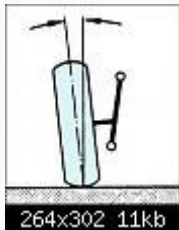


Simple Vehicle Setup Explanation (collected by taufikp/2pdf by Hazi)

I don't know if this is the right forum to post. But anyway, I love the sharing spirit we had in RSC Forum (RIP), so I'd like to share some basic setting that is often asked by people new to 'proper' race simulation. I'm not an expert at this and I found these explanations by googling and from some documents I got from rFactor1 Forum in RSC.

CAMBER

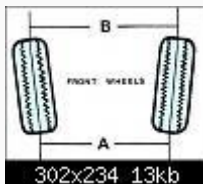
When set to negative values, the top of the tire will lean closer to vehicle body (car is viewed front-on), positive value is the opposite. The picture below is showing a positive camber.



When doing a fast & long cornering, negative camber will help the handling better, because more grip it provides. However, the ideal angle is the one that spread tire wear evenly on tire surface. The right and left camber may not have the same angle, depends on circuit characteristics. Camber values closer to zero give better grip during acceleration and braking.

TOE

Toe indicates how parallel the wheels are when viewed from above. If the leading edges of the tires are closer together (inward) than the trailing edges, it's called 'toe-in' (negative values). The opposite is called 'toe-out' (positive values). The picture below is showing toe-out.



Some vehicle allows you to set toe for front and rear wheels.

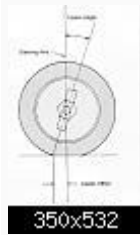
This table might help you to understand the effect of toe settings:

Front Positive:	Improves turn-in ability
Front Negative:	Decreases turn-in ability
Rear Positive:	Improves stability
Rear Negative:	Decreases stability

The downside of implementing toe (either positive or negative) is increasing tire wear and decreasing straight line speed.

CASTER

Caster refers to the angle of the steering axis away from vertical when the car is viewed from the side (see picture).



Positive value means the top of the steering axis is moving towards the driver.

More positive values:

directional stability increases, turning radius decreases, reduce understeer, may oversteer in fast corner, more steering effort

More negative values:

directional stability decreases (car is wandering in straight line), understeer increases, better stability in fast corner, less steering effort

RIDE HEIGHT

Refers to how high the vehicle chassis is above the ground. It is generally better to have the rear chassis higher than the front. If the rear is higher than the front, air flows underneath the car will speed up due to more space available at the rear. Literally sucks the car to the ground, and gives more traction.

DIFFERENTIAL LOCK

The table below should explain better.

Increase Power:

increase understeer under positive throttle (pressing throttle), more stable off the line

Increase Coast:

increase oversteer under negative throttle (depressing throttle), more stable under hard braking

Decrease Power:

increase oversteer under positive throttle, less stable off the line

Decrease Coast:

increase oversteer under negative throttle, less stable under hard braking

Preload:

Affects how quick the transition between power and coast differential occurs. If you're using preload of '1' and you slamming the throttle down (powering), it will give quick transition to whatever power value/percentage you use. The reverse would happen when taking the throttle off (coasting). Higher preload will give you more gradual/progressive transition.

STEERING LOCK

Increase value: decreasing turning circle, coarser steering control

Decrease value: increasing turning circle, finer steering control

TIRE PRESSURE

Front Increase: increase understeer, decrease grip in corner, decrease front tire wear

Rear Increase: increase oversteer, decrease grip in corner, decrease rear tire wear

Front Decrease: increase oversteer, increase grip in corner, increase front tire wear

Rear Decrease: increase understeer, increase grip in corner, increase rear tire wear

SPRING RATE

note: increase spring = stiffen, decrease spring = soften

Front Increase:

increase understeer, decrease grip in corner and bumpy roads, increase front tire wear, more responsive handling

Rear Increase:

increase oversteer, decrease grip in corner and bumpy roads, increase rear tire wear, more responsive handling

Front Decrease:

increase oversteer, increase grip in corner and bumpy roads, decrease front tire wear, less responsive handling

Rear Decrease:

increase understeer, increase grip in corner and bumpy roads, decrease rear tire wear, less responsive handling

BUMP DAMPING

note: increase damping = stiffen, decrease damping = soften

Front Increase:

increase understeer in bumpy corner, increase front tire wear

Rear Increase:

increase oversteer in bumpy corner, decrease grip on bumpy road, increase rear tire wear

Increasing Front and Rear:

reduce grip on bumpy road, unpredictable handling, increase tire wear

Front Decrease:

increase oversteer in bumpy corner, decrease front tire wear

Rear Decrease:

increase understeer in bumpy corner, increase grip on bumpy road, decrease rear tire wear

Decreasing Front and Rear:

increase grip on bumpy road, decrease tire wear

REBOUND DAMPING

note: increase damping = stiffen, decrease damping = soften

Front Increase:

increase understeer during exit and entering corner, increase front tire wear

Rear Increase:

increase oversteer during exit and entering corner, increase rear tire wear

Increasing Front and Rear:

more responsive handling, increase tire wear

Front Decrease:

increase oversteer during exit and entering corner, decrease front tire wear

Rear Decrease:

increase understeer during exit and entering corner, decrease rear tire wear

Decreasing Front and Rear:

less responsive handling, decrease tire wear

Slow damping affects the weight transfer of the car sprung mass (chassis pitch and roll) on the springs.

Fast damping controls spring's response to deflection of the car's unsprung weight (reaction of tire/wheel/hub assembly to bumps).

BRAKE BIAS

More To Front:

increase understeer while braking, increase braking distance, reduce sudden/snap oversteer, front wheels may lock up

More To Rear:

increase oversteer while braking, increase braking distance, increase sudden/snap oversteer, rear wheels may lock up

More To Center:

some oversteer while braking, decrease braking distance, may caused sudden/snap oversteer

BRAKE DUCT SIZE

Increasing the value will make your brake performance and reliability lasts longer, but decreases the possible top speed on straight track.

ENGINE BRAKE MAPPING

The engine can help slows the car down. When value is increased may decrease oversteer when the throttle is off. When value is decreased, it's the opposite, but it reduces fuel consumption. Setting it too low may cause sudden/snap oversteer when you suddenly lift in a corner.

WEIGHT DISTRIBUTION

More To Front = increase oversteer

More To Rear = increase understeer

LATERAL WEIGHT DISTRIBUTION

Some circuits may have more right hand corners than left hand corners (and vice versa), setting the lateral weight according to circuit characteristics may give you better control on those corners and also improving tire temps. 50:50 (center bias) setting is the most used in road type circuit. In oval type circuit you may experiment with lateral weight distribution more.

ENGINE REV LIMIT

Increased value = increase horsepower, increase possible top speed, higher temps, lower reliability

Decreased value = decrease horsepower, decrease possible top speed, lower temps, higher reliability

RADIATOR SIZE

Increase = causing more drag, lower possible top speed, lower engine temps, higher reliability

Decrease = less drag, higher possible top speed, higher engine temps, lower reliability