

# Chapter 11 CORNERING of Your “BASIC VEHICLE”

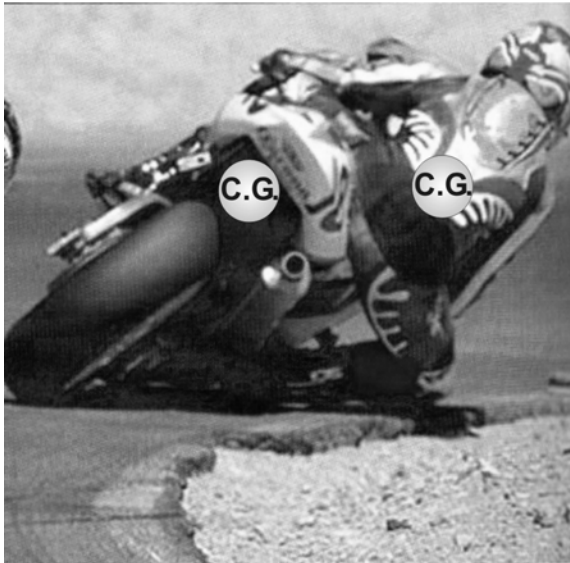


FIG. 11.1 *Basic Vehicles* do NOT include Any Changes from Rolling

This chapter contains pertinent “set up” and driving information dealing with a “Basic Vehicle”. The *Basic Vehicle* is essentially half of a 4-wheeled vehicle. Weight Transfers from side to side, and rotational change in C.Gs (see Fig. 11.1), are NOT included. There are five tech-laps in this chapter: 1. *Basic Vehicle*, 2. *Lateral Behavior*, 3. *Combined Lateral & Longitudinal Behavior*, 4. *Dynamic Factor Diagrams* and 5. *Requirements for Neutral Cornering-Behavior*. Racers can “blitz” the first short lap. Many Racers will find the *Loose vs. Push* stuff in the second lap as “key” towards understanding cornering behavior. Other racers will appreciate the *Vehicle G vs. G* stuff in the third tech-lap. The fourth tech-lap is the most difficult but “die hards” will get useful information from numerous safety tips and graphs. Most racers will get useful “set up” and safer driving hints from the graphs in the last tech – lap.

## Section Details

### 1. Basic Vehicle.

### 2. Lateral Behavior:

Tire Slip-Angles & Tire Forces, Damping-in-Sidestep, Yaw Moments, Directional Stability & Moment Control, Neutral Steer vs. “Loose” & “Plows”, Spin-Out Velocity, Lateral Force & Yaw Coupling, and Yaw Damping.

### 3. Combined Lateral & Longitudinal Behavior:

Threshold Braking, Acceleration, Total gear-ratio, and Vehicle G vs. G Diagram.

### 4. Dynamic Factor Diagrams:

Tire Factor Difference, Trimmed Vehicle, Dynamic Condition, Dynamic Factors, Rate of Change (slopes) & Magnitudes, Cornering Stability, and Tire Factor Details.

### 5. Requirements for Neutral Cornering-Behavior:

Regions of Vehicle Behavior, TWratio, and Charts for Trimming Your Vehicle.