

DRIVING TIPS



Sensible Acceleration By Dave Arnott

‘ADVANCED DRIVING/RIDING is the ability to control the position and speed of the vehicle safely, systematically and smoothly, using road and traffic conditions to progress unobtrusively with skill and responsibility.

This skill requires a positive but courteous attitude and a high standard of driving competence based on concentration, effective all round observation, anticipation and planning. This must be co-ordinated with good handling skills.

The vehicle should be at the right place on the road at the right time, travelling at the right speed with the correct gear engaged and can always be stopped safely on its own side of the road in the distance that can be seen to be clear.’

(DSA, IAM, RoADA, 1997)

As you can see from this statement a driver/ride has the capacity to do two things with a motor vehicle namely; control its speed and its position. She or he does this by the amount of pressure applied to the accelerator and/or brake pedal and the degree of directional control they induce through the steering wheel.

This month, I want to talk about skilful and sensible use of the accelerator and how through the development and application of sensible acceleration sense can not only enhance the safety of a drive or ride, but the sheer quality of it.

Determining what the maximum and minimum speed certain categories of vehicles can travel at on public roads is regulated by law and, in some cases, by speed-governors built into the engine of the vehicle and more recently even by satellite; however, at the end of the day what the speed a vehicle travels at up to a point in any given situation will be decided upon by the amount of pressure exerted by the driver/rider’s right foot/hand!

Newton’s second law, the law of acceleration, is defined as ‘*the acceleration is directly proportional to the force and inversely proportional to the mass* i.e. $a=f/m$ or $f=ma$, however; if you don’t mind I think I’ll stick with the one in *Roadcraft*, which defines acceleration sense as ‘*the ability to vary vehicle speed in response to changing road and traffic condition by accurate use of the accelerator*,’ p.58. Much clearer don’t you agree?

Because parts of our body are in direct contact with the vehicle through a hand or foot while operating the accelerator pedal or lever and, assuming that the driver/rider doesn’t have a hearing impairment, gives rise to two elements of sensory interface and judgement i.e. touch and sound.

Through these senses we are able to connect with the vehicle as we apply pressure to the accelerator pedal/lever and either increase or decrease the speed of the engine thereby delivering more or less power to the road wheels and so the faster or slower the vehicle

will go. At the same time, there will be an increase or decrease in the noise of the engine as the revs rise and fall which means, in the case of a manual gear-box that by 'listening' to this sound helps us to recognise if/when we need to change up or down a gear.

You don't have to be a 'speed freak' or have a burning passion to break the land speed record (although as a traffic cop I did come across some motorists who tried (and failed) on the M8 motorway in Glasgow?) to enjoy the sensation of driving or riding at speed. Being able to propel a motor vehicle along a road particularly a motorcycle, give a feeling of personal freedom and the choice to go where we want and how quickly we want to get there, which is why the motor vehicle has become such a popular mode of personal transportation.

As I've discussed there are however, certain constraints laid upon us by society whereby we are expected to drive/ride within the speed limits imposed on public roads that we travel on and, being law-abiding drivers and riders we endeavour to comply with them at all times – well, be honest we try to don't we?

It is a fundamental duty of all drivers and riders to know what the speed limit is on any particular stretch of road that they drive/ride on and for the category of vehicle that they drive (do you know what the speed limit is for a small van in the National Speed Limit on a single carriageway?) And it's not just for the sake of their licence, but it's for theirs and everyone else's safety.

As RoSPA advanced drivers/riders we should set a good example by driving/riding within the statutory speed limits at all times.

Always remember that any maximum speed limit is just that - a maximum speed limit and not a target that has to be met and that regardless what the limit is on a road our aim should be to drive or ride at a speed that is safe for the road conditions within that limit.

How we actually control and vary the speed of the vehicle is important not only for safety, but also for vehicle economy and sympathy as well as passenger comfort.

Like most things in life there's a time and a place, but for normal everyday on-road driving/riding ensuring the safety and comfort of your passenger/s should be your primary concern from the moment they step in to or on your vehicle (how safe and how smooth a driver are will be reflected in the grade awarded at the end of an advanced driving test by your RoSPA examiner.)

