

# Be a better driver

PART ONE



Most people can drive quickly in a straight line, but it's in the corners where most of the pleasure can be felt if your technique is good.

## In the first of a new series, performance driving coach Neil Furber gets right back to basics, to explain good driving position and steering

Good technique is a key aspect of fast, safe driving, and a fundamental part of that involves sitting properly behind the steering wheel. Everything flows from a correct seating position; it really is of paramount importance. From my experience sitting alongside thousands of different drivers, I'd say that around 80-90% of drivers don't sit correctly in their car. This can lead to issues with control, comfort and communication with the car.

In the most extreme case I've seen, one of my clients was having to take strong pain medication for every long journey he made, and his job meant that this was happening four or five times every week. However, after a full day's driver coaching, taking my advice and completely changing his driving position, his back and shoulder pain vanished!

### SHADES OF GREY...

With driving, most things are not black and white. So, it's better if we think of many shades of grey, with stronger habits at one end and weaker ones at the other. I'm often asked, 'What am I doing wrong and what am I doing right?' In reality, it's more a question of, 'Where can I improve significantly and where are things working well?'

So with this in mind, what is a good seating position? Firstly, most modern

cars have more adjustment than you may realise. The distance from the pedals and backrest angle are obvious, but the driver's seat often has a range of adjustment for height, base tilt and, particularly with BMW, a range of adjustable support cushions including under-thigh, lumbar and side bolsters. However, I'm still amazed by how few drivers realise that the steering wheel can be moved extensively with most cars, having both height (up/down) and reach (in/out) adjustment.

My suggestions for a good seating position are summarised in the panel here. In practice, this position may turn out to be very different from your usual driving set-up, so the next question is, 'What was wrong with my old position?' To answer that, I'm going to run through some of the common mistakes drivers make.

### BAD HABITS

As many BMWs have automatic or automated gearboxes, there's a correlation with driving attitude that tends to result in very relaxed driving positions. I'll refer to the most common as the 'one-armed-bandit' position. This is an overly-reclined backrest and/or a steering wheel that's set too far from the driver, producing the classic, one-hand-near-the-top-of-the-wheel stance. Often this is accompanied by an elbow on the door and the other hand resting on the gear lever. Hands up

### GOOD DRIVING POSITION?

For a good driving position I'd suggest the following approach:

- With your hips and shoulders against the backrest, slide your seat to a suitable distance from the pedals, allowing full depression of the clutch pedal (or brake pedal in the case of an automatic/automated gearbox), so that there's no need to stretch, and you have a comfortable bend at the knee. Remember that the brake pedal may not fully depress once pressure builds up from several pumps.
- Set the seat height and base tilt as necessary to give a good view and a comfortable position. You may need to tweak the distance from the pedals again if you have changed the height or tilt.
- Adjust your backrest angle to 10-20° rearwards of vertical – this may seem very upright to some of you, but please bear with me.
- Inflate/deflate and adjust the various support cushions as required, if fitted.
- Move your steering wheel both up/down and in/out to provide a position where your arms have a near 90-degree bend at the elbows when holding the wheel at a quarter-to-three position, and your hands are a little lower than your shoulders.
- Finally, you may need to adjust your mirrors due to your new seating position, and it's worth checking that the headrest height is correct, with the centre a little above the height of your ears.



Top: A good driving position – optimal backrest angle, nice bend in the knee, arms bent at 90 degrees and hands just below shoulders. Above: A bad driving position, with straight arms. Although both hands are on the wheel, straight arms will tire the muscles and lead to other bad habits.

### DRIVING BASICS STEERING GRIP

'One-armed-bandit' or hand positions other than quarter-to-three and ten-to-two positions aren't advised. While these may seem more comfortable during long journeys, they all originate from sitting too far from the wheel. Driving with outstretched arms is tiring on the arm and shoulder muscles. Imagine holding weights in the gym with outstretched arms, versus close to the body.

