

F1 Guide (Part 6) – Safety

[Intro: Cedar Falls, Car Crash]

Welcome to the Sidepodcast Guide to Formula 1.

It's all about going as fast as you possibly can and beating your opponents at all costs. But at high speeds, and with such delicate equipment, safety is an important part of the sport. From the basics of a helmet and gloves, to specifics like fireproof underwear are all there to protect the driver when things go wrong.

Your driver is sitting in the cockpit, often referred to as the tub, or survival cell. This is because the basics of a driver's survival starts here. Constructed of carbon fibre, it is both light and strong. Crash structures are built into the front and rear of the cell along with the roll hoop whose job it is to protect the driver if the car rolls, hitting the ground before the driver's helmet.

Keeping the driver in his seat is more than your average seat belt. It comprises of four belts joined by a central buckle, shoulders and hips, to ensure the driver is fixed securely. His most vulnerable part is probably the head and neck. Aptly, this is protected by then HANS system – head and neck support system. It's a device that joins the driver's torso to his helmet and it's goal is to reduce the loadings to a driver's head and neck during the rapid deceleration caused by an accident.

Moving away from the driver to the car, you'll find on each wheel a restraint system, which prevents the tyre from flying off uncontrollably. As well as protecting the driver, this also protects marshals and spectators, as do run off areas and tyre walls. These are in place for when a car loses control and leaves the track. Smashing into a tyre wall greatly reduces speed and impact, and run-off areas provide a safe haven for an out of control car.

Before a car can even take to a track, it has to pass a number of mandatory FIA crash tests. These are similar to the crash tests your average road car goes through, to ensure that the structure can absorb a certain amount of force on impact. This guarantees a minimum level of safety for the driver.

Now we understand how a driver is protected, the last thing to cover in the area of safety, is what happens immediately after an accident on track. If the accident is relatively inconsequential, marshals will be asked to wave a yellow flag, indicating that drivers must slow down around the affected area. If the accident is more serious, the safety car can be deployed. During a race, the safety car is constantly on standby. So, a car may be stranded in a dangerous position on the track, in which case a safety car will be deployed to slow down the remaining racers. With the safety car deployed and the cars slowed behind it, marshalls are able to clear an accident in relative safety so that the race can continue without further disruption. Cars remain queued up behind the safety car until stewards deem the course safe again, at which point the safety car peels into the pits and the cars resume racing when they reach the start / finish line.

Although it may seem quite a convoluted process, it's important to keep your drivers running safely throughout the season.

Having covered all the basics of Formula 1, the last topic in our series will be how you can get to a race.

[Out: Cedar Falls, Car Crash]