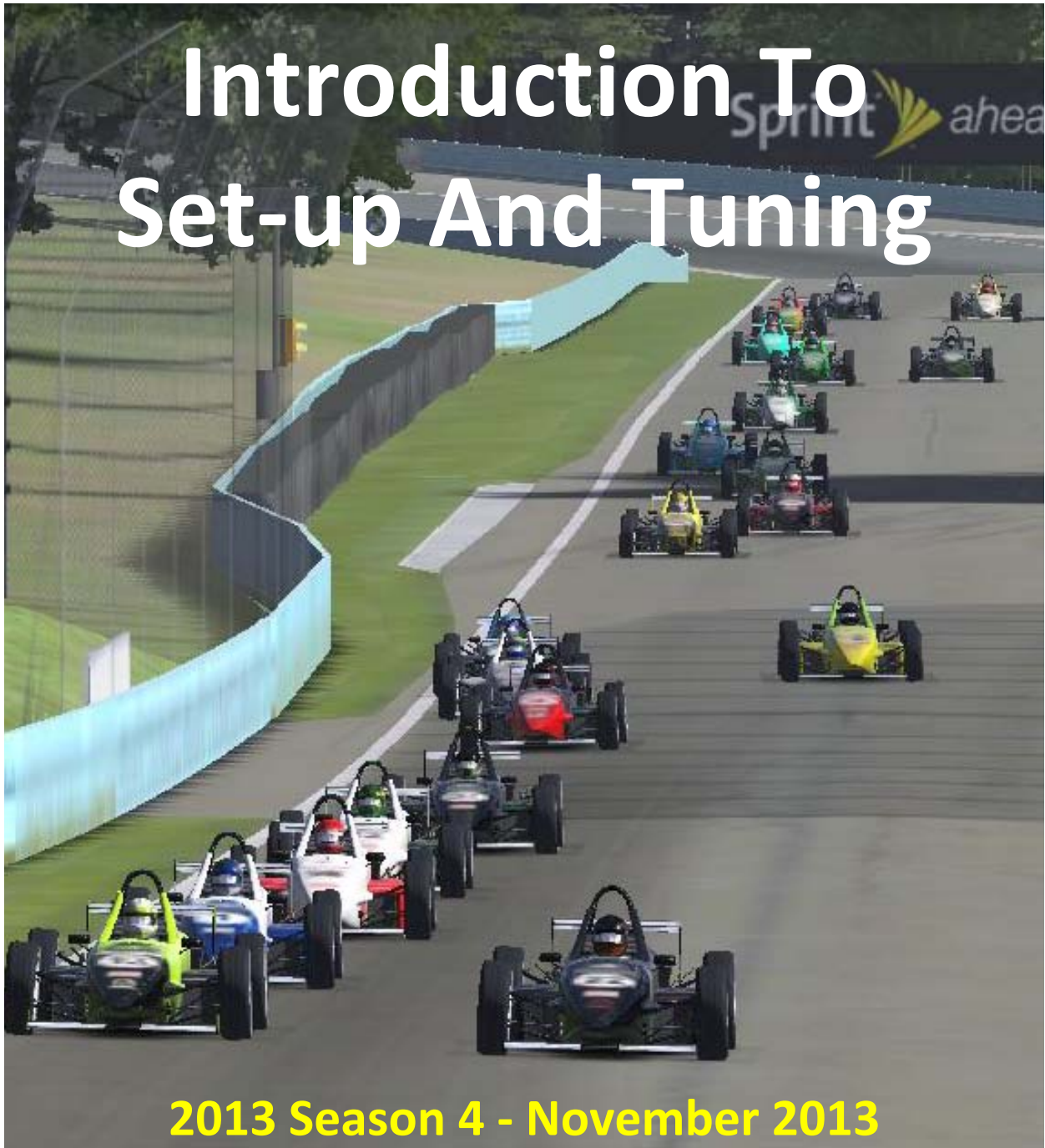


# Skip Barber Formula 2000

## Introduction To Set-up And Tuning



2013 Season 4 - November 2013



# Welcome!

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This manual is intended to give you a way to become familiar and comfortable with the set-up and tuning options for the Skip Barber Formula 2000.

At the “Rookie” level in iRacing, there are few set-up options. As a result, the Skip Barber Formula 2000 (“Skippy”) may be your first experience at car set-up and tuning. This can be frustrating for some people if they are not familiar with the different set-up or tuning options or the likely results of making certain changes or if the set-up options are not approached in a methodical way. The fact that new drivers tended to ask the same questions on the iRacing forum was a key indication that a manual such as this could fill a real need.

Since the Skippy has just six basic vehicle tuning variables, it is an excellent way to begin learning about how set-up changes will affect the drivability of a road racing car. Once you understand how to approach these six variables, you will be better prepared to focus on your driving and better prepared to deal with set-up options on other cars as well. This knowledge and experience will serve you well as you continue up the Division ladder in the Skip Barber Race Series (SBRS) or as you drive other cars.

At the same time, there are a number of drivers that migrate to the Skippy because of the amount of races (84 per week) and the number of iRacers of comparable skill levels. A tuning manual will also help these iRacers learn to tune the Skippy to extract the most from the car. This is expected to be even more true with the Skip Barber Premier Series.

Many of the best drivers in iRacing have raced in the Skip Barber Racing Series (SBRS) and many of them continue to race in the series due its level of competition and sense of camaraderie. If you ever want to learn more about the Skippy, just ask on the iRacing Forum and many well-informed people will be able to help you.

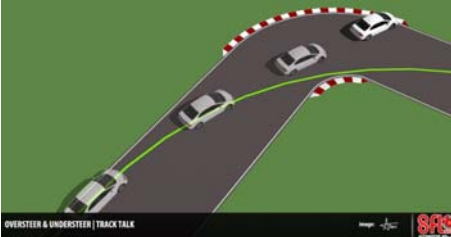
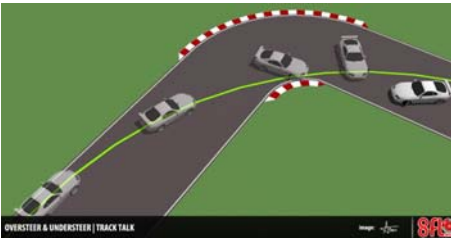


Graphics from [http://upload.wikimedia.org/wikipedia/commons/6/65/Welcome\\_differentslangs.png](http://upload.wikimedia.org/wikipedia/commons/6/65/Welcome_differentslangs.png)

# Background

Car set-up and tuning has a language all its own.

