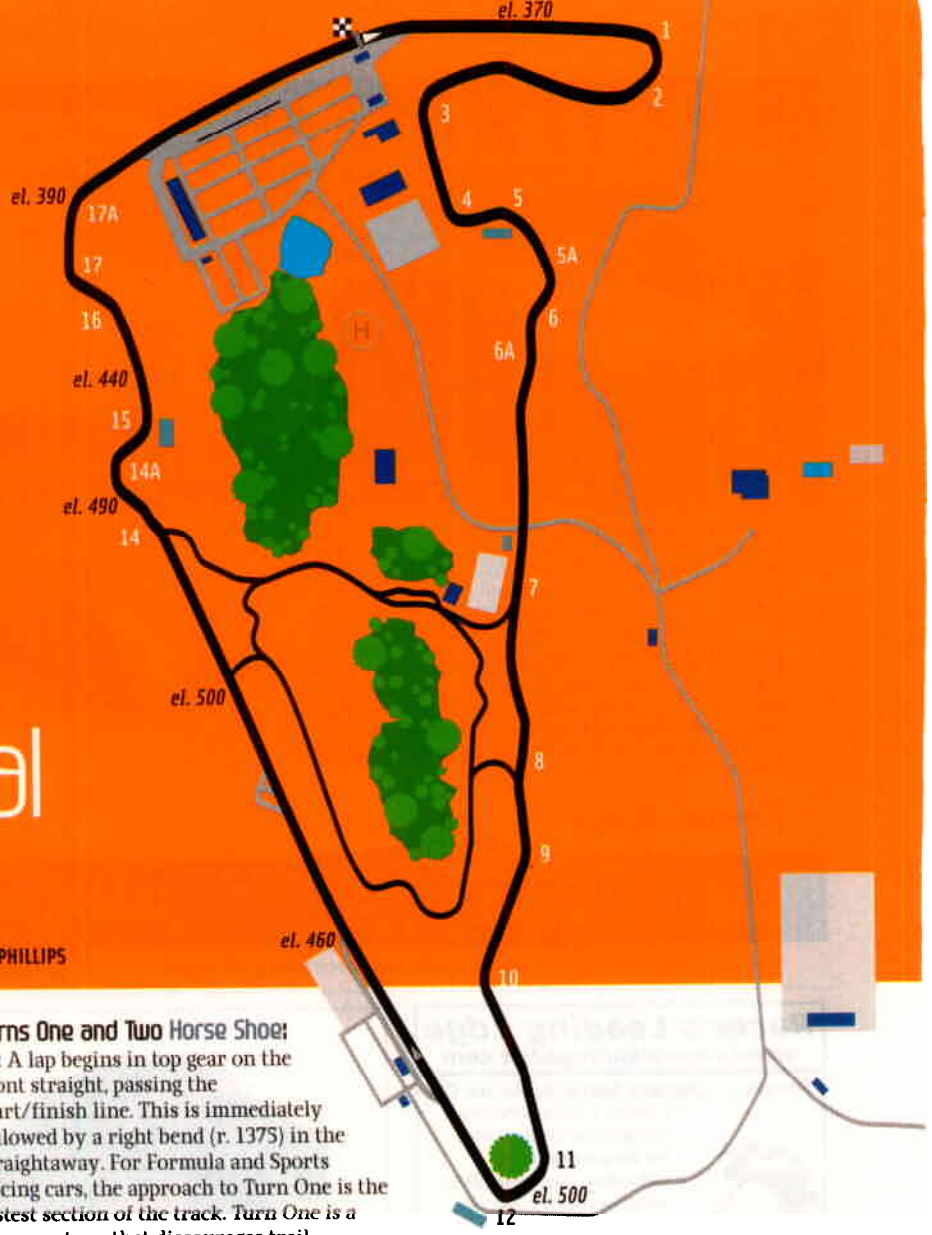
The Climbing Esses (OPPOSITE) is one of the signature features of VIRginia International Raceway, and a tricky, get critical, section to get right.



HOT LAP PRESENTED BY THE ROAD RACING DRIVERS CLUB

VIRginia International Raceway

BY **DON KNOWLES WITH JOHN FERGUS** PHOTO **LAT / DOUGLAS PHILLIPS**

Because of its significant elevation changes, high speed and combinations of switchback turns, a quick lap at VIRginia International Raceway (VIR) is an exhilarating experience. There is some similarity to the great Canadian track, Mosport, which is a circuit known to require a little bravery for a truly fast lap. VIR's self description is "Fun, fast, and world class." It's a pretty apt description.

VIR has at least five optional layouts that can be run. The SCCA National track is 3.27 miles long, while the North Course (used by the motorcycles) is 2.25; the South Course is 1.65; the Patriot is 1.1; and the Grand course is 4.2.

