



Days that Shook the F1 World (Part 4) – Ground Effects Banned, 1982

Hello everyone, welcome to Days that Shook the F1 World, a series from Sidepodcast that takes a look at some of those important days that left the sport reeling, never to be the same again. Today we're looking at the 3rd November 1983.

Whilst advocating safety at every opportunity, the majority of people involved in Formula 1 also want more speed. That's the aim of the game, after all - to maximise speed and beat your rivals because they haven't found that edge within the regulations like you have.

Ground effects was one of those things.

The basic theory behind the ground effect is to create as much downforce as possible, enabling a car to go faster around corners. By making the sides of the car as low as possible, the air pressure underneath the chassis is lower than that above, which basically glues the car to the track.

Lotus were the first team to introduce the concept to the Formula 1 back in the 1970s. They were helped along by the use of a wind tunnel, which resulted in longer sidepods and consistent ride height, creating a reasonable inverse wing effect.

This effect didn't necessarily help on the long straights, but when it came to cornering, it left the old style cars in its wake. When Lotus introduced their car in 1978, it won 8 out of 16 races, proving that the new developments would revolutionise the sport.

Other teams began to sit up and take notice and it wasn't long before the ground effects principal was becoming ubiquitous. By 1982, there were no cars without the technology. Fast races, fantastic cornering speeds, all great stuff.

Except, the cars were inherently unstable.

The forces created by the ground effects were all well and good, if the car managed to stay stuck to the circuit, but once the effect was broken, it had potentially devastating consequences. A wing would then act as a wing should, rising up and literally flying the car off the track.

It wasn't long before serious accidents started to happen. Drivers were often struggling to keep their cars on track during high speed cornering, and incident after incident culminated in the death of Alfa Romeo driver Patrick Depailler in Germany. Although a lack of safety fencing was deemed the reason for his death, there was no denying that the speed carried through the bend had something to do with it as well.

During this time, the two rival governing bodies the FISA and FOCA were at war, and ground effects was one of the big catalysts for their arguments. After Depailler's death, the FISA finally forced through a new rule, stating that, whilst in the pits, cars had to have at least 6cm of clearance between their skirt and the ground. Teams very, very quickly got around this, by running their cars close to the ground out on track, and simply raising them up on hydraulics when it came to measurements in the pits. Given the ingenuity of the teams, or the uselessness of the rule, the FISA soon revoked their ruling, and allowed skirts to return to the cars.



Big mistake.

Accidents continued to occur, and although they were excused by other circumstances, they could almost always be traced back to the lower sides on the cars. Then came the tragic death of Gilles Villeneuve, and an accident later in Germany that saw Didier Pironi break both his legs in multiple places. The cause of those accidents could not be brushed aside and it was obvious something had to be done.

In November 1982, ground effects were officially banned with a more explicit rule, stating that from 1983 flat bottoms were required for F1 cars from the trailing edge of the front wheels, to the leading edge of the rear wheels. Since then, the sport has never looked back. There's no denying the fact that it was a brilliant piece of engineering, to get the idea off the page, out of the wind tunnel and onto the cars. But the dangers and speeds involved were just too great, and there is no question that banning the principal was the right thing to do.

That's all for this episode of Days that Shook the F1 World. Please visit Sidepodcast.com to leave your comments and feedback about this and the other shows in this series.

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