While you may already be familiar with the terminology, a key concept to understand is how to describe car behavior when cornering. Understanding and being able to communicate this will allow you to more easily diagnose and solve issues which may arise.

<p><b>Understeer</b></p>	<p>A car is said to “understeer” when the front end of the car does not react as much as the driver input would indicate it should. This is also called “push” or “tight”. This can be caused by how the vehicle was set up or can be caused by driver inputs.</p>	
<p><b>Neutral</b></p>	<p>A neutral car is one that does not exhibit understeer or oversteer.</p>	
<p><b>Oversteer</b></p>	<p>A car is said to “oversteer” when the rear of the car reacts more than the driver input would seem to indicate it should. This is also called “loose”. This can be caused by how the vehicle was set up or can be caused by driver inputs.</p>	

Graphics from <http://automotive.8flo.com/2010/06/17/oversteer-and-understeer/>

## Important Things

There are a couple of things you should think about.

First, if you are serious about Skippy racing (including time trials), there is no more important thing for you to remember than practice, practice, practice, and practice some more. It is not clear that “practice makes perfect” but practice certainly will make you better. Whether you are off on a track by yourself, in an official practice session (with other cars on the track) or participating as a “ghost racer” in a Spectator session, being out on the track will help you lower your lap times and be more comfortable with set-up choices you have made.

Second, you should think about getting a notebook or file folder or computer folder or some other way to keep track of the setup choices and other things you will learn along the way. You can save set-up choices in the iRacing garage but it can also be just as easy to write down the six settings so you can see how they can change for different tracks and change over time as your driving style progresses.

Third, don’t overlook the value of the Centripetal Circuit for getting a handle on car behavior in response to set-up changes. Knowing how “stable” a set-up is and what happens when it reaches its limits will serve you well on the race course.

Last, have fun! Races can be intense and the emotions can run high. Remember that this is recreation and an opportunity to have some fun with other like-minded people.

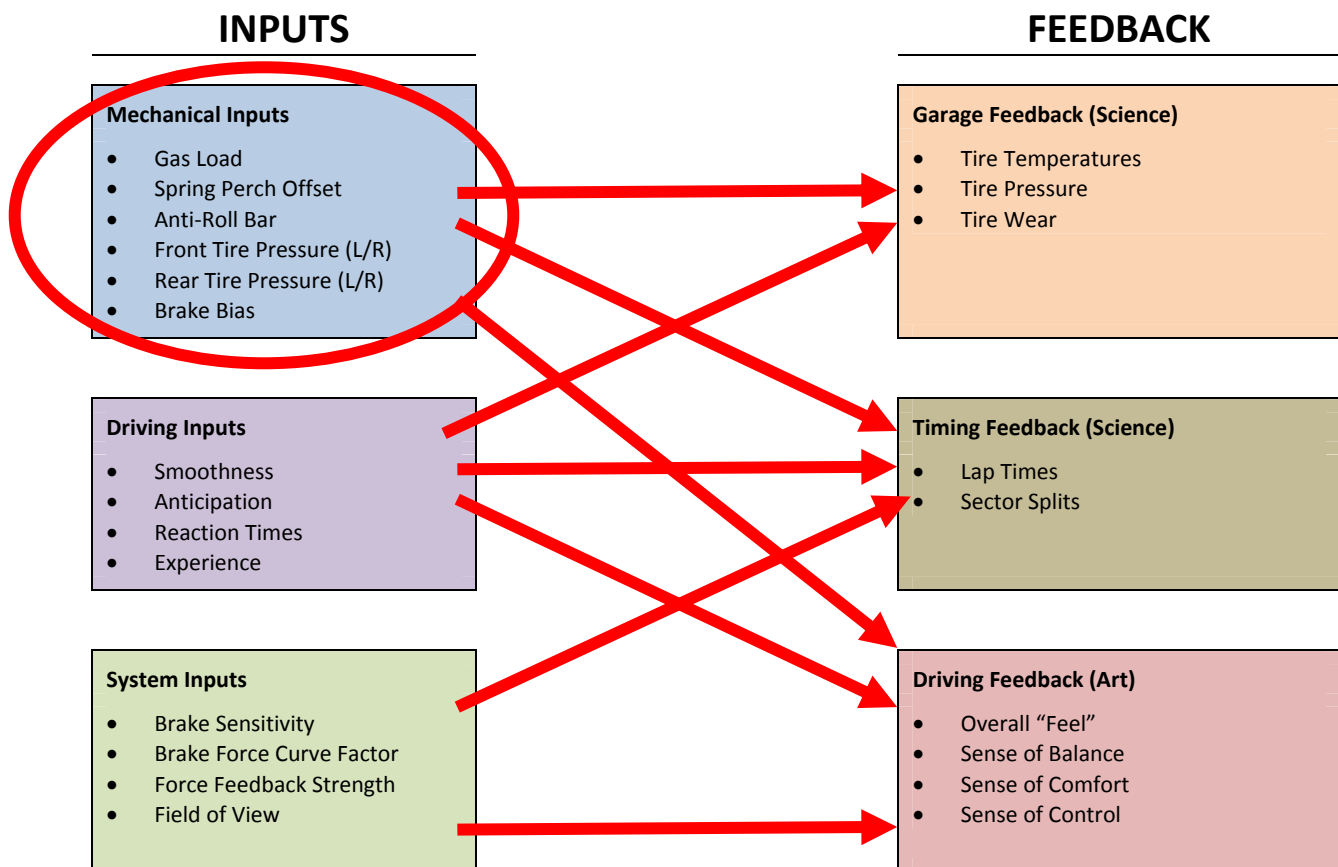
# Set-up And Tuning Philosophy

As part of set-up and tuning, it is important to realize there are only a few ways that your car can communicate with you.

