

Road Safety Factsheet

April 2018

Satellite Navigation (Sat Nav) Devices Factsheet

Satellite navigation systems work by using satellites to track the position of the car. The satellites monitor a vehicle's heading, speed, and co-ordinates, which are then cross-referenced against a roadmap or database of zones stored aboard the car. They can then give the driver directions to a destination by comparing the vehicles heading and co-ordinates with the layout of the road network. Several different types of Sat Navs are available to drivers, many of which are built into the vehicle itself.

The use of satellite navigation devices is becoming more common, and around 52% of drivers now have a Sat Nav¹. Therefore, as of 4th December 2017, the learner driver test changed to include most candidates being asked to follow directions from a Sat Nav. This is to ensure that new drivers learn how to use these devices safely.

A well used Sat Nav can help drivers plan routes and prevent drivers from making last minute lane changes or hesitating because they are not sure of the directions, however a badly used Sat Nav can cause a distraction and increase the risk of an accident. A Sat Nav can distract a driver physically through the manual entry of their destination details, visually, by looking at the electronic map or cognitively when the driver focuses their attention on turning instructions or entering their destination into the system². It is important that drivers understand how best to use their Sat Nav and learn not to use it when it may be dangerous to do so. The driver should never re-programme a journey whilst the vehicle is moving or in stationary traffic.

Tips on the safe use of Sat Navs:

- **Plan your journey in advance.**
Sat Navs will help you plan a route, not every aspect of a journey. RoSPA have produced a [leaflet](#) providing advice on journey planning. Planning a journey in advance can reduce the driver's reliance on the Sat Nav at dangerous times, and will also prompt drivers to think about issues such as fatigue and the best time to do the journey.
- **Position the sat nav safely, out of the way of airbags and not obstructing a driver's vision.**
The Highway Code states that windscreens and windows **MUST** be kept clean and free from obstructions to vision. The Sat Nav should not be in your line of sight, but you do not want to have to keep looking down at it. Put it where it will not obscure your view of the road or injure anyone in the event of a collision.

Road Safety factsheet: Satellite Navigation (Sat Nav) Devices

- **Sat Navs will on occasions direct the vehicle down very narrow urban and country roads.**
Take note of any weight restrictions as the route may not always be suitable and in the case of HGV permissible.
- **Find a method of using the Sat Nav that is not distracting to you.**
You can use a Sat Nav while you are driving. However, if the police believe that you are distracted and not in control of your vehicle, you could be stopped and penalised. Therefore, you should not programme your Sat Nav while you are driving. Instead, you should always pull over to programme your Sat Nav.
- **Always make the same observations to keep you safe that you would without the Sat Nav.**
- **Learn from your mistakes and if in doubt, seek refresher training.**
- **Organisations must ensure that staff can use Sat Navs safely.**
Even if an organisation has not provided the Sat Nav system and their employee who is using it whilst at work owns it, they must still ensure that drivers are not using it dangerously.

Choosing a Device

Tips for choosing a Sat Nav:

- **Choose a device that provides vocal directions**
Research suggests that spoken navigation instructions have been shown to be easier to process and respond to than visual instructions or a combination of spoken and visual instructions. One study suggested that spoken navigation instructions have also been shown in real driving conditions to produce better driving performance than visual instructions or a combination of visual and spoken instructions³. Although this study did indicate that interpreting complex instructions did place cognitive demand on drivers leading to poorer driving performance, a study by Virginia Tech Transportation Institute found that voice-based navigation systems are safer than those that rely on visual aids, as the driver can navigate without having to read a map or rely on visual navigation instructions⁴.
- **Make sure that the Sat Nav can be regularly updated**
Many Sat Navs have a feature that allows you to update the map information. It is advised that you select a device with this feature, as roads change all of the time, and the maps on your Sat Nav will need to be kept up-to-date. However, it is really important to use your eyes too, and not over-rely on your Sat Nav. If the road looks wrong, don't take it.

Speed Enforcement Warning Devices

There are several devices currently available on the market that can alert drivers to the presence of speed cameras and accident black spots. They are marketed and sold on the basis that they aim to prevent accidents.

Although drivers are informed about the dangers of the road ahead via road signs and the speed limits of the road, these devices can provide additional information about some areas where drivers need to take extra care - for example around schools and on stretches of road with an accident history.

The Road Safety Act 2006 has made fitting or using a device that detects or interferes with equipment used to assess a vehicle's speed illegal. Devices that warn drivers that they are in an area where cameras are used to enforce the speed limit are not illegal, as they do not "detect" the camera itself.

Speed Enforcement Warning Devices that work in this manner should not be used as a replacement for good observation of the road and vehicle speed. Drivers should use them as a reminder to check the speed that their car is driving at, not as a prompt to only slow down in areas where they are more likely to get caught for speeding. Traffic police or other speed enforcement can still catch drivers who are breaking the speed limit in areas that are not included in the system.

RoSPA have produced a Top Ten Tips for drivers to help them stay under the speed limit-

<http://www.rospace.com/roadsafety/toptentips>

References

¹ GOV UK (2017) 'Driving test changes: 4 December 2017'

URL: <https://www.gov.uk/government/news/driving-test-changes-4-december-2017>

Date Accessed: 13/04/2018.

² Young, K. et al (2003) 'Driving Distraction: A Review of the Literature'

URL: http://www.monash.edu/_data/assets/pdf_file/0007/217177/muarc206.pdf

Date Accessed: 24/11/2016.

³ Dalton, P. et al. (2013) 'Driving with Navigational Instructions: Investigating User Behaviour and Performance', *Accident Analysis and Prevention*, 50: 298-303.

⁴ Virginia Tech Transportation Institute (2011) 'Voice-based navigation is a safer way to get around'