

## Basic Driving Techniques – Cornering

When you first get interested in karting it can be difficult to find good quality information about the sport. Most of the web sites concentrate on getting you involved with a kart club and then depend on the general mentoring by club members in the various aspects of racing. It is nice to have some reference material to review after the introduction, especially on some of the technical elements of racing. This article is designed to provide some reference of basic driving techniques.

One of the first question that is asked once you realize that racing a kart is not quite the same as driving a car is "How do I turn the kart in corners?" or more generally how to properly do cornering?

To master cornering, you need to understand some basic terminology regarding negotiating the fastest path around the track, commonly referred to as the "racing line". If you examine Fig 1 you will see the yellow line represents the racing line through this right hand corner example.

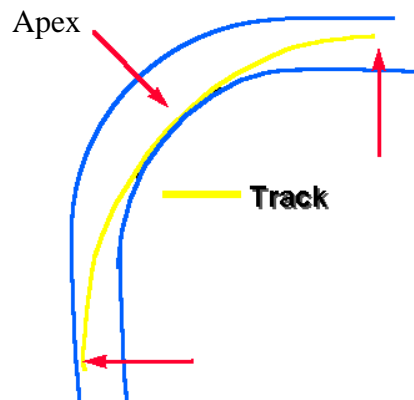


Fig. 1

Another term you will encounter is the apex of a corner, bend or turn. The apex is the "middle-inner part" of corner, bend or turn as shown in Fig 1. The apex is typically marked on the race track in some fashion such as a painted curb. The idea is to allow the drivers to see the apex from a distance and help work out the racing line. These elements are critical as your goal should be to make the turn as straight as possible. In other words create what amounts to be a "short-cut" through the turns on the track. The less time you spend in the turns, the quicker your lap time will be.

Another key element of getting around the track fast is braking and acceleration as it pertains to corners, bends and turns. Fig. 2 illustrates these two concepts and shows the general locations where braking and acceleration should occur.

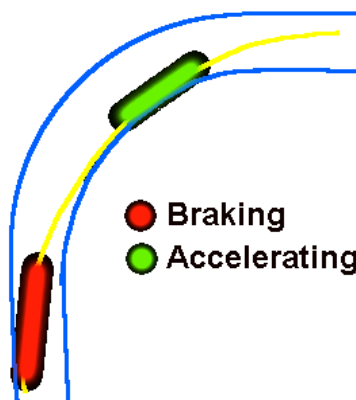


Fig. 2

You need to slow down before you start to perform your turn. If you come into the turn too fast and start to turn the steering into the turn, your kart will likely start to spin and you will lose control in the corner.

Importantly, do not apply hard braking while you're already inside the bend, as you may lose control by sliding. However, advanced driver are able to apply "trailing braking" soft control braking while inside the bend.

You need to learn the limit of your kart setup and be able to feel the limit of your kart in cornering. Differential in tire pressure, chassis stiffness and tires performance can greatly affect the limit of your karts cornering ability.

From the diagram above, you can start to accelerate once you have cleared the middle part of the turn and when the kart is pointing towards the right direction. The idea is "accelerate when you can".

Now that you have seen the basics of the racing line, let examine how the racing line appears on different types of corners, bends or turns.

#### Progressive Opening Corner

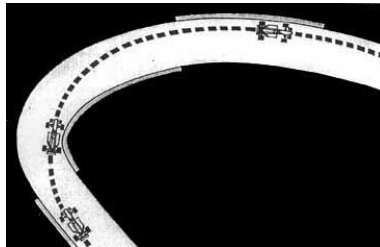


Fig. 3

Figure 3 illustrates a corner that opens progressively after the apex. You need to steer early into the apex and start to accelerate progressively taking wider line as much as the corner opening allows for maximum power. The trick is finding a balanced line between the turning-in and exit points in relation to the increasing radius of the corner.

#### Tightening Corner

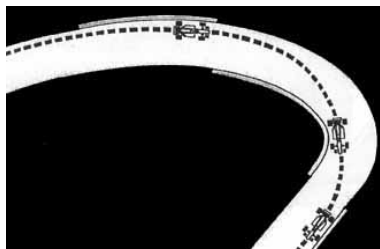


Fig. 4

Figure 4 illustrates a corner that tightens as you progress around it. For this type of corner the trick is to stay on the outside line as long as possible before turning into the apex. If there is a long straight before this corner, then it is possible to delay the braking point in order to make the most of this type of corner. As usual accelerate as soon as you can, once you have passed the apex.

## Hairpin corners

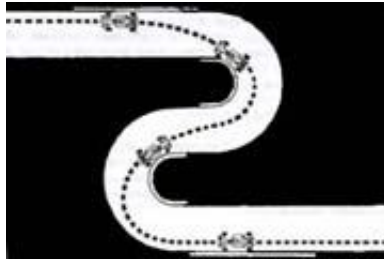


Fig. 5

Figure 5 illustrates a hairpin type turn. As you can see from this diagram the racing line is such that the quickest exit possible is out of second part of the hairpin. The principle here is to take a wider line on the entry of the first bend in order to be in better position to tackle the second. In this case you definitely spend more time in adjusting the entry into first bend. However, right after the first bend apex you would be able to accelerate early and tackle the following straight at higher speed. In this case the proven principle of "in slow and out fast" is always true.

## Chicanes



Fig. 6a

Figure 6a illustrates a chicane. In examine the path we see the priority is in the exit as in this example what follows the chicane is a fast bend out of the chicane. As usual you have to sacrifice the first right turn by turning into the apex very late. The logic is, you are in better position to attack the second left turn at higher speed. This illustrates another example of the principle of "in slow and out fast". In other words, you have to worry more on how you perform on your way out, rather than on your way in.



Fig. 6b

Figure 6b illustrates the opposite of the previous type of chicane. In this chicane, you have to give more priority to the first part of the chicane because the first bend is the fast corner, while the second is slower. You have to hold the straight line until the second apex, keep up the speed until the very last moment. Your braking point would be right before the second bend where you need to slow down to adjust the right speed in order to exit the tighter second bend. As usual accelerate as soon as you can, once you have pointed your kart into right direction. This type of turn is more a case of in fast and out slow situation.

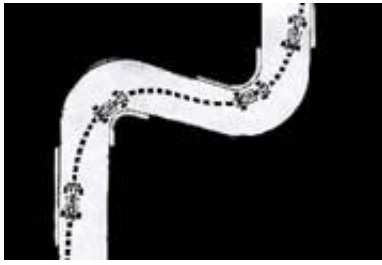


Fig. 6c

Fig 6c illustrates yet another chicane. This type of turn requires that you sacrifice the entry so you can have a faster exit. This technique of driving is dictated by length of the straight before the entry and what follows after the chicane. In this type of chicane you will have to apply an in slow and out fast technique, especially if what follows after the second bend is a long straight.



Fig 6d

Figure 6d illustrates our final example of a chicane that comes after a long straight. In this case you must compromise the second half of the chicane by braking as late as possible before starting to turn into the first bend. You must keep as close possible to the left hand bend, possibly riding up on the second bend apex. However on the exit you have to wait for the car to straighten up before you can start to accelerate again.