Some ways are immediately apparent (such as squealing tires, sliding, or spinning). Others require the use of measuring instruments (such as tire thermometers or timing devices). Others are much more subjective and involve your level of comfort as a driver and how the car “feels” in relation to your skill level and driving inputs.

The key elements of tuning a Skippy are all based on understanding the feedback you get as changes are made. Some feedback (tires and lap times) are scientific in nature and can be measured and recorded. Often, these provide a framework of information to work from and learning to understand the data feedback is an important part of tuning. Others (such as “feel”) are more artistic in nature but are no less important in their contributions to lower lap times and higher finishing positions.

The overall philosophy of this manual is to help you approach the basic setup in a rational and logical manner so that you can get the best feedback and find comfort and speed quickly. Each driver can focus in on issues that are important to them and then advance at their own pace.



# Set-Up Options

The basic set-up screen of the Skippy is shown below. The location of each setting is highlighted. The arrow buttons are used to adjust the settings.

**Front Brake Bias** → FRONT: Brake bias:

**Cold Tire Pressure (Front)** → LEFT FRONT: Cold pressure: ; RIGHT FRONT: Cold pressure:

**Spring Perch Offset** → LEFT FRONT: Spring perch offset: ; RIGHT FRONT: Spring perch offset:

**Cold Tire Pressure (Rear)** → LEFT REAR: Cold pressure: ; RIGHT REAR: Cold pressure:

**Fuel Fill** → REAR: Fuel level:

**Rear Anti-Roll Bar** → REAR: Anti-roll bar:

You can either:

- Use the default iRacing setup (may be found in “iRacing Setups”),
- A setup which was shared by someone else (if you saved it in “Shared Setups”), or
- A setup developed by you based on your driving style (if you saved it in “My Setups”).

**This Manual is maintained by SBRS drivers  
for the benefit of all iRacers.**

# 1. Fuel Fill

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The easiest set-up choice to make is gas load. The set-up options allow you to pick one of four settings. The default setting is a full tank of 5.2 gallons or 19.7 liters.

## Qualifying / Time Trial

If you are qualifying or doing a time trial, you could pick the lowest setting (2.1 gallons or 7.9 liters) and go. However, it is advisable to take 3.1 gallons (11.7 liters) for a full time trial session.

## Race

If you are going to race (or do some practice laps in race trim), you need to know how much gas to take. You want to have enough to finish the race but not carry around more than you need to. Since each additional increment of gas adds almost six pounds (2.6 kilograms) of weight to the vehicle, it may not seem like a lot of weight but it can make a difference.

The amount of gas you need is a function of the race distance, the type of track and your driving style. Since the fuel load is re-set at the start of a race, the number of warm-up laps is not a factor in the gas load decision.

While you need to become familiar with how your driving style affects gas usage at each track, you can use the following [as a general guide](#). Note that the F4 button will give you an estimated number of laps at the track based on the selected fuel load. Be sure to check these for yourself!

Gas Load		General Guide	
2.1 Gallons	7.9 liters		May Be Enough
3.1 Gallons	11.7 liters		Almost Always Enough
4.2 Gallons	15.9 liters		Too Much
5.2 Gallons	19.7 liters		Too Much

**Set gas load to 3.1 gallons (11.7 liters).  
Adjust later if needed.**

## 2. Tire Pressure (F/R)

Tire wear, tire temperatures and tire pressures are the main way that the car communicates with you as the driver. You will get maximum grip and performance by having tires which are:

- not over-inflated (reducing the size of the contact patch and running colder than may be desired), or
- not under-inflated (changing the tire handling and running hotter than may be desired).

	Pounds per square inch (psi)	Kilopascals (kPa)
	17.4	120
	18.0	124
	19.0	131
	20.0	138
	21.0	145
	22.0	152
	23.0	158
	24.0	165
	25.0	172
<b>Default Rear Pressure</b>	<b>26.0</b>	<b>179</b>
	27.0	186
	28.0	193
	29.0	200
<b>Default Front Pressure</b>	<b>30.0</b>	<b>207</b>
	31.0	214
	32.0	220
	33.0	227
	34.0	234
	35.0	241
	36.0	248
	37.0	255
	38.0	262
	39.0	269
	40.1	276

The Skippy set-up menu allows you to select cold tire pressures for each of the four tires on the vehicle. *For initial set-up purposes*, it is typical to have the same setting for each pair of tires at the front and rear of the car. Since tire pressures are one of the key tuning elements of the Skippy, you should select a basic cold pressure setting and then adjust it as you apply your driving style to the specific conditions at each track.

You will learn that the Skippy set-up is sensitive to changes in tire pressure. You can start to evaluate your tire pressures by:

- how the car “feels” when driving it,
- looking at the tire wear distribution on each tire after you have driven the tires for a few laps, and
- seeing how the tire wear drops off over a race distance.

