safety – the latest mini series from Sidepodcast, focusing on the elements that make Formula 1 as safe as it can be. We've already looked at clothing and the car, now it's time to concentrate on circuits.

Although FOM, and therefore Bernie, is currently in charge of deciding which circuits should get on the calendar for each year, the FIA have plenty of say about what goes on where. Safety Delegate Charlie Whiting is sent to each circuit before a race to inspect the safety facilities and make sure it is up to scratch. So, what kind of things does a circuit need to provide in terms of safety?

Firstly, the track has a designated direction. Most of the races on the calendar travel clockwise, but a select few run anti-clockwise. This will affect which side the pit lane is in relation to the track, and how the entrance and exit is designed. Cars must only go around the track in the stated direction, even the safety and medical cars have to adhere to this, no matter how far around they have to go. There can be access roads linking sections of track to make life a little easier though.

If a driver can stick to the asphalt, all is well. Otherwise, there are various features to the area surrounding the track that are there to help. The kerbs were originally designed to make going off track safer, with the raised bumps intended to slow a car down. However, these days, drivers try and use the kerbs to make the track just that little bit wider. It might be uncomfortable, but hitting the right line could save a tenth or two each lap.

If there is no space around the tarmac, for example in Monaco or Valencia, then crash barriers are in place. There is often high fencing as well, to protect the crowd from any wayward car parts. The barriers vary from concrete to tyres, depending on if they're just lining a straight, or in a potential crash zone. Where there is room, run off areas will be introduced to allow space for a car to slow down.

Now, run off area has become quite a contentious issue in the last few years. There are two options – gravel or tarmac. Gravel is ideal for slowing a driver down, hopefully bringing the car to a stop before it hits the barriers. However, if a car rolls on the gravel, then the roll hoop can dig in and get buried. This would put weight onto the drivers' helmet which is obviously not a good situation. That's where tarmac comes in. The downside to this is that a car won't be slowed down in the same way as on gravel, and if it is a brake failure or similar cause for the accident, the car will smash into the barriers without losing speed.

At various points around the track, marshals are posted. They are there to wave flags to advise drivers of the track status and any potentially dangerous things to be aware of. They also secure accident sites, operate fire extinguishers, recover cars and clear away any debris. They are not allowed to get involved with medical procedures. This year, the marshals safety has been called into question with the introduction of KERS, with the solution seemingly to be an extra pair of rubber gloves! It looks as though this problem will go away next year, as KERS is likely to be ditched.

One of the most dangerous parts of an F1 track is the pitlane. This is the only place where cars and people, aside from drivers and marshals, interact, and speeds are reduced instantly. There's a white line on the entrance and exit of the pitlane, and this means a driver must reduce his speed to 60km/h during Free Practice, and 100 km/h during qualifying and the race. In Monaco, this is even slower due to limited space in the pitlane.

Whilst we're in the pitlane, there's a couple of things to note from a stop during a race. The fuel rigs have specially designed valves that try and limit the exposure and release of fuel and vapours to the extreme temperatures in the



air. It is oh so easy for those fumes to catch fire and a car can be engulfed in flames in an instant. There is always a fire extinguisher near by, though. The lollipop man helps guide a car to his pit box, but is also there to release the car when the coast is clear. Those rear view mirrors we discussed yesterday are not good enough for a driver to note when it's safe to move off.

There are also lights at the end of the pitlane to indicate when it is safe for the cars to move out on to the track. This can signal when a session starts and ends, they will be red if the safety car train is passing, and they will be blue if a driver is exiting his pit stop and another car is approaching out on track.

Circuits also need to provide exceptional medical facilities but we'll talk about those next time.

That's all for this episode of F1 Safety. You can let me know what you think about the state of the current circuits via email: Christine@sidepodcast.com, and join me tomorrow for the next episode.

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