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# Driverless cars: everything you need to know about self-driving vehicles



21 Jul, 2015 4:19pm | Joe Finnerty

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*UK politicians are all aboard for the autonomous car revolution but what should you know about driverless cars now?*

The UK Government is frequently criticised for being slow, cumbersome and paralysed by red tape, but its desire to make the UK the global centre for autonomous car technology is a far cry from that.

Just six months ago, ministers announced £19million would be ploughed into driverless car research, and we have three working prototypes that will begin testing this year. There's also an official code of practice for testing driverless cars on UK roads published

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by the Department for Transport (DfT).

Trouble is, the UK is already behind the autonomous car pace. Google has its well developed vehicle testing openly in the US, while Volvo is the leading manufacturer at its base in Sweden. Audi isn't far behind, while tech-savvy Japanese makers are advanced, too.

• [The Google car: production-ready version of Google's driverless car revealed](#)



Image 2 of 15

So how realistic is it to expect the UK to challenge these heavyweights and lead the way in welcoming driverless cars on to public roads?

A lengthy review suggests very realistic. The Government is taking a "non-regulatory" approach to testing that goes against most other decisions dithered over by MPs.

In the UK, those wanting to test driverless vehicles openly on public roads won't have to gain any certificate or permit. A Code of Practice will be published this spring, which testers will have to adhere to, but there will be no legal hoops to jump through.

All the authorities will demand is that a test driver be present in case of emergencies, a data recorder be fitted and that technology on the vehicle has passed tests on closed roads or test tracks.



Image 4 of 15

Business Secretary Vince Cable told Auto Express this is what makes the UK the ideal test bed compared to rival countries. "In the US and continental Europe, they don't at the moment have regulatory framework to make it possible, which we do," he said.

"I think the other good thing is that in the UK we're developing the technology in parallel with a proper understanding of the rules and regulations."

• [Audi A7 drives itself on public roads](#)

These rules and regulations form part of the Government's 'Pathway to Driverless Cars' review, which lays out the various challenges the industry will need to overcome, including insurance policies, driving licences and car maintenance.

Beyond the legal issues, though, is the technology. Recently, the

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UK has enjoyed a rise in car production, with Nissan expanding in Sunderland, Bentley growing in Crewe, Cheshire, and Jaguar Land Rover (JLR) continuing to invest heavily in the Midlands.



Image 14 of 15

Transport minister Claire Perry added: "I would like to make Britain the centre of autonomous vehicle manufacture. We know all major manufacturers are interested and, as the review has shown, Britain is the ideal place to run trials which need to be real world."

In fact, JLR will be heavily involved in the tests in Milton Keynes and Coventry. According to its director of research and technology, Dr Wolfgang Epple, it's focusing on the driver as much as pedestrians and other road users. "The real-world testing will not only help us deliver a range of new advanced driver assistance technologies, but will ensure the excitement and enjoyment of driving will not be taken away," he said.

"While the car will be able to drive itself if the driver chooses, our aim is to assist and enhance the driver – and ultimately offer levels of autonomy to suit the driver's mood or needs on and off-road."

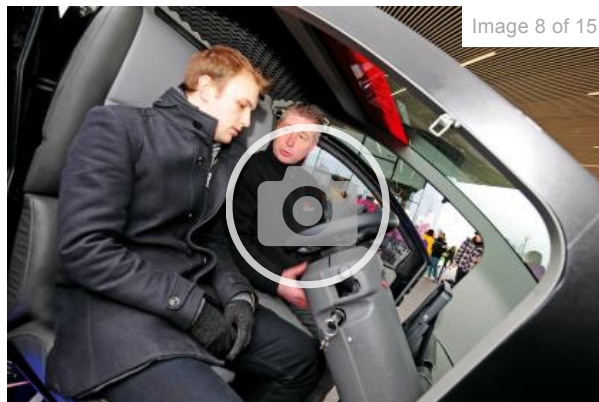


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So with testing approved and manufacturers backing the UK's push to be the best, what about the technological advances? Can we beat our rivals?

Antony Waldock, technical lead on the Bristol trial, which starts in April, certainly thinks so. He told us: "We're taking tech from UK universities, plus small and large companies, and putting it on to the vehicle and understanding how it would work in Bristol."