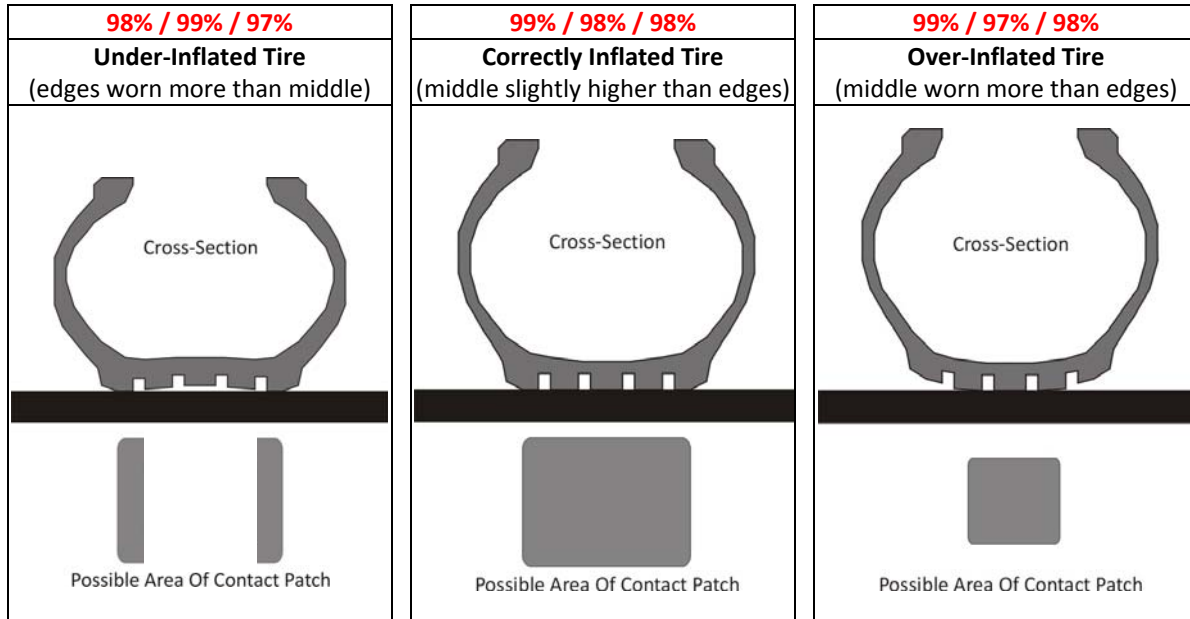
The tire temperature information displayed on the garage screen represents the heat distribution over an area of the tire rather than at a specific point. As a result, it is **not** as useful as it could be in terms of evaluating whether a tire is under-inflated, over-inflated or just right. .

You should pay attention to whether the *tire wear* is even across the tire. If the tire is wearing more in the middle, it is probably an indication that the tire is over-inflated. If the inner and middle tire wear is similar, the pressure is probably good. Since the Skippy modeled in iRacing uses a high performance road tire (not a racing tire), your tire wear will probably be in the 97% to 99% range after a race distance.

**Set *initial* tire pressures to 22 psi front (152 kPa) and 22 psi rear (152 kPa).  
Adjust later as needed.**

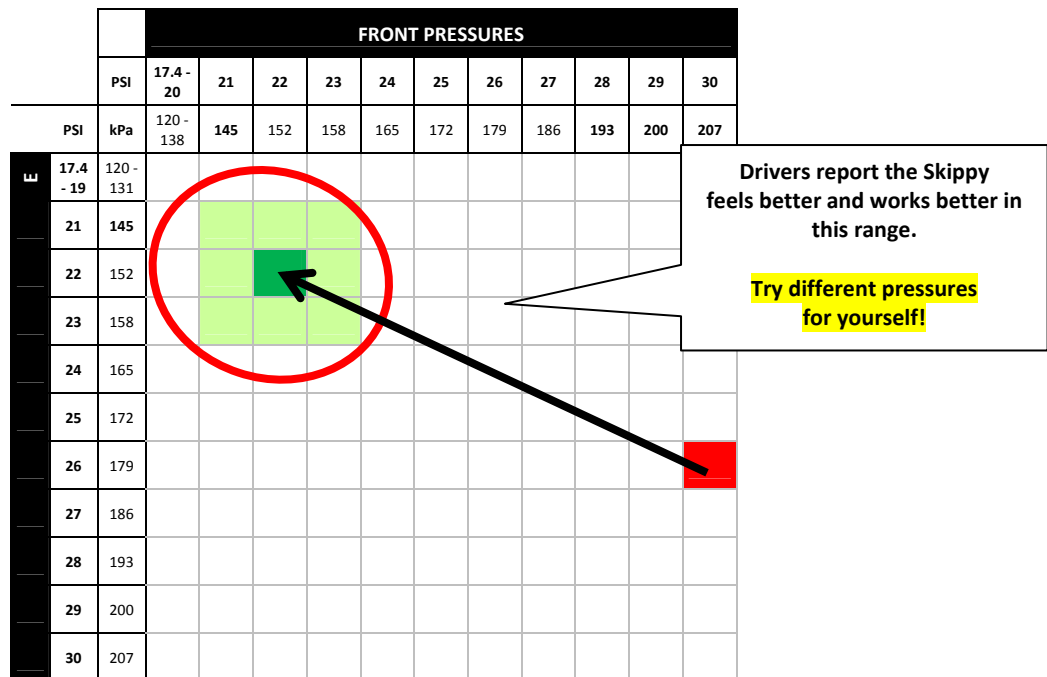
## Introduction To Set-up And Tuning - 2013 Season 4

The diagrams below are examples of possible wear readings for the left front tire (Outer / Middle / Inner).



Lower tire pressures can provide more grip but they can also be subject to “sidewall rollover” and should be used with caution – especially if you are gaining experience. Higher pressures can provide less rolling resistance and a more consistent feel. Try different pressures for yourself.

A key tuning aspect may be the relative pressures. Lowering tire pressures a “click” or more may give you a little more grip **at that end of the car.** The key lesson here is for you to find pressures that work for you and your driving style and experience level. See the graphic on the next page to get an idea of how the handling might be affected by changing tire pressures.



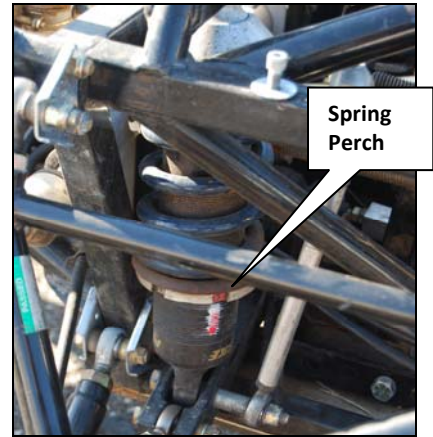


### 3. Spring Perch Offset (SPO)

Spring perch offset is the basic chassis setting for the front end of the Skippy. A spring perch is a collar on the shock/spring assembly which seats the spring. The spring perch offset is the distance from the spring perch to a known reference point. On the Skippy, when the SPO is set to zero, the ride heights at the front and rear are the same and the car has no “rake”.