Although you may have adequate directional control of the car for motorways and low-speed manoeuvring under normal conditions, you will have limited control for unexpected emergency conditions (blow-out, skid, hidden pothole, etc.) and such positioning will prevent truly artful steering or communication with the car. Like a golfer who keeps slicing the ball! More on this later.

### BACKREST ANGLE

Excessively reclined or bunched-up, forward of 10-20°, tends to lead to the steering grip issues already mentioned. From a safety perspective, an excessively reclined position can significantly reduce the effectiveness of the seatbelt in a frontal impact, both through excess movement before loading the shoulder strap, or even slipping under the lap belt due to an overly-open hip joint.

The 10-20° setting rearward of vertical gives a good balance of an open hip, but where the torso would rotate forwards against the shoulder strap rather than 'submarining' under the lap belt. It also helps the pelvis sit correctly to minimise lower back pain. A forward-of-vertical position (either backrest angle or hunching forwards) could prove fatal in the case of a frontal impact.

### DISTANCE FROM PEDALS

Too close can be uncomfortable on longer journeys, limit finesse on the pedals and even lead to catching a foot under the brake pedal in an emergency situation. Conversely, sitting too far back from the pedals limits maximum braking pressure for emergencies. In this case, a straight leg reaching out for full brake pressure could lead to a broken hip/pelvis during frontal impact, rather than allowing the knee joint to articulate relatively safely at the moment of impact.

### SEAT HEIGHT

For smaller drivers, sitting too high to get maximum vision can mean sitting too close to the pedals and steering wheel, due to the height difference between the seat and pedals, as well as having their knees very close to the steering column. For taller drivers, sitting high can limit headroom inside the car, as well as upper vision and general comfort. Sitting too low will mean smaller drivers struggle to see out effectively. Clearly, there's a balance to be struck in this respect.



If your seat is set too far back you may have to stretch for an emergency stop. It's also bad to have your legs straight like this as, in the event of a frontal impact, serious bone damage is likely.



## STEERING WHEEL GRIP

■ Fixed-grip steering: Generally best for small steering angles (up to 90°) in gentle, flowing bends. This technique is the favourite for racing drivers due to maximised communication with the tyres when the car is loaded in the bends. It's also easy to find the straight-ahead position.

In some cases, it can be useful to use this technique for 90-180 degrees of steering, such as a hairpin bend but, when you run out of steering lock, your arms will form a pretzel-like knot, or need an inconvenient change in grip.

■ Pull-push steering: When young drivers are taught this badly, they end up with a small-range, shuffling motion. After they pass their test, this is soon felt to be far too slow and gets rejected in favour of 'palming' or some other bad habit. However, those who learn the pull-push technique properly will have a skill for life. I must confess that I had to re-learn this during my quest for artful steering, but haven't looked back since.

For anything more than gentle bends, this is my primary steering method of choice, as I can cater for anything from 90° of steering to full-lock in a smooth, flowing motion and under full control. For road drivers, this technique will make smooth, efficient work of roundabouts, side turnings, T-junctions and car park manoeuvring.

■ Rotational steering: Most drivers have some way of doing this but, sadly, it's normally biased on one hand being more dominant, and often ends up with 'palming' the wheel, or the arms in a knot when trying to take tighter corners.

This technique is best applied to skid control or rapid lock-to-lock movement when manoeuvring in very tight spaces. In both cases, lots of lock is required quickly and the accuracy is less important than the speed. Even so, there are poor, reasonable and excellent ways to do this.



The 'quarter-to-three' arrangement is the optimal steering wheel grip position, as far as I'm concerned.



## I'd say that around 80-90% of drivers don't sit correctly in their car

those of you who can identify with this one. I'm sure that at least half of you will know exactly what I'm talking about!

Another favourite bad habit is the use of one or two hands, low on the wheel. Usually, this is either hand or fingers on the spokes or a grip, near the bottom of the wheel rim, with the most extreme being a simple thumb and fore-finger grip using just one hand at the bottom of the rim.