When your car is stationary on a level surface the weight is distributed between all four road wheels; however, as soon as the vehicle is driven forward in a straight line most of the weight shifts to the rear and any occupant/s pushed into the back of their seat. Therefore, the greater the forward motion the greater the backward thrust. To avoid any passenger discomfort and maintain traction of the tyres on the road surface always move away from rest smoothly under proper control.

TIP: Whenever you move your car away from rest imagine that there's a half-full (or empty if you prefer?) bucket of water in the boot so that any sudden movement will spill the water. Once you move away from rest however, the bucket disappears, but be careful because it'll appear again just before you bring the vehicle to a halt. To affect smooth acceleration try curling your toes inside your shoe.

Just how good or bad a driver or rider's acceleration sense is during a journey will depend upon how good their observation, anticipation and planning skills are. Often, not looking far enough ahead and to the side, scanning the environment and identifying those areas of actual or potential danger will cause them to use the brake to slow the vehicle down. Not only will this increase wear and tear on the vehicle, but the driver/rider too. Think of the parts of the vehicle that move while applying the brakes i.e. brake pedal/pads/shoes and the associated systems needed to operate those component parts. Then there's the physical effort needed to brake i.e. the driver's right foot pressing down onto the pedal or the rider's foot and hand that all require pressure that can over time cause strain?

Now think about what happens when you decelerate? Pressure on the accelerator pedal/throttle is released and less fuel is being used!

It follows then that if we're going to be sensible about it, when we want to reduce speed gradually it's better to decelerate than brake.

Do *you* think you use the brake to slow your car/bike down too much? One way to find out if you do is to choose a familiar stretch of country-type road and drive/ride along it in your usual manner counting the number of times you use the brake. Repeat the same journey and, allowing for variations such as other road users, try to reduce the times that you need to brake. I should point out that if you do have to brake please, for goodness sake do it!

Other occasions when using (or not as may be the case) the accelerator instead of the brake to reduce speed is when calculating and maintaining a safety gap* behind the vehicle directly

in front of you and when entering a lower speed limit. Not only is this safer but it's more comfortable for your passenger/s.

Other than in an emergency and when turning at most junctions, when you need to reduce speed for other hazards such as a corner or bend, hillcrest or achieving a safety gap in traffic try first relaxing pressure on the accelerator before resorting to the brake.

To do this will require a combination of early observations, keen anticipation and logical planning so you must look further ahead often to the point where your road comes back from and if/when possible beyond. You must then think 'what if?' so that if/when the worse does happen you're prepared. And plan. Plan what you're going to do, where you're going to go and always have an alternative plan if you can. Remember, the word 'surprised' isn't in the advanced driver/rider's vocabulary.

Once you're acceleration sense becomes more developed you'll find that you are more in control of your vehicle, which is what every driver/rider should be also, it'll increase your enjoyment of driving/riding and you'll become more relaxed. You'll also find that you're less likely to exceed speed limits especially when in built-up areas.

Of course, being in the right gear helps when you're trying to control the speed of the vehicle, but that's for another time.

* In good conditions leave a gap of *at least* one metre/yard per mph or a two-second time gap. See Rule 105 of The Highway Code.

For further information on acceleration sense please refer to *Roadcraft* the essential Police Drivers' [Rider's] handbook, Chapter 4.

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We hope that you have enjoyed this newsletter. If you have any comments, suggestions or material, please send them to Dave at the address below.

As ever we are grateful to everyone who contributes to the newsletters.

If you have any material, articles or stories to share with the Group please drop Dave Arnott a line at the address below.

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SYLLABUS 2003/2004

September 1...	Opening night/Assessments
October 6.....	Advanced Driving lecture
November 3...	Traffic Education Support Team
December 1...	Quiz night - Christmas raffle
January 5.....	Police Air Support Unit
February 2.....	Brian Smith
March 1.....	DSA Examiner
April 5.....	Group Training Session
May 10.....	SLC Roads Dept
June 7.....	AGM

GROUP MEETINGS

The regular monthly Group meetings are held on the first* Monday of the month September through to June each year in the <u>Calderwood Community Centre, Blackbraes Road, East Kilbride</u>
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*except for public holidays when it's the second Monday

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Edition 60 September.....	A Class One Driver
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Edition 62 November.....	Roundabouts
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The East Kilbride Group of the RoSPA Advanced Drivers' Association

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