A negative SPO value means that the spring/shock assembly is extended and this has the effect of raising the ride height at the front of the car. A positive SPO value means that the spring/shock assembly is compressed and this lowers the ride height at the front of the car.

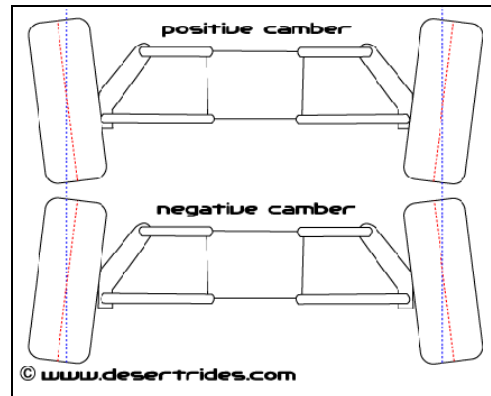
At an SPO setting of +5, the shock/spring assembly is compressed to its limit and the front ride height of the car is as low as it can be.



In addition to front ride height and rake, the SPO acts as a camber adjustment for the front wheels. Camber is an important set-up concept because it is used to help maximize the contact patch of the tire during cornering.

Camber refers to the inward or outward tilt of the top of the wheel relative to the ground. Positive camber means that the top of the wheels are tilted outward relative to vertical. Negative camber means the top of the wheels are tilted inward relative to vertical.

For road courses, some negative camber is typically used. This causes the outside tire wall to “straighten up” when cornering and this keeps the “contact patch” of the tire on the ground. In other words, lateral loads when cornering actually *push* the contact patch onto the pavement surface. If an outside tire had zero camber or positive camber, you can imagine how cornering loads might actually “pull” the contact patch off the ground.



The rear of the Skippy has built-in camber of -2.7 degrees. The front camber and rear camber of the Skippy are the same (-2.7 degrees) when the SPO is set to +2. How much camber is desirable depends on the track, the types of corners, the surface “grippiness”, cornering speeds, and your driving style.

Overall then, increasing the SPO will result in a lower front ride height, a lower front center of gravity, more positive rake, more negative camber, and better aerodynamics. While it has not been shown to have a significant effect on top speed or acceleration in iRacing, a higher SPO may have some benefits.

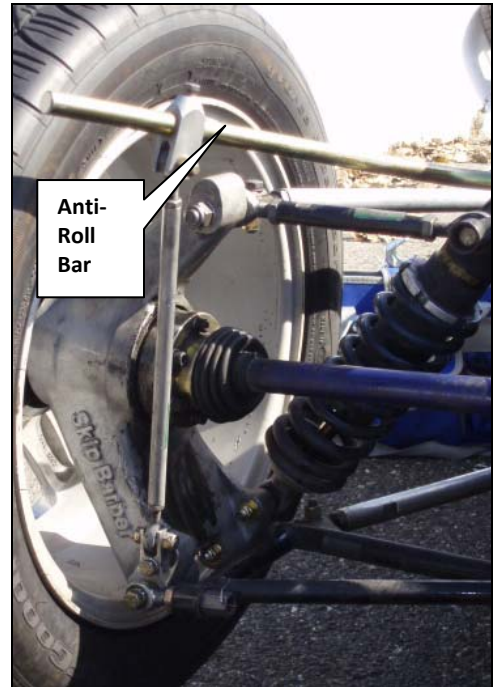
Also keep in mind that more camber will reduce the contact patch of the tires in a straight line and this may result in the need to brake differently or change brake settings. More about this later.

## 4. Anti-Roll Bar (ARB)

An anti-roll bar is a device used to stiffen a chassis laterally so that a car does not lean (or roll) as much when cornering. The rear ARB is adjustable on the Skippy. By changing the dynamics of the rear of the car relative to the front, the ARB can be used to adjust the behavior of the car when cornering.

A higher value means that the rear ARB is stiffer and is more resistant to body roll. It means that both rear wheels will respond similarly (whether good or bad) to inputs or forces. With other things being equal, a stiffer rear ARB will add oversteer tendency to the back end of the car or remove understeer tendency from the front end of the car. Since the rear ARB tends to “load” and “unload” the rear tires in a more predictable way than if they act independently, many new drivers prefer a higher rear ARB setting.

A lower value means that the ARB is softer and is less resistant to body roll. While this can produce more grip on the outboard tire, the occurrence of a **“snap unload”** due to a sudden input or change can throw the whole balance off and cause a spin for a newer driver. As drivers gain more experience in the Skippy, they may feel more comfortable using a lower rear ARB setting.



The other value of the ARB is to help the car “rotate” through a corner. A higher ARB setting can be used to help induce oversteer at the right time in the corner (from a throttle blip or a throttle lift). This helps rotate the rear end of the car around and allows you to get back on the throttle earlier.

### **SPO/ARB Synthesis**

The Skippy comes with some “default” settings (SPO = +5 and ARB = 7).

The graphic on the facing page shows that there are 88 possible combinations of spring perch offset (11 possible settings) and anti-roll bar (8 possible settings). It is up to each driver to find the setting that works best for them. The annotations on the table are intended to help you understand the general effect of some changes you may want to consider as you gain experience with the Skippy at each track.