VIR can be approached as if there are three large groups of turns: Turns One-Three; the Flat and Climbing Esses and Oak Tree (Turns Four through 12); and the downhill section, Turns 14-17.

John Fergus and I will each describe every set of turns from our individual perspectives—his Sports 2000 and my Touring 2/Grand Am Cup cars, both CTS-*V* Cadillacs, and also the C5 and C6 Touring 1 Corvettes. I have included turn radii with the abbreviation "r." and also key elevation change information. As you will see, the track looks somewhat different depending on which car one is in.

Turns One and Two Horse Shoe:

S2: A lap begins in top gear on the front straight, passing the start/finish line. This is immediately followed by a right bend (r. 1375) in the straightaway. For Formula and Sports Racing cars, the approach to Turn One is the fastest section of the track. Turn One is a late-apex turn that discourages trail breaking. Be careful not to brake too late, because missing the turn-in will leave the car too far out to apex Turn Two, which is really just the second apex of Turn One. In general, Turn One requires a tidy entry and holding the late apex for just a moment before squeezing on the throttle in order to make a continuous throttle application, allowing the car to slide farther and farther out toward the exit of Turn Two.

Touring cars: Turn One can be run with two apexes but I find it faster to late apex the first (r. 120) and run an increasing radius arc all the way to the outside of the track, accelerating all the way. I basically ignore the second apex, a.k.a. Turn Two (r. 270).

Turn Three NASCAR Bend:

S2: Turn Three begins with the kink (r. 298) that lies between Turns Two and Three (r. 137). In negotiating the kink, be sure to exit on driver's right in sufficient time to get the car balanced and straight before the breaking zone for Turn Three. This turn is straight forward, but is quicker than it initially looks because there is extra room to track out on the exit.

Touring cars: Turn Three is only the first of the challenging turns. It is dubbed the "NASCAR" turn, due to the proclivity of the NASCAR drivers driving off the outside of the decreasing-radius turn. The NASCAR drivers have gotten so good at road courses, I doubt this would happen again.

The braking area for Three is a left-hand bend (r. 907), requiring one to brake while turning left. Visual tracking involves three quick scans—the left-hand apex of the approach bend, the track-out point on the right-hand edge of the road, and the Turn Three apex. It is easy to run off the outside edge of the road and it is easy to leave two or three feet of room; but it is difficult to use the entire road and only the entire road.

Think sweeper, not brake and turn, for Turn Three. It is pretty fast, and soon you will be cutting across the apex markers all the way to the dirt, and also be using the entire road plus some on the exit.

Turns Four Left Hook to 10 South Bend:

S2: Turn Four (r. 400) is an important corner, not because there is time to be

gained but because there is time to be lost. This turn is the key to Turns Five through Nine (Snake and Climbing Esses), which can be taken flat all the way to the entry to 10, if the car is positioned correctly out of Four. The key to doing Turn Four correctly is simple: Slow the car, turn relatively late, hold the apex and do not allow the car to release more than a third of the way across the track. Be certain to have the car balanced and to drivers left at the turn-in point for Turn Five. When done correctly, it's possible to squeeze the throttle through Five, make an early shift at the entrance to Five-a and concentrate on late apexes and releasing the car through Six and Six-a. Be certain to make a late apex through Seven, Eight and Nine in order to be set for the quick Turn 10 that follows.

Touring Cars: Let me start by saying clearly—Turns Four to Six-a cannot be taken flat-out in a T2/Cup car, and neither can Seven to Nine. You can try—just let me know in advance so I can watch.

But everything else John says about Four to Six-a is correct—late apex Turn Four, release only part way, and squeeze the throttle for Five (r. 106, then 309). Five-a (r. 115) does require a lift, and the finesse you use through Six (r. 288) and Six-a (r. 444) determines how much speed you can carry up to the Climbing Esses.

And—in a T2 car, Turns Seven to 10 are one of the highlights of any road course in North America. Again, John is right to emphasize late apexes. Some claim this section can be taken flat-out. The better argument is whether flat-out, even if possible, is faster than several small and judiciously timed lifts. This section begins the three-dimensional nature of VIR—up and over the crests of the hills, just enough elevation change so you can feel the contact patch swelling to basketball size, then shrinking to golf ball size. From the exit of Turn Four to Oak Tree (Turn 12), you gain 120 feet in elevation. Through the Climbing Esses, Turns Seven-10, you have four distinct elevation changes and gain 100 feet.

I start on the left side of the road, then a late apex in the right-hand Seven (r. 445), then tight and late at the left-hand Eight (r. 475). Sometimes, partial throttle over this first crest feels stable. I try to be left for Eight so I can keep the throttle open through Nine (r. 550), using as much road as I need to the left, but hoping I won't need more than half the road.

