

Use of an automatic gearbox.

All automatic and semi-automatic transmissions operate and behave differently from manual gearboxes and from each other, so always consult the manufacturers' vehicle handbook before you drive a strange vehicle.

It is worth mentioning here that anyone who passed their driving test in an automatic car must not drive a manual car unaccompanied until they retake and pass their test in a manual car. However, drivers accustomed to manual gearboxes will find it relatively easy to adapt to an automatic. They should also readily understand the purpose of a semi-automatic gearbox although the sequential action of the lever and the throttle modulation changes might feel unnatural at first.

The advantages of automatic transmission include less fatigue on a long journey; the fact that while in D the engine cannot be over revved and likely that both engine and gearbox will last far longer.

Typically the selector, either on the floor or on the steering column will be labelled P, Park, N, Neutral, D, Drive, and R, Reverse. It may also have other options such as L for a low gear, typically 1st or the actual gear numbers to allow manual selection. However, this can vary between manufacturers, moreover some auto gearboxes will lock in the gear selected and some will change down but not up to a higher gear if the electronics deem it necessary.

However, there are a couple of things to remember when switching from manual to automatic. First remember that basic principles still apply when starting the engine, engaging forward or reverse (D or R), or when stopping the vehicle ensure that both the parking brake and footbrake are applied. (Some models require the foot brake to be applied to allow selection). Additionally do not rev the engine when selecting D or R.

You will find that when you put the car into D or R without any braking applied (even on an uphill gradient) some cars will creep forward (auto creep). To counteract this apply the foot brake.

Also be aware that an auto's ease of use can promote laziness; do not use 'auto creep' to hold the vehicle on a gradient and do not sit in stationary traffic with the footbrake applied as following drivers may be dazzled by your brake lights. Apply the parking brake as you would with a manual gearbox.

Using the Gearbox options

An automatic gear box is designed to respond to road speed, engine speed and load but it can't differentiate between safe and hazardous situations. Thus it can't decide the correct and incorrect times to change gear. It's therefore necessary on occasions to manually select a more appropriate gear. Many drivers of modern automatics leave the selector in D and don't consider the options built into the system, even though there are times when it is clearly desirable to improve flexibility and vehicle control.

It is impossible to give a definite list, but the following serve as examples;

- When negotiating a series of bends, both road speed and stability can be controlled by better acceleration sense.
- Maintaining position in a slow stream of traffic thus encouraging car sympathy by using your brakes less.
- To reduce the use of brakes when descending a long steep hill. In this case it's safer to slow down at the top of the hill and select your intermediate gear rather than during the descent.
- When you are driving up a long steep gradient the gear may change up and down repeatedly. To avoid this, select the appropriate intermediate gear. Typically a reasonable use of this facility would be when towing or negotiating steep mountain pass.
- When overtaking it's sometimes undesirable for the box to change up as you release pressure on the accelerator. Locking down a gear will prevent this.
- In built up areas to improve control through acceleration sense.

Driving.

Before you start the engine make sure that the selector is in the P position, the parking brake is on and footbrake applied, all this will ensure that the vehicle does not lurch forward when the engine starts. This is particularly the case with a cold engine as it will tend to rev higher due to the choke effect (a richer petrol air mix to help the engine fire up). With the footbrake and hand brake applied move selector to D. With many automatics if D is engaged and no brake is applied the car will creep forward even without the accelerator being touched. It's therefore important to ensure complete control by using the footbrake. Release the hand brake, then the footbrake and a gentle squeeze on the accelerator as heavy pressure on the accelerator will result in harsh acceleration. The transmission will automatically shift to higher gears as road speed increases.

It is still important to have 'gearbox sense'. Because auto's generally have much less engine braking it requires you to adapt your observation skills and 'The System of Car Control' accordingly.

Kick down acceleration.

Rapid gear changes down the box can be made from the D position by quickly depressing the accelerator to the floor. However, when intending to employ kick down you should increase pressure on the accelerator gradually to the final 2 or 3 cm of travel and only then kick down. This will cause rapid acceleration as the transmission automatically shifts down to a lower gear.

The lower gears will be maintained until either:

- The road speed of the car has increased beyond the limit for that ratio or
- You release the pressure on the accelerator.

In each case the next higher gear will be selected.

Stopping.

Slow down by releasing the pressure on the accelerator and when coming to a stop leave the selector in D, but keep your foot on the brake pedal until the parking brake has been applied, always apply the parking brake to prevent creep. However, if you have to stop for some time e.g. in a stationary queue or possibly at traffic lights (not in a stop start situation where D must be kept engaged), N should be selected to avoid excessive heating in the automatic box. To drive off, release the parking brake and gently depress the accelerator.

Use of manual option

Any manual gear changes should always be made within the system of car control when the required speed is reached and within the range of the chosen ratio. When manually selecting a lower gear it's sensible to squeeze the accelerator gently so as to have the engine just pulling a little. This will help the box to change smoothly and efficiently.

Selecting an intermediate gear against the engine compression shows a lack of car sympathy.

Kick Down

Avoid using the kick down when cornering in wet or icy conditions. The operation can be very dangerous on ice especially with a rear wheel drive vehicle. Kick down should only be used when the vehicle is travelling in a straight line or when coming out of a bend and there is an opportunity for a safe overtake. The proven approach of slower in, faster out applies here very clearly. The bend should be entered at the correct speed under gentle balanced acceleration with no kick down until the limit point starts to go away. If you are not concerned with making maximum progress then there is no need to use the kick down procedure at all, simply squeezing the accelerator and using acceleration sense is sufficient. (Note the comments made in Roadcraft page 68).

Finally it must be stressed that in all normal driving the selector should be in D. It's wrong to use the box as though it were a manual box. It is not necessary either to use kick down or to change down manually for a hazard simply because you would change down when driving a manual car.