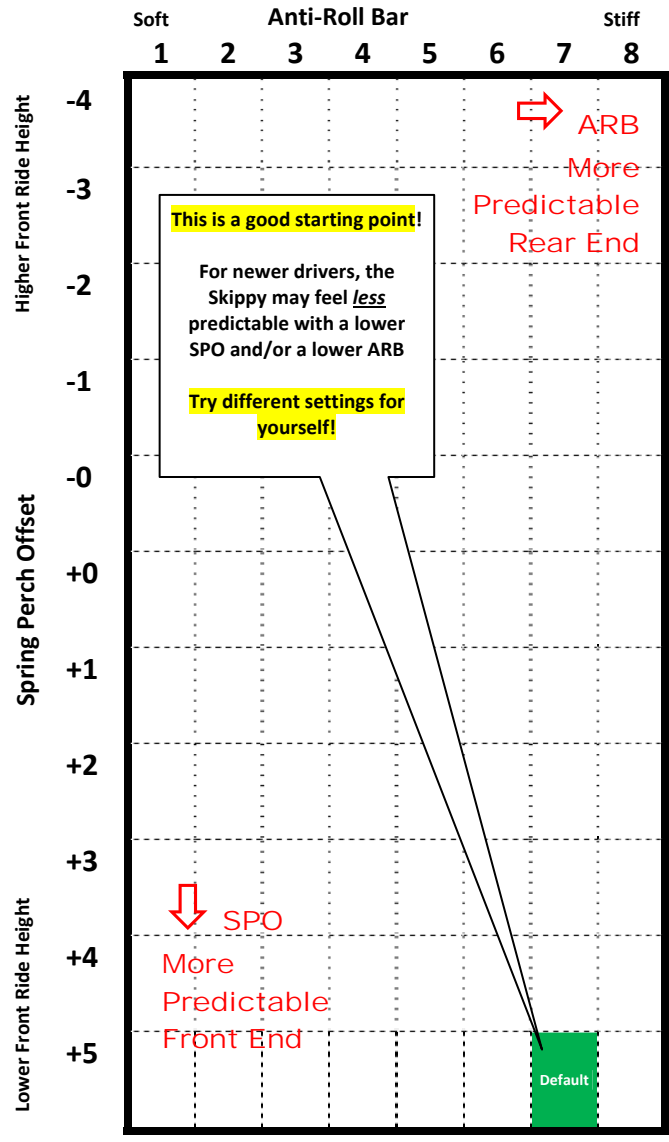
**One of the first things new Skippy racers will need to come to terms with is that there is no magic chassis setup. Each driver has different preferences, different experience and different levels of comfort. Experience and experimentation will lead you to a solution which works best for you.**

**To drive this point home, you may find it interesting to know that some of the best Skippy racers have shown they can get close to the record times at tracks with the default set-up. They do not race with those settings but they could. You need to find a set-up that works for you in terms of comfort, stability, and speed.**

## Skippy - Chassis Set-up Matrix

- Lower SPO:**
- **Less negative camber on front wheels**
  - Higher front ride height / more negative rake
  - More weight transfer / body roll under braking / acceleration / cornering
  - Steering may feel "floaty" but allow for higher slip angles
  - May have less front grip (understeer) but allow for sliding

- Lower ARB:**
- **Less slide at rear end**
  - Less tendency to oversteer
  - More body roll at rear in corners
  - More tolerant of riding curbs



- Higher ARB:**
- **Can slide rear end and control it**
  - More tendency to oversteer
  - Less body roll at rear in corners
  - Less tolerant of riding curbs

- Higher SPO may:**
- **More negative camber on front wheels**
  - Lower front ride height / more positive rake
  - Less weight transfer / body roll under braking / acceleration / cornering
  - Steering may feel more precise but not support higher slip angles
  - May have more front grip but less potential for sliding

## 5. Brake Bias (BB)

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Brake bias is set-up option which determines how much of the braking effort will be directed to the front or rear wheels. A setting of 50% means that the front and rear wheels are being given the same amount of braking input. A setting of 60% would mean that the front wheels are being given 60% of the braking input. The default setting in iRacing is 60%.

Straight-line braking efficiency can be maximized by distributing the braking forces so that all four tires are generating their maximum deceleration simultaneously. Since a car's weight is thrown to the front tires under braking, it is common to have some front brake bias.

It is typically preferable to avoid too high of a rear brake bias since this may result in locking up the rear brakes (with less load on the rear tires under braking) and is almost certain to result in a spin. On the other hand, if the front brakes lock up first, you tend to slide forward in a straight line (which can often be saved) but not spin.

How much brake bias is used is specific to your driving style. The goal is to find a setting that shares the braking load among the four wheels as efficiently and effectively as possible, suits your driving style and feels comfortable.



Graphics from iracing.com

# Testing

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OK, let's select some settings to try out.

<b>Leave <i>initial</i> spring perch offset (SPO) at +5.</b>	This will give you a little more "bite" at the front end of the car.
<b>Leave <i>initial</i> rear anti-roll bar (ARB) at 7.</b>	This will make the rear end of the car a little more predictable and help it rotate.
<b>Set <i>initial</i> brake bias to 58%.</b>	This should result in a stable braking experience to help evaluate the car.
<b>Set <i>initial</i> tire pressures to 22F/22R psi (152F/152R kPa).</b>	This should help you generate a feeling for the handling of the car and evaluate tire performance.

All of these will be changed later once you have had a chance to try the car on the track. The only way to evaluate settings is to take them on the track and try them out.

## Road Testing

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Road testing is the only way to determine if the car is performing in ways you can anticipate and respond to.

If your car is not behaving in a way you anticipated, there are only three explanations:

- You need more practice time to learn how to anticipate your current setup for this track and apply your driving skills appropriately
- Your setup for this track (or for a portion of the track) is not yet optimized for your driving skills
- Your driving skills need to be adjusted for the track

When testing, ***do not*** try to set fastest lap right out of the box! The main objective should be to collect as much useful data as possible so that you are making measured changes and making progress in your set-up and tuning program.

The key is ***do not spin*** if you can help it. Be patient. The car may feel tentative compared to other cars you have driven but hang in there. Once you know how it is behaving, you can start to make choices to get the car matched with your driving style. You should be pushing the car towards its limits but should not be on the edge.

After you have gotten these laps under your belt, come to a gradual stop (do not skid to a stop since this will adversely affect the reading of your tire temperatures) and return to the garage.

## Back In The Garage

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### Adjusting Tire Pressures

Tire pressures are used to effectively tune the Skippy (and every race car) since tire performance is a key part of how the car will perform. Whether to make adjustments to tire pressure or the chassis (SPO or ARB) is often a matter of personal preference after you have developed experience with the car.

Since the Skippy is a lightweight vehicle, lower tire pressures will generally result in more grip – to a point. On the other hand, the softer sidewall of the tire will make the tire less responsive to driver inputs. Higher tire pressures will stiffen the tire and improve its responsiveness – to a point. However, it may also result in less grip.