Turn 10 South Bend

S2: Turn 10 (r. 185) is a wonderful high-speed corner with camber and elevation changes. This corner is approached in third gear and may be taken in second or third gear, depending on driver's preference. The turn is faster than it first appears. The key to doing it correctly is a gentle use of the brakes, in order not to upset the balance of the car and to keep all four tires loaded. Keeping the car balanced and the tires equally loaded can be best accomplished by slightly early and light braking, as opposed to a later braking with more brake force. In order to help the car through the transition at the apex of 10 and for the elevation change that follows, I find it best to be progressively moving to the throttle just before the apex and to gradually apply throttle all the way to the exit.

Touring Cars: Turn 10, another great turn, is also a sweeper, so brake and turn early but not too much brake, as it is faster than it first appears. As the apex and track out points are blind, expect to run several laps before you can nail it. I find myself braking less and less and apexing earlier and earlier until I drop a rear tire in the dirt on exit, and I know that is about right. I also focus on rolling back into the throttle before or at the apex to maintain speed.

Turns 11 and 12 Oak Tree

S2: The right-hand Turn 11 that follows is similar to Turn Four, in that there is a lot more time to be lost than gained by charging this turn too hard. Though this turn is fast, I believe that the most important part of it is the exit, which sets up Turn 12 (r. 65–sometimes referred to as 11a) and the enormous straight that follows. Turn 12 is a simple turn, taken in first gear, requiring a slightly late apex and rewarding a slightly over steering car. Turn 12 is quite slow and easily over-driven, which will result in a less-than-ideal exit speed and will make ▶

you a sitting duck for a following driver. Therefore, the key to Turn 12 is not over-driving Turn 11, in order to get the entry, apex and exit to Turn 12 just right.

Touring Cars: Turns 11 and 12 remind me of the Turn Six-Seven complex at Road Atlanta—fast in, gather it up in the middle, and a very disciplined throttle application on exit. I have been all over the map on the entrance and as long as I focus on my exit speed, it seems to work well.

Turns 14-15 Roller Coaster

S2: The back straight is long with some rolling elevation changes. The end of the straight is equally as fast as the approach to Turn One, and leads into a very challenging and fun section of the track. Because the car is traveling so quickly, it is important to carry the speed and momentum as far through the left-hand Turn 14 as is practical. However, the second part of 14, numbered 14a, is a right-hand turn that is fairly tight (r. 134) and falls away quickly, which requires a smooth transition for turn in and the discipline not to enter with too much speed. I believe that the quick line through Turns 14, 14a and 15 begins with a late apex on 14. This enables the driver to take a classic apex to 14a and use the compression that follows to turn the car left into 15, while hard on the throttle.

Touring Cars: I agree with John about the importance of the late apex at Turn 14 (r. 290); but I cheat it earlier and earlier until I cannot be late at 14a. I feel I have to be late at 14a (r. 134) or else I am toast. Turn 15 (r. 201) is fun because you are going fast, accelerating quickly, going down into a dip then up, and all the time trying to use all the road on the exit so as to position the car for Turn 16, which starts the turn sequences leading to the front straight.

Turns 16-17

S2: Like Turn 14, Turn 16 is a rather quick left-hander that leads to a fall-away right

Turn Three is the first of the challenging turns-straightforward, but quicker than it initially looks.

THE COUPLE OF TENTHS THAT ARE GAINED BY LATE BRAKING WILL MOST LIKELY ADD MORE TO THE LAP TIME

Turn 17. A downshift to second, a relatively late apex and a balanced car at the entrance to Turn 16 are the keys to entering 17 in a position that will allow an early and smooth application of power. The compression at the exit of 17 should be used to keep the car on the circuit and to continue a right turn, in order to apex 17a, which is the last turn of the course. An upshift from third to fourth is made about the time the pit wall begins.

Touring Cars: Turns 16 and 17 are the final turns before the front straight. Because you approach 16 (r. 423) going downhill, you are accelerating quickly. The pavement flattens out as you enter Turn 17 (r. 165, then r. 727, then r. 165) and gives you increased traction. Therefore, you can enter it faster than if it were flat. Many go too fast into 16 and too slowly out of 17. It should be the reverse. I end up dragging my left-side tires across the Turn 16 apex marker, while focusing visually on the beginning of the apex marker for 17. I hit the Turn 17 apex marker early, relying on the compression to keep me on track. Too fast and you may do a Charlie Lewis—run off into the corn field on the exit and re-enter with corn stalks between the bumper and rear body.

Summary

A review of the lap reveals that the key to this circuit is to go fast where you can but not to overdrive several slow and key turns. Because there are so many fast sections, there is a temptation to carry too much speed into Turns One, 12, 14 and 16. The couple of tenths that are gained by extremely late braking will most likely add more to the lap time due to the compromised position that will result on the exits of those turns. I believe the key to this track is discipline, slightly early and light braking and smooth and early applications of power. VIR is a circuit that will challenge even the best of racers and provides real satisfaction from getting it right. ■