

Braking

The big waste of energy isn't the gas pedal, but the brake pedal. If you press the gas pedal, you always get what you want, converting gas into energy (speed). Pressing the brake pedal is where you are truly wasting gas - turning all that energy into waste heat. Instead of braking, leave more gap in front of you and look well ahead to try to anticipate when you need to slow down, and take your foot off the gas beforehand, 'coast' so you minimize the use of brakes. But when using your brakes, modulate the pedal to suit specific conditions, which is a skill, provided it is done delicately and smoothly.

Here's the definitive guide to braking:

Feel for the take-up of free play at the pedal, establish brake friction contact and sense the initial bite and forward weight transfer of the vehicle.

The preliminary pressure on the pedal must be applied delicately, to avoid jerkiness.

Progressively increase the braking force (pedal pressure) to the required level and be prepared to sense the onset of wheel lock, this is especially important if stopping quickly without the ABS system (non-ABS or 'Regular' brakes) *see below**.

Modulate the pressure as necessary and remove braking force progressively.

If braking to a standstill, reduce braking force just before the vehicle stops, to enable smooth completion.

Another way of looking at this is to think of the pedal at the top (not touching pedal) as 10 and when fully pushed down as zero. When pushing pedal down it's like going one notch at a time; 10-9-8-7-6-5-4-soft to touch - 3 - 2 - very soft – absorb pedal with foot – 1 – stop.

Remember the purpose of braking is to reduce vehicle speed where engine braking and / or road gradient provide insufficient retardation.

Braking should be carried out wherever possible in a straight line, as this maximizes braking efficiency, vehicle stability and safety.

With ABS brakes, remember that its purpose is not to shorten stopping distances (and could in some cases lengthen them) but to prevent the wheels from locking under heavy braking and thereby allow you to retain steering control.

In an emergency, apply maximum (and sustained) pressure on the brake pedal and steer to avoid the obstacle.

**Braking with non-ABS brakes or 'Threshold Braking' is to brake to the point of brake lock-up and ease off and repeat this action until a smooth stop is obtained and is a similar sensitivity to pulling the brakes on a bicycle, this type of braking will help stop you in a straight line. Unfortunately, this is a lost skill in newer drivers because ABS brakes are a standard fixture in all late model vehicles and learning can only be obtained in locating and practicing on a vehicle with 'regular or non-ABS brakes.'*

As ever, all-round **observation skills** should be employed to ensure that any emergency maneuver does not compromise the safety of other road users and should be practiced in a safe place with the help of a professional Instructor.

Note: 'Pumping the brakes' is the biggest fallacy and is old school thought. The only time pumping brakes may help, is when you brake, and the pedal goes straight to the floor, no brakes! This occurrence is highly unlikely to occur in newer vehicles and can be realized before starting any driving trip.

There are two checks that you can make – Static and Rolling.

***THE STATIC BRAKE TEST** is just a matter of pressing the brake pedal when you get into the car. There should be resistance from the pedal; if there isn't and the pedal feels soft or easily pushes to the floor you have probably got a fluid leak and should not drive the car.

***THE ROLLING BRAKE TEST:** Complete your 'rolling brake test' by pressing the brake pedal gently as soon as possible after moving off and while driving slowly. This will reassure you that your brakes are OK before you need them. Note: this is not an emergency stop, simply 'feel' the brakes at five or ten kilometers per hour.

**Weight Transfer when braking causes the front of vehicles to go down and the rear to raise slightly, causing less traction at the rear of the vehicle triggering a 'fish-tail' effect, especially on rear wheel drive vehicles.*