Some people run the same tire pressures on the front and rear. Others run a higher pressure on the rear since this is the heavier part of the car or because they want to tune the balance of the car that way. Still others run a higher pressure on the front since the dynamic weight of the Skippy (the weight transfer under braking and cornering) relies on the front tires. Try each of them out and see what feels best to you.

Your tires get you around the course and you want them to be operating as effectively as possible. The peak temperature range for actual BF Goodrich radial tires like those on the Skippy is 160 – 230° F (70 – 110° C). It can be hard to get to these temperatures in the Skippy on iRacing. Most people cannot drive the car that hard.

What is possible though is to get as much of the tire surface working for you as possible. Use the tire wear distribution on each tire to evaluate this. What is important is how the car feels to you.

### Adjusting Spring Perch Offset

On the test drive, how did the front end of the car feel? If the car seems too “twitchy” on corner entry, try reducing the SPO. If your driving style is not particularly smooth on the wheel, reducing the SPO will reduce the front end “bite” and this may make the car feel less “twitchy”. Remember though, lower SPO / camber should have the effect of reducing the contact patch of the tire when subject to turning loads. This should result in less front grip and more understeer.

A clue that you may have had too much camber to begin with is that the car feels “twitchy” under braking or locks up easily due to the reduced contact patch. Watch your tire wear and rely on the feel of the car to figure out what works best for you.

Some people prefer not to have too much “precise-ness” in the front steering and want to float the car through the corner with a fair amount of mid-turn correction in the steering. You will see this in some of the replays posted on-line. If this is your style, you will probably want a lower SPO setting.

Try changing the SPO setting by 2 clicks or more so that it makes enough of a difference that you can feel it. If you feel you may have gone too far, back off a click and see how that feels.

Remember, the goal is to find settings that make you comfortable driving the car given your driving style and experience. Once you are comfortable, speed will follow.

### **Adjusting Anti Roll Bar**

The key part of evaluating the rear anti-roll bar (ARB) is how the car feels to you and performs based on your driving style. While changing the ARB only changes one end of the car, the key effect can be how the rear of the Skippy is tuned relative to the front.

A softer rear ARB (a lower number) will result in more body roll at the rear when cornering. This can cause problems for newer drivers since they have not yet learned to anticipate the “snap unload” which can happen as the cornering load is taken off the outside rear tire. This can result in a spin at the corner exit.

A stiffer rear ARB (a higher number) will reduce the amount of body roll and makes the rear end “slidier.” Since this generally happens in a more predictable way, it can be easier for newer drivers to learn to drive the Skippy with a higher ARB setting. Then, over time, they can experiment with reducing the ARB to understand how the car responds.

On the test drive, how did the rear end of the car feel? If the car seems to oversteer and you do not feel that you can get power down, try softening the ARB to increase the grip at the rear of the car.

Think about how the car behaved at the key corner (or corners) on the track. If the key corner is the fastest corner or the corner leading onto the longest straight, are you able to get the power down early or have a high exit speed? Is the car behavior in that corner allowing you to maximize your speed on the straight?

The general idea for the rear ARB should be to find a setting that is predictable for you. Over time, you can then experiment with a lower ARB setting. Then, a general strategy might be to run as soft an ARB as possible while maintaining control of the car and the proper handling balance. There is no magic setting.

Try changing the ARB setting by 2 clicks or more so that it makes enough of a difference that you can feel it. If you feel you may have gone too far, back off one click and see how that feels.

Remember, the goal is to find settings that make you comfortable driving the car given your driving style and experience. Once you are comfortable, speed will follow.

### **Brake Bias**

As you gain more experience with the Skippy, you should explore reducing the front brake bias in order to distribute the braking forces evenly given your driving style. The default setting of 60% is very stable for people becoming familiar with the Skippy.

A setting of 58% should also be stable for most people and share more of the braking load with the rear wheels. If you brake with your right-foot, you may find that the setting of 58% is comfortable for you.

If you are learning to be a left-foot braker and want to use some trail braking (braking while turning) and/or dynamic braking (braking while keeping some gas on), you may want to try a lower front brake bias.

The basic rule of thumb (as with other changes) is to try moving it back two or more clicks. If the results are unsatisfactory for your driving style or lap times, add some more front brake bias back in.

## Finding “Balance”

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Settings on the Skippy tend to affect each other in some way. For example, changing the rear ARB changes how you drive certain corners and this may lead to desired changes in SPO and/or air pressures. Tire temperatures or pressures may vary at different corners of the car and you may want to play with these settings. .

Experience has shown that maximizing the performance of the tires for a given track and your driving style has the greatest impact on lap times and results.

If you are not fully comfortable with the car’s behavior (maybe the car does not feel “stable” to you) or if you just want to try out some options, try some different chassis set-ups. Try 5 or more laps with each of the following set-up options and see which feels best or results in the fastest lap times for you:

	“Floatier” Front (SPO)	“More Precise” Front (SPO)
Rear “Less Slidy” (ARB)	-2 / 2	+3 / 2
Rear “More Slidy” (ARB)	-2 / 7	+3 / 7

Remember that chassis settings might vary from track to track vary depending on the types of corners, the surface “grippiness”, cornering speeds, and your driving style.

Once you find a general chassis setting range which feels good to you, you can continue to fine tune the chassis set-up from there. This may be a situation where a visit to the Centripetal Circuit may be helpful.

While some people seem to find a basis set-up that works for them and stick to it, do not hesitate to go back and revisit your basic chassis tuning for different tracks or if you feel you may have hit a road block. Others have developed a favorite set-up for each track they visit based on its unique characteristics.

Sometimes, balancing relative grip (a little more in the front or a little less in the rear) is the key to finding a setup that works best for you. If you are comfortable with the basic chassis setup but the car seems to understeer, try reducing the tire pressure at the front of the car (or increasing it at the rear) to provide more relative grip at the front. Similarly, if the car seems to oversteer, you could try increasing the tire pressure at the front of the car (or reducing it at the rear) to provide more relative grip at the rear. Sometimes, the absolute pressure settings are not as important to the balance of the car as the relative pressure settings.

