

**New Directions in
Race Car Aerodynamics
Designing for Speed
Revised 2nd Edition**

by Joseph Katz, Ph.D

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320 pages, 285 photos, illustrations and diagrams

New Directions in Race Car Aerodynamics is the first book to summarize the secrets of the rapidly developing field of high-speed vehicle design. Over the past 15 years, author Joseph Katz has been involved with aerodynamic development in the most competitive areas of motorsport today.

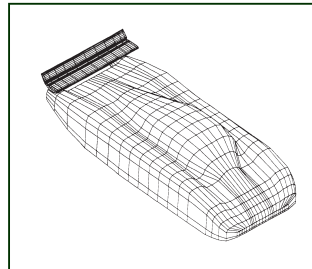
From Formula One, to Indy Car, Drag and Sedan Racing, this book provides clear explanations for both engineers who want to improve their design skills, and enthusiasts who want to understand how their favorite cars go fast.

Katz explains:

- How aerodynamics win races.
- Why downforce is more important than streamlining and drag reduction.
- Designing wings and venturis-what works and what doesn't.
- Wind tunnel designs, methods and results-what you can and cannot believe.
- Full definitions of terms, with equations and examples provided for determining key aerodynamic parameters like drag, lift and side-force coefficients, fluid viscosity, or wind-tunnel corrections.
- Numerous examples using specific race cars, passenger-based prototypes, and open-wheel designs.



Use of smoke trace for off-body flow visualization in the wind tunnel test section.



Typical application of small, flat-plate downforce devices, used on various race cars.

Table of Contents

Preface
Overview: Aerodynamics and Race Cars
Aerodynamic Forces and Terms
Airfoils and Wings
Aerodynamics and Vehicle Performance
Aerodynamics of the Complete Vehicle
Real-world Examples
Appendix 1: Drag Coefficients
Appendix 2: Wind Tunnels