Antony will oversee a BAE-developed Bowler Wildcat to determine which systems work best for operating a driverless vehicle. So what makes the UK so special?

"I think we have a real opportunity," Antony added. "The Google car is focused on the spinning roof sensor, but that doesn't work in fog, mist and rain, and that's why Google only tests in California. We're looking at radar camera solutions and therefore we can start to develop systems to use in all weathers."

For once, then, the British weather is better than California's, and the UK looks all set for a driverless revolution – but when will motorists be able to hand over control for their daily commute?

Domestic laws won't be amended until summer 2017 and EU

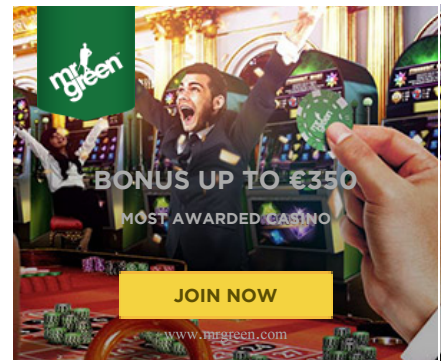




Image 11 of 15

regulations are unlikely to be changed before the end of 2018. So it's likely to be the next decade before a fully automated vehicle is on sale here.

Still, the autonomous car industry is expected to be worth £900 billion by 2025, and the UK wants a majority share. It's a long road from Greenwich to global superpower, and the race is on. It remains to be seen whether we'll take our hands off the wheel first.

### Autonomous cars on UK roads: the code of practice

The Department for Transport (DfT) has issued a Code of Practice for how driverless cars should be tested on UK roads. It highlights procedures, requirements and recommendations for all manufacturers and organisations wishing to test fully autonomous vehicles.

While the vehicles tested will be fully automated, the new Code of Practice dictates there must be a manual override at all times. This also means that a test pilot must sit in each vehicle.

Those seeking to become testers will still need a full licence and comprehensive understanding of automated technology. There will be no reading books or catching up on e-mail either, as the Code of Practice stipulates that the tester must act as if driving the car under normal conditions.

While the testers won't actually be driving the car, the car has to be fully insured like all other vehicles on UK public roads, and the DfT advise all manufacturers to inform local communities and law enforcement of upcoming trials.

Blaming the car for speeding won't help with the police either, as the DfT stipulate that the cars must obey all driving laws and limits. Cars must be fitted with an event data recorder – or black box – to be able to easily analyse an accident in case the worst should happen.

### Legal view on driverless cars



Image 6 of 15

Developing the tech is just one hurdle before drivers will be able to hand control to their car and read the paper or have a nap at the wheel. The Government also faces a huge legal shake-up to make it a reality, with question marks over who'd be at fault in the event of a crash and if motorists would still need a licence.

Transport minister Claire Perry admitted it wouldn't be easy, but said: "We must not be afraid to ask these questions." So how could things change?

### Insurance

In the event of an accident, is the autonomous system at fault or does liability fall on the 'driver'? Driverless cars should reduce the number of claims and subsequently bring lower insurance premiums, and the Government says if a driver can still take manual control then a conventional policy is still needed. If a car is fully autonomous, this may change and some manufacturers may choose to self-insure. Policies could be invalidated if owners fail to keep software and tech up-to-date to prevent cyber threats, however.

### Driving licences

The Government makes a clear distinction between highly automated vehicles – for which existing licence laws remain, as you still have to take control at times – and fully automated vehicles. The latter, which are still some way away from the road, may require changes, as they may appeal to drivers who can't or don't wish to drive conventional cars.

### Car maintenance



Image 15 of 15

EU standards will need to be updated for driverless car production, and that includes ensuring performance of automated systems can be tested cheaply and easily for the annual MoT. Issues could arise if a car can be driven manually, but the automated systems are broken – would this mean it's roadworthy?

### The Highway Code

Autonomous cars will be expected to follow current guidelines, but the Highway Code will need to change to get the most out of them. The tech will allow more accurate driving so, for example, cars could overtake cyclists more closely, while tailgating may no longer be an offence – as running driverless cars close together better uses road capacity and cuts emissions.