Once you have settled on a front/rear pressure balance you feel comfortable with, try increasing or decreasing the pressure settings by the same amount on all four tires to see how that changes the balance of the car. Try changing the pressure setting by 2 clicks or more so that it makes enough of a difference that you can feel it. If you feel you may have gone too far, back off one click and see how that feels.



## Common Skippy Symptoms / Solutions

<b>Braking</b>	<b>Driving Options</b>	<b>Set-up Options</b>
Lock up front wheels on braking	<ul style="list-style-type: none"> <li>• Brake earlier</li> <li>• Brake softer</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Move brake bias towards rear</b></li> <li>• Lower F/R tire pressure (more grip)</li> <li>• Calibrate brake pedals</li> <li>• Change brake sensitivity</li> </ul>
Lock up rear wheels on braking	<ul style="list-style-type: none"> <li>• Brake earlier</li> <li>• Brake softer</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Move brake bias towards front</b></li> <li>• Lower F/R tire pressure (more grip)</li> <li>• Calibrate brake pedals</li> <li>• Change brake sensitivity</li> </ul>
Long braking zone	<ul style="list-style-type: none"> <li>• Brake later</li> <li>• Brake harder</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Move brake bias towards rear</b></li> <li>• Lower F/R tire pressure (more grip)</li> </ul>
Spin on braking	<ul style="list-style-type: none"> <li>• Keep some gas on while braking ("throttle braking")</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Move brake bias towards front</b></li> <li>• Increase F/R tire pressure (more stable, less snap)</li> </ul>

<b>Entry</b>	<b>Driving Options</b>	<b>Set-up Options</b>
Wont turn into corner (front end understeer)	<ul style="list-style-type: none"> <li>• Slow down more / slow down sooner</li> <li>• Turn more smoothly / less abruptly</li> <li>• Be off the brakes when turning</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Increase SPO (more camber and grip)</b></li> <li>• <b>Stiffen rear ARB</b></li> <li>• Reduce F tire pressure (more grip)</li> <li>• Increase R tire pressure</li> </ul>
Spin on turn in / (rear end oversteer)	<ul style="list-style-type: none"> <li>• <b>Finish braking before turning</b></li> <li>• Do not stab brakes while turning</li> <li>• Do not "toss" the car into the turn</li> <li>• Slow release of the brake, ease onto throttle</li> <li>• If "throttle braking", try not to lift off throttle abruptly while turning</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Reduce SPO (less camber and grip)</b></li> <li>• <b>Soften rear ARB</b></li> <li>• Increase F tire pressure (more stable)</li> <li>• Lower R tire pressure (more grip)</li> </ul>
Steering feels unsure or car is slow to take a set in the corner		<ul style="list-style-type: none"> <li>• <b>Increase SPO (more frontgrip)</b></li> <li>• <b>Stiffen rear ARB (less rear grip)</b></li> </ul>
Car feels too edgy or responds too quickly		<ul style="list-style-type: none"> <li>• <b>Reduce SPO (less frontgrip)</b></li> <li>• <b>Soften rear ARB (more rear grip)</b></li> <li>• Reduce tire pressures (more grip)</li> </ul>

<b>Middle</b>	<b>Driving Options</b>	<b>Set-up Options</b>
Too Much Understeer	<ul style="list-style-type: none"> <li>• <b>Avoid</b> - Slow down / Use pedals smoothly</li> <li>• <b>Manage</b> - Ease off gas / Tap brakes</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Reduce F tire pressure (more front grip)</b></li> <li>• <b>Stiffen rear ARB roll bar to reduce rear grip</b></li> <li>• Increase R tire pressure</li> </ul>
Too Much Oversteer	<ul style="list-style-type: none"> <li>• <b>Avoid</b> - Slow down / Use pedals smoothly</li> <li>• <b>Manage</b> - Ease off gas <u>or</u> add gas to catch the oversteer</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Reduce R tire pressure (more rear grip)</b></li> <li>• <b>Soften rear ARB to add more grip</b></li> <li>• Increase F pressure</li> </ul>

<b>Exit</b>	<b>Driving Options</b>	<b>Set-up Options</b>
Understeer Under Power	<ul style="list-style-type: none"> <li>• Set up earlier for a later apex</li> <li>• Don't get on the throttle too soon</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce F tire pressure (more front grip)</li> <li>• Stiffen rear ARB to get less rear grip</li> <li>• Increase R pressure</li> </ul>
Oversteer Under Power	<ul style="list-style-type: none"> <li>• Ease onto the throttle rather than punch it</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce R tire pressure (more rear grip)</li> <li>• Soften rear ARB to get more rear grip</li> <li>• Increase F pressure</li> </ul>

## General Driving Tips

Overall	<ul style="list-style-type: none"> <li>• Focus on managing and minimizing inputs to the car</li> <li>• Simple is fast</li> </ul>
RPM	<ul style="list-style-type: none"> <li>• Shift above 6000 RPM / No need to wait for rev limiter (6400 RPM or so)</li> <li>• Power range is above 5000 RPM</li> </ul>
Accelerator	<ul style="list-style-type: none"> <li>• Be easy with pedals and pedal transitions / Try not to stab at pedals</li> <li>• Keeping some gas on at all times can help minimize nervousness in corners</li> </ul>
Brake	<ul style="list-style-type: none"> <li>• Be easy with pedals and pedal transitions / Try not to stab at pedals</li> </ul>
Steering	<ul style="list-style-type: none"> <li>• Concentrate on corner exit, not on corner entrance</li> <li>• Try to get car set early and get back on gas early at corner exit</li> <li>• Try using throttle to aid steering (an abrupt lift can help induce rotation)</li> <li>• Follow marks on the pavement since there is a reason they are there</li> </ul>
Practice	<ul style="list-style-type: none"> <li>• There is no better way to get faster than practice, practice, practice</li> <li>• Figure out the most important corner(s) on the track and tune for those first</li> </ul>

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**If you have thoughts or ideas about how to make this manual even better, please let us know at [contact@iracing.com](mailto:contact@iracing.com).**

**The same holds true if you feel that the manual contains information which may not be correct.**

**Thanks for your help!**

