

LAP 27 — SITUATIONAL AWARENESS

Have you ever experienced the feeling that something unexpected was about to happen just before it did? The human mind has the amazing ability to simultaneously process an amazing amount of information while somehow recognizing situations, comparing them to prior experiences and warning of impending danger. I made a very bad mistake during the start of a race at Texas World Speedway this past February that would have resulted in disaster had the driver behind me not had excellent situational awareness. In a field of 24 cars, I was gridded in sixth place on the outside of the third row. We were two-cars wide and 12 rows deep when the green flag dropped and I accelerated hard up through second gear, reached for third and promptly stomped on the BRAKE instead of the clutch! If a very good driver with great situational awareness had not been directly behind me we would have had a mess. When driving a race car in close proximity at high speeds while assessing brakes, grip, and gauges we need more than just mirrors to properly assess the situation. This is where good drivers develop an awareness similar to having eyes in the back of the helmet that paint a picture of the entire situation.

Having adequate mirrors a good first step. They should be positioned to be easily seen in your peripheral vision while staring straight down the track. You should only need to move your eyes and not your helmet when focusing momentarily on items behind or beside you. The eyes can move very fast, much faster than the head, especially when dealing with the G-Forces generated in cornering or braking. There are two popular designs of rearview mirrors, single panel and multi-panel. Single-panel designs use a convex surface to obtain a wide range of view, typically from one side of the car to the other. This allows them to be relatively small and unobtrusive, many times allowing placement where the stock mirror was mounted. The design does have several flaws, the most serious being a lack of depth perception, which can be critical when assessing the distance between you and a following car, especially when judging relative differences in speed. In addition, the convex surface causes objects at the periphery to appear to move faster than those in the center of the field of view, which can be disorienting. A better solution is a multi-panel mirror providing a wide field of view without a reduction in depth perception. Due to their size, multi-panel mirrors require special mounting provisions but are available in as small as a three-panel unit that is usually adequate.

Now that we've taken care of the rear view, consider adding some side mirrors that take advantage of convex surfaces to allow easy recognition of cars on either side of you. Depth perception is not nearly as important in side view applications because any car seen in a side view that cannot be seen in the rear view is very close. Cars attempting a pass in a braking zone can be seen with a convex side view long after they've left the field of view to the rear.

Due to high speeds, it's highly important to look down the track as far as possible when you drive. The best aware to avoid a problem is to be aware before it happens and have a pre-developed plan of action you can enact when needed.

Having a bailout plan for each developing situation permits reacting as soon as possible when the trigger point is reached. You should always be anticipating actions that are unforeseen. While things like spins and four-offs are common, mechanical failures can and do occur. I've seen driveshafts fail, rear axles completely break, and transmissions completely freeze due to lack of lubrication. Having a bailout plan saved me every time. You should have one, too. Remember, your bailout plan is dynamic and constantly changing as you make your way around the track.

Integrating the information seen through the front windshield with that seen on the mirrors is necessary to develop situational awareness. Using this information, you should be constantly anticipating the position of other cars and the actions of their drivers then updating the situational model in your brain with more input as you make your way around the track. If a car does not appear when and when you expect it to, warning bells should be ringing in your head alerting you to a potential problem. You should modify your driving to minimize the danger until inputs validate the situation and it is no longer dangerous. When in practice, situational awareness becomes a continuous flow that gives you the comfort necessary to make that pass or steer clear of a spinning car while continuing on. In a drivers' education event, this is particularly important because local rules are in effect to prevent dangerous situations that can result when a car slows unexpectedly or makes an unanticipated pass. Breaking one of these rules can make a drivers' education event more risky than when racing where good drivers place their cars in positions that make you slower, it's expected. Making you drive where you don't want to is what a good pass is. You should expect to see cars at anytime and anywhere, that's racing. Without situational awareness this would never be possible.

It's truly amazing how the brain can create a dynamic three dimensional, virtual environment that provides the confidence necessary to race a car in close proximity at high speeds.

Use it to your advantage.

Charlie Jones, a.k.a.
Roadracer

