Car Technology

In-car technology which was once only fitted to luxury or high-end vehicles is now becoming more commonplace. This hand-out offers advice for using this technology to complement your driving. It is not exhaustive but touches on the following areas.

The technology discussed in this hand-out is:

- Auto Gearboxes
- Cruise Control/ Speed limiter
- Anti Lock Brakes (ABS)
- Electronic Stability Programme (ESP)
- Auto Headlamps/ Wipers

Auto Gearboxes

The range of functions available on automatic gearboxes is changing at an incredible speed.

You need to have at least a basic understanding of the system fitted to your vehicle and how to use the it.

It is important that an advanced driver can at least select a gear hold where fitted and appropriate (some hybrid or electric vehicles may not have this function) and operate the gear selector efficiently.

If you have further interest in the functions, consult the manufacturer's guide.

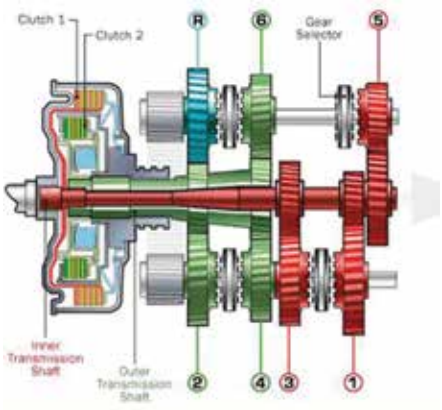
Try to explain the functions in layman's terms to your observer.

As firm acceleration will likely operate the kick down function you need to understand what is happening in the simplest form (the car has selected a lower gear for acceleration) and how to avoid unintended use.

ABS

Aside from limited production exemptions, new cars supplied in the UK since July 2004 must be fitted with ABS.

The important message is it does not



improve braking efficiency, it allows you to retain steering at the point of maximum braking and may allow you to steer out of a situation whilst still slowing.

It is also important to remember, although steering is retained, a skid may still be induced if tyre grip is not sufficient at the speed of travel (Tyre grip is shared between steering and braking).

ABS is a safety aid which may help in emergency situations. It should not be operated as a matter of course and planned progressive braking will help avoid activation.

Auto Headlamps/Wipers

Many of modern vehicles now have the option of setting windscreen wipers and or lights to an automatic setting.

The headlamps will illuminate if a sensor fitted to the vehicle detects a reduction in the available light. Similarly the wipers will start in response to moisture on the screen. Both systems can be a useful aid but neither is foolproof.

The associate needs to know how to operate each in its manual form. In certain reduced visibility conditions an advanced driver may display lights when the automatic system has decided not to. Likewise an advanced driver may decide a certain speed of wipers is preferable to the one chosen by the auto setting.

Electronic Stability Programme (ESP)

From November 2014 all new vehicles registered in the EU are required to have ESP. ESP is a safety aid which in an emergency situation helps drivers maintain control by monitoring steering inputs and

vehicle direction. The system detects when a vehicle is departing from its intended path and automatically applies brakes to the appropriate wheel, endeavouring to point the vehicle in the direction being requested by the steering wheel. Engine power may also be reduced in some systems.

It is a massive step in road safety, but as with all safety aids cannot operate outside the laws of physics.

If a vehicle is being driven in a sensible, planned, advanced manner the system will not be called upon.

The diagram shows how ESP works however Various film clips are available showing ESP in action.

Cruise Control/Speed limiters

These devices will either allow the vehicle to maintain a constant speed or prevent it from exceeding a set limit. With either function it is important to know how to operate and override the system safely.

In most cases the cruise control will have an on and off switch, functions to set, increase and decrease speed also a method of pausing the system and then resuming to the set speed. Operation of the brake pedal will cancel the system and in a manual car operating the clutch pedal will also cancel it.

You should avoid cancelling with brake application unless the information conveyed by the brake lights will be required. Inappropriate brake light applications will cascade to following traffic and may cause over reactions from drivers behind. When possible cancel cruise control using the function button.

Speed limiters also have an override facility: firm application of the accelerator will allow the vehicle to exceed the set limit.

Do not use cruise control in heavy rain or on loose surfaces as it may cause the wheels to loose grip.

Technology

Technology is moving very fast, with everyone starting to expect more and more equipment as standard on their vehicles.

Items that were once rare or optional extras are now becoming part of the standard equipment in our vehicles. Used correctly this technology will serve to enhance your driving experience.