

CONTINUING EDUCATION

Here Be Dragons

On the maps of early explorers unknown and uncharted territories were marked by images of dragons and sea monsters. Our efforts to shave those last two or three tenths off our lap times may feel equally as obscure and intimidating. All too often, however, these efforts result in incidents, damaging not only the cars of the transgressors but also those of other drivers sharing the track. The following quote is relevant on a couple of levels...

"You've got all these things and you try and pull these together and do the whole lot together correctly, and while it is impossible to do a lap of any circuit perfectly, you're striving for the ultimate." Stirling Moss, *VROOM!!*

This quote from Mr. Moss - and there's an extraordinarily similar quote in the same tome from Dan Gurney - describes this pursuit of tenths of a second, and both quotes describe the inescapable knowledge that somewhere, somehow, there is a way to go at least a little bit more quickly. Interestingly, since these interviews were recorded, in the late sixties, the advent of data acquisition (DA) has made great strides in quantifying precisely how far we are from that perfect lap. When a track is divided into sectors and split times are taken, DA software takes the lowest time for each sector and combines them to create a theoretical best lap. This theoretical best lap may be a few tenths of a second quicker for an expert driver, and 10 seconds or more for the novice.

But this isn't why we've chosen this quote. We've chosen it because it's significant that two of the greatest drivers in history have effectively said that they never drove a lap without making a mistake. **So how could two drivers with a combined professional racing tenure of more than 20 years, driving the fastest racing cars in the world, have made at least one mistake in every lap they drove and still be alive today?** The answer is quite simple: they drove mostly within their limits, and their process for extending these limits was incremental and methodical. Further, their experience allowed them see their mistakes very early, when they were easy to correct. **Unfortunately, we see too often at VRG events inexperienced drivers attempting to extend their limits boldly and at times recklessly.** We believe we should see fewer of the following mistakes...

Early-Turn-In: This may be the most common mistake made by all drivers, expert and novice alike. The former, with eyes looking far ahead, recognize it well before the apex and delay throttle input until the car has turned sufficiently to allow exiting under power. The latter, with eyes too low and close, don't realize that they've turned-in too early until they're approaching their track-out. They often do one of the following...

Two-Wheels-Off: Even the best drivers occasionally drop two wheels while experimenting and pushing the limits, but it's still a mistake. Four-wheels-off is inexcusable. **In either case, do not try to prevent it from happening.** Drivers who lift or brake and grab a bunch of steering in an effort to yank the car back on the road invariably spin, and often come back across the track in front of other cars. If your wheels are going to drop, keep your eyes focused down the track (where you want to go), straighten the wheel slightly and settle the car with even throttle. Too much of a lift can induce Trailing Throttle Oversteer, and too much throttle can cause wheel spin. Settle the car and gradually ease it back on the road.

Trailing Throttle Oversteer: This occurs when the driver abruptly lifts off the gas while cornering at or close to the limit. Load transfers to the front tires, which suddenly grip and turn even better, and off of the rear tires, which break lose and begin to slide. Whether it occurs prior to track-out or after a driver has gone two-wheels-off, the dilemma is the same...

Oversteer Slides: Oversteer is when the rear end of the car is trying to pass the front end, and we must prevent this from happening or our slide will become a spin. While there's a fair amount involved in correcting a slide, the most powerful tool we have is proper use of our eyes. Most novices look where the car is going, even when sliding toward an Armco barrier, rather than looking where they *want* the car to go, which would be the track surface some distance down the road. If you're looking at the Armco your hands will think you want to go there, and you will. This is often call over-correction. In fact, it's fairly rare for a driver to over correct. In most cases the driver corrects too slowly or too little, resulting in a spin, or fails to "recover" the steering (point the front tires in the direction they want the car to go) when the rear tires regain grip, resulting in a "tank slapper" (a term borrowed from motorcycle racers). However we screw up our oversteer corrections, chances are they will result in...

Spins: At some point it's impossible to save a slide and it will become a spin. At that point, or even before, a driver should put both brake and clutch pedals to the floor, thus locking the brakes and keeping the engine running. **When you spin, both feet in.** The car will still spin, but it will spin in a straight and predicable trajectory. If the driver is good at spinning, he or she may time locking the brakes so the car spins toward an open area rather than toward a tire wall. Drivers who fail to put both feet in will dart in random directions, often until they hit something, such as a fellow competitor. If it were up to your author, a driver who spins and fails to put both feet in would be put on probation for 60 days in addition to earning the strong disapproval of Messrs. Moss and Gurney.