

Aerodynamics Facts

In order to come up with design ideas for your CO2 race car, it is important to have some background information about aerodynamics and different kinds of car racing.

Using the following web site, answer the questions below:

www.nas.nasa.gov/About/Education/Racecar/aerodynamics.html

- 1) How does the shape of an airplane wing affect the movement of air?
- 2) To produce lift on an airplane where is air pressure greater?
- 3) How is the shape of an Indy car similar to that of an airplane?
- 4) How is negative lift produced in an Indy car? (Describe with respect to air movement)
- 5) Besides the chassis, what part of an Indy car also creates downforce?
- 6) What 2 aspects of aerodynamics do engineers focus on for Indy cars?
- 7) What is the ideal situation for the wings of an Indy car? (List 2)
- 8) Which part of the race does downforce help an Indy car?
- 9) What is the kind of car racing whereby drag reduction is extremely important?
- 10) At 200 mph how much does an Indy car weigh?
- 11) What is the greatest source of drag on an Indy car? What percentage of aerodynamic inefficiency is it?
- 12) What is the top of the chassis designed to do?
- 13) What is underbody designed to do?
- 14) How is the front of the car designed to reduce drag coefficient?
- 15) What is the most efficient aerodynamic set up of a Nascar car? Describe with respect to performance on the track.
- 16) Define airflow, drag, laminar

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