## Driverless car tech on trial in the uk

### Gateway



Image 1 of 15

**What's the vehicle?** Meridian shuttle

**Where is the trial taking place?** Greenwich, SE London

**When is it taking place?** Now

**What does it involve?** Passenger shuttle transport and autonomous valet parking of electric cars

**For how long will it last?** Two years

**What are its aims?** To explore reactions of pedestrians and drivers to driverless cars, and look into the legal changes needed

#### Venturer Consortium



**What's the vehicle?** BAE Bowler Wildcat

**Where is the trial taking place?** Bristol

**When is it taking place?** April

**What does it involve?** A purpose-built simulator will be mixed with live trials on private and public roads

**For how long will it last?** Three years

**What are its aims?** To tackle the insurance implications, while also finding out which of the driverless systems works most effectively

#### UK Autodrive



**What's the vehicle?** Catapult pod

**Where is the trial taking place?** Milton Keynes and Coventry

**When is it taking place?** Late 2015

**What does it involve?** Self-driving demos at Milton Keynes rail station; public road tests of semi-autonomous Range Rovers

**For how long will it last?** Three years

**What are its aims?** To understand use of lightweight pods in pedestrianised areas, plus the legal implications of use in city

#### Who else is in the driverless car race?



[BMW](#), [Volvo](#), [Nissan](#) and [Mercedes](#) – with its Intelligent Drive program – are all steaming ahead with self-driving cars.

The new C, E and [S-Class](#) can steer, accelerate and brake for you on the motorway, and Mercedes already has prototypes that can check your blind spots, flick the indicator and pull out – and back in again – to overtake slower-moving traffic.

Mercedes bosses have told us in the past their self-driving models are likely to arrive in 2018. Nissan is working to a similar timescale, and we've ridden in a prototype Leaf that could sense parked cars in its lane and give way to oncoming traffic, before pulling around the obstacle and back into its lane.

BMW's approach has been a little different – it's showcased an [M235i](#) that can drift around a slalom and do hot laps of the Nürburgring. But more sensible tech is coming, with traditional semi-autonomous systems already being developed for the next-generation [7 Series](#).

***What do you think about the prospect of driverless cars coming to UK roads? let us know in the comments section below...***

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**Phil** · a day ago

Think about it, a car that drives you to your work, then begins its daily routine of ride-sharing other people to wherever they wanna go. You might as well stay home, and have your car bring in the paychecks.

^ | ▾ · Reply · Share >

**Robert Murray Willis** · 4 months ago

Information overload. Will telematics, camera and ADAS information need to be kept for a similar period to Parking Tickets and Accounting documents?  
Robert Murray Willis.

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**Vincent Gurr** · 4 months ago

Make cars safer and accessible to those who cant 'drive' but leave the ability to drive in place. If all vehicles are legally allowed to drive themselves think of the number of transport employers taking advantage of this. Does a country still blighted by high unemployment need autonomous technology getting into the hands of transport companies? I don't think so. Also some of us still enjoy driving, when were not stuck in rush hour traffic :).

^ | ▾ · Reply · Share >

**Skin67** · 4 months ago

A driverless car,,, No different from giving the wife the car right now then.

^ | ▾ · Reply · Share >

**Pete Richardson** · 4 months ago

Good summary of the legal and social issues. There's also another consideration - for the issues that relate to cars that have manual override, would that still apply if the car was able to take control before you do something daft? i.e. if it can prevent accidents when you're driving as well as when it drives itself, do we need driving licences at all?

^ | ▾ · Reply · Share >

**Terry de Winne** → Pete Richardson  
· 4 months ago

Probably a senior moment, but I seem to be experiencing a flashback - are we back in the 50s or 60s, when driverless cars last hit the headlines? Only, people were more savvy in those days and, after a short trial, they were deemed impractical.

We already have "driverless vehicles" - they are called trains, buses and trams. Why is lots of my money being wasted on another pipe



my money being wasted on another pipe dream?  
 And Google have got it all wrong - all pedestrians would have to be fitted with air bags to ensure their safety - unless they are already morbidly obese, of course!  
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