AERO 101

Welcome to the eight segment of Aero 101. We're moving quite quickly through these! Today's subject is diveplanes/canards. These are simple aerodynamic devices usually mounted at the front of a car to help change the flow along the sides. We got some great questions in the past, let's keep them coming!

Dive planes, in their simplest form, are flat or curved plates usually inclined upwards at their trailing end. Due to their shape, dive planes shed vortices, and with the proper mounting, can form a barrier between the underside of the car and the free stream air. They are useful in shifting the aerodynamic balance of a car, although they do tend to create a bit of drag. The size of a dive plane also plays a part in determining how much downforce is created and how large the vortex that is shed. It is common to add a fence to the outside of the dive plane to help channel the air (this will also shed its own vortex and may combine with the initial vortex created by the dive plane). It is quite important to make note of where you mount your dive planes, because their wakes can impinge other aerodynamic devices, such as the rear wing. Mounting a steep dive plane too high may do this. So, to conclude, dive planes will increase front downforce at a cost of some drag and a possible decrease in rear downforce.