

Chapter 1

Your first time on track – the basics

This section is for those new to track driving. You might be approaching your first ever track event, or maybe you have been on a couple of trackdays but haven't had much instruction.

Later on in this chapter we will look at the ten basic rules of high speed driving – the ten building blocks upon which every driver develops their skills – but first, let's have a look at how to go about getting on track, and what to do when you get to your first event.

VENUE

The venue for your first event, or possibly your first few forays into high-performance driving, should require some careful consideration. It will be easy to be swayed into booking at one of the famous tracks you've seen on TV, and whilst it is always a special occasion the first time you follow in the wheel tracks of Formula 1 or Touring Cars, there are other things to consider.

I always recommend that your first trackday experience should be at an airfield event rather than a circuit event. There are a handful of operators now running airfield-based events, and whilst they do not have the glamour of



Going for it on a track day. (Courtesy Pieter van Beesten)

Silverstone or Brands Hatch, they do have a host of other advantages.

Airfield venues are made from the runways and taxi-ways of the many

disused or little-used airbases left over from World War 2. As UK motorsport grew in popularity through the '40s, '50s and '60s, some of those venues



Cadence braking will unlock the wheel, returning steering control. (Courtesy Paul Cherry/Britcar)

gently ease back the pressure you're applying with your foot. This will reduce your acceleration slightly and shift a little weight towards the front which will re-introduce some grip to the front wheels. If your understeer is quite dramatic you should act more dramatically. A snap out of the throttle then immediately back on again will momentarily throw weight to the front of the car returning grip to the front axle and stopping the slide. If you reapply the throttle more gently than you closed it you'll not have such a violent shift of weight to the back again, so you will not re-induce the understeer.

LEFT-FOOT BRAKING

Another method for reducing understeer is to use left-foot braking. This works

best in a front- or four-wheel drive car, but can also be effective in a rear-wheel drive vehicle. In a front-wheel drive vehicle, especially one with a large amount of power, this method can also be used to reduce wheel spin, giving you a form of traction control.

It is a difficult technique to master, as your left foot will be mostly familiar with dramatic and quick movements such as disengaging and re-engaging the clutch during gear changes, whereas left-foot braking requires a deft touch and fine-tuned application.

There are two places where left-foot braking can be advantageous: entering the corner, and post apex. Entering the corner, left-foot braking will have a similarly useful effect for front- and

rear-drive chassis, but on the corner exit it will benefit the former more than the latter.

When entering a corner, left-foot braking can help balance the car between the brake and the throttle, controlling the weight shift as you slow before the bend and subsequently pick up the power again. This is obviously most usable on corners where no downshift occurs (as it occupies the left foot).

Let's return to Church corner at Thruxton and imagine ourselves driving a powerful car around the bend. We will need to brake to reduce the speed sufficiently to make the corner. We could do this in a traditional manner, with the right foot coming off the power, applying

STABILITY CONTROL SYSTEMS: PSM, ESP, DSC & MSP

front wheels and removing it from the rear. The stability control system will actually apply a small amount of power to help the back of the car 'sit down' by transferring weight to the rear, and will simultaneously apply the brake on the outside front wheel of the car to slow or stop its rotation.

POWER OVERSTEER IN A REAR-WHEEL DRIVE CAR

In a power oversteer situation, the driver has exceeded the grip available at the rear tyres by turning and applying too much throttle at the same time. The system will reduce the power available to the engine whilst pulsating the brake on the outside front wheel of the car to slow or stop its rotation.

Sometimes the speed of cornering is such that the system cannot fully restore grip – there is not enough available for the car to make the radius of the corner at the speed being

travelled. In this situation the system can only slow the loss of grip. This gives the driver more time to react accordingly to rescue the situation.

You may find, particularly on older cars with the system fitted, that at some point you'll get a warning light flash up saying something like "Stability control system failure." This is due to the system being primarily designed for use in a one-off extreme situation – a bit of over exuberance through a roundabout or a swerve to avoid some stray wildlife, for example – and not to be constantly activated every few seconds. When this message appears it is usually because the electronic components have overheated and shut down to avoid being damaged. Simply drive gently back to the paddock, switch off the car, leave it to cool for a few minutes, and switch it back on. The system should reactivate.

Stability control systems are also

very good on wet events, as they can offer a steadying hand in low grip conditions or through areas of changing grip levels. However, it should be noted that this will increase the wear and heat build up in the braking system, as the car will often be flicking on independent brakes through the corners. When the system is on, you should limit your sessions to avoid overheating the brakes.

Get a good understanding of the stability control system on your car as you do more events, and use it as an educational tool to show you where you have made mistakes. As you do your first few events, note where the system activates around the lap and think about why it has done so. What were you doing with the car to make it react, and how can you improve? As you get better, use the 'Sports' mode if available, and eventually you'll graduate to running without the system active at all.



The author demonstrating power oversteer. (Courtesy Pieter van Beesten)



Dramatic wings on a single seater both help and hinder slipstreaming. (Courtesy David Hornsey)

you can pretty much guarantee you won't be there at the finish!

With single seaters that use aerodynamic wings, the slipstream can be as much – if not more – of a hindrance than a help. The car in front is moving the air away from your car, helping the straight-line speed, but robbing your wings of the air they need to push the tyres into the tarmac for more grip. Following another car too closely through a medium or high-speed corner will result in your car experiencing dramatically less aerodynamic pressure on the wings. This has a greater influence the closer you are to the car in front, and your front wing will be affected more than the rear, usually resulting in



Taking some personal instruction – a great way of improving your technique between races. (Courtesy Pieter van Beesten)

FURTHER DRIVING SKILLS & TECHNIQUES



The author, mid-drift. (Courtesy Pieter van Beesten)

in a straight line this is straight ahead. If you're turning the car, your momentum is wanting to carry on straight out of the arc you are making, and if you let go of the steering wheel that is where the front wheels would go.

So if you think to the first gear oversteer we found ourselves in just now, the momentum is carrying our rear tyres away from our front tyres. If you let go of the steering, the front wheels will turn towards the direction of momentum and straighten the car out. The trick is to

catch hold of the wheel again just before it reaches this point. This effectively means you will still have momentum travelling in a different direction to where the front wheels are pointing, and hence you will continue to turn in an oversteer, or drift.

As well as letting go of the wheel, when you're in a drift you will often find it easier to control the car with just one hand. Use the other one to wave out of the window to show off, or simply rest it on the handbrake or gear lever ready for

one of the other techniques below, but with one hand on the wheel you will have fewer things for your brain to think about, and hence more spare mental capacity to control the car.

Clutch kick

This is a method of initiating a drift or maintaining a failing drift. Dip the clutch momentarily and sharply whilst simultaneously accelerating the engine with the throttle. The re-engaging of the clutch will cause a sudden 'kick,'