Although less common, I do see a trend for less confident female drivers to sit very close to the wheel, sometimes even with the backrest set very upright, or even tilted forwards of vertical! More-relaxed male and female drivers of cars with automatic/automated gearboxes, often tend to sit a little too far from the pedals.

Remember those shades of grey? Not the famous 50, of course, but the figurative scale of strong to weak? Although the aforementioned habits are not completely wrong, I think it's fair to say that they don't benefit good driving, but putting them right can produce significant improvements. I'm sure that

most of you reading this would prefer to think of driving as a pleasure, rather than a simple means enabling you to get from A to B at a mediocre level. So spending a bit of time working on the basics can do nothing but good, improving your levels of control, comfort, safety and communication with the car.

## ARTFUL DRIVING

If you are happy to give the improved driving position a go, this is where things start to get interesting. To work towards turning your driving from a basic skill into an art, the most important driver control is the steering wheel. Almost anybody can drive a car in a straight line, even at a high speed, but it's in the corners where most of the pleasure can be felt.

I mentioned the quarter-to-three and ten-to-two hand positions earlier. Both are a good start, although I favour the quarter-to-three position for several main reasons. For a start, the hands have the maximum spacing across the wheel which minimises muscular effort – much like a long spanner versus a short one – so moving the wheel is as easy as it can be.

The steering finesse and range of available steering angle are maximised (for a 'fixed grip' steering input) when using this position. Most automated, manual cars with paddle shift have their paddles

## NEIL FURBER

Neil joins the *BMW Car* team as its resident driving expert. He is a performance driver coach available through his brand, DRIVE 7TENTHS, in addition to working for several top sports car manufacturers, including the Porsche Experience Centre at Silverstone.

Formerly an automotive engineer working with Red Bull Racing during its glory years in F1, Neil brings a unique, technical approach to driver training through a thorough mechanical understanding of the vehicle. Over the next few issues, he will be taking us back to basics with a series of articles aimed at improving our driving.

■ DRIVE 7TENTHS offers a range of performance driver training courses, both on-road and on-track. There will be more information in the following articles but, if this article has piqued your interest, you can always get in touch with Neil through the DRIVE 7TENTHS website at [drive7tenths.com](http://drive7tenths.com) to ask questions or discuss his driver training options.



Left: The wrist test: With your shoulders positioned against the seat back, place your outstretched arm on top of the steering wheel's rim. With the wheel and seat set correctly, your wrist should fall on the rim like this. If it's further forward or back than this, then make the necessary adjustments.

Below: Based on my experience, too many less-confident female drivers sit too close to the wheel, which is bad for a number of important reasons.







Left: The classic, 'one-armed bandit' grip; all too common, I'm afraid. It makes reacting quickly and effectively to an emergency, slow and inefficient.

Below: Gripping the wheel using just the spokes isn't advisable as you're not properly in control of the vehicle.

## To work towards turning your driving from a basic skill into an art, the most important driver control is the steering wheel

aligned with this grip, and they often rotate with the wheel so the driver can have full control of the gears whenever necessary.

If we go back to the shades of grey and various steering habits, we'll find many adequate ways of making a car change direction. However, for maximum control and efficiency, there are three techniques which all start most effectively from a quarter-to-three 'fixed grip'.

Let's cast aside some of the common bad habits – such as 'palming', steering with one dominant hand, turning a hand upside down in the top of the wheel rim and skipping the hands one over the other, etc. The three main techniques which serve well for 99% of all road driving, with efficiency, symmetry and finesse, are detailed in the 'Steering wheel grip' panel.

We'll return to the art of steering in more detail in a future article but, for the next episode I shall be taking a look at vision and planning to improve negotiating the road ahead, before getting properly stuck into cornering systems. ●



Holding the steering wheel with one hand at the bottom of the rim is normally a sign of sitting too far from the wheel.

**MANY THANKS**  
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