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Formula One Racing Cars Have Wings

Aerodynamic design is as important to Formula One racing vehicles as it is to airplanes. You might not expect a racecar to have wings but Formula One racing cars do.

An airplane is designed with wings to help it lift off the ground. The wings of an airplane are an important part of the aerodynamic design that helps it to fly. Airplane wings direct airflow around the wings and give the airplane the lift it needs to leave the ground.

Formula One racing vehicles rely on aerodynamic design to increase speeds. Millions of dollars are spent on the research and development of better aerodynamic features for the racecars. Aerodynamic design in Formula One racing focuses on developing a design that will decrease the amount of drag the car creates and while creating a downforce that keeps the car's tires on the track. Downforce aerodynamics also influence cornering ability on the track.

The first wings showed up in Formula One racing near the end of the 1960s. Early wings used in Formula One racing were movable and had high mountings. Although these wings did improve the aerodynamics of the racecar, they also contributed to major accidents. By the 1970 Formula One racing season FIA instituted regulations regarding wings for safety purposes.

During the mid-1970s engineers experimented with methods to use the low-pressure area under the car as a "ground effect" downforce. FIA rules were changed and adapted to limit the benefits of this downforce.

The more authentic information about Formula One you know, the more likely people are to consider you a Formula One expert. Read on for even more Formula One facts that you can share.

The aerodynamic force created by today's Formula One racing vehicles can be as great as three and one half times it's own weight. Theoretically, Formula One racing cars could drive upside down thanks to the downforce they create.

Formula One racing engineers continue to explore opportunities to create greater downforce without increasing drag. Today wings configuration is customized for each specific Grand Prix location. On a street race course like Monaco the team uses aggressive design and placing of wings to create maximum downforce. Success on this type of course depends on a downforce to increase the vehicle's ability to stick to the road, especially while cornering. On high-speed Formula One racing circuits the aerodynamic need is to reduce drag on the long straights. As a result nearly the entire wing is stripped from the racecar for these races.

The overall aerodynamics of a Formula One racing car are as important to winning as the wing design. Every feature of the racecar is tested in wind tunnels to determine the amount of drag and then analyzed. This allows for new designs that reduce air turbulence that slows the car. Even helmet design is based on aerodynamics. Because Formula One racing vehicles feature an open cockpit the driver's helmet creates air turbulence that slows the car. Today's helmet designers focus as much on aerodynamics as they do on safety.

The final factor in the Formula One racing aerodynamic puzzle is that engineers must make certain that the cars are not too aerodynamic. A Formula One racing engine runs at very hot temperatures. Airflow must be designed to remove the heat from around the engine and reduce heat build-up.

FIA continues to monitor the use of aerodynamic design features and wings by Formula One racing teams. Followers of Formula One racing can expect FIA to continue to make changes and additions to the regulars regarding these features as scientific advancements occur to ensure the safety of Formula One racing drivers.

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