

Are Driver Assistance Systems Relevant to Crashes with Pedestrians?

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Progress in urban road engineering, from...



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and



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ITS

To...



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ITS

and



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Traffic calming on residential roads



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- 20 mph zones reduce injury accidents by 60%



The progress of vehicle engineering: electronic safety systems



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Year of introduction	System	Pedestrian relevant?
1971	ABS – prevents wheel lock-up to maintain friction between wheel and road surface	✓
1995	Electronic Stability Control – maintains directional controllability through brake intervention	
1999	Adaptive Cruise Control (ACC) – replaces the driver in the car following task by driving at a set headway	
2000	Lane Departure Warning	
2005	Blind Spot Warning – to assist in lane changing	
2006	Lane Keeping System – applies corrective steering responses to steer the vehicle back into lane	
2006	Forward Collision Warning	
2007	Collision Warning with Auto Brake – intervenes if the driver does not react	



The Volvo Integrated Safety truck



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Features:

- Start Inhibit

NEWS >>

Bosch introduces version of Night Vision that identifies pedestrians

Automotive systems supplier, Bosch, has introduced an enhanced version of its Night Vision system. Night Vision plus is designed to make driving in the dark even safer for drivers and other road users. Like its predecessor, the active safety system provides a high-contrast image of the area immediately ahead of the vehicle. Now, however, this image is also analyzed. Pedestrians are identified and highlighted on the screen. This allows the driver to take appropriate action at an early stage, considerably reducing the risk of accidents involving pedestrians.

Night Vision Plus uses four main components to provide an accurate reproduction of the area immediately ahead of the vehicle. Infrared headlights, whose beams are invisible to the human eye, illuminate the road. The illuminated area is then recorded by a camera which is installed behind the windscreen. The images created are processed by a control unit and shown on a high-resolution display in the cockpit. The infrared headlights have a range of 150m, three times more than common low-beam headlights. At the same time, however, they do not dazzle oncoming road users.



BOSCH
Invented for life

A separate control unit analyses the camera image, pixel by pixel, to pick up the infrared light reflected. Innovative analysis strategies then allow the system to distinguish between stationary and moving objects. When a moving object, for example a pedestrian, is detected, it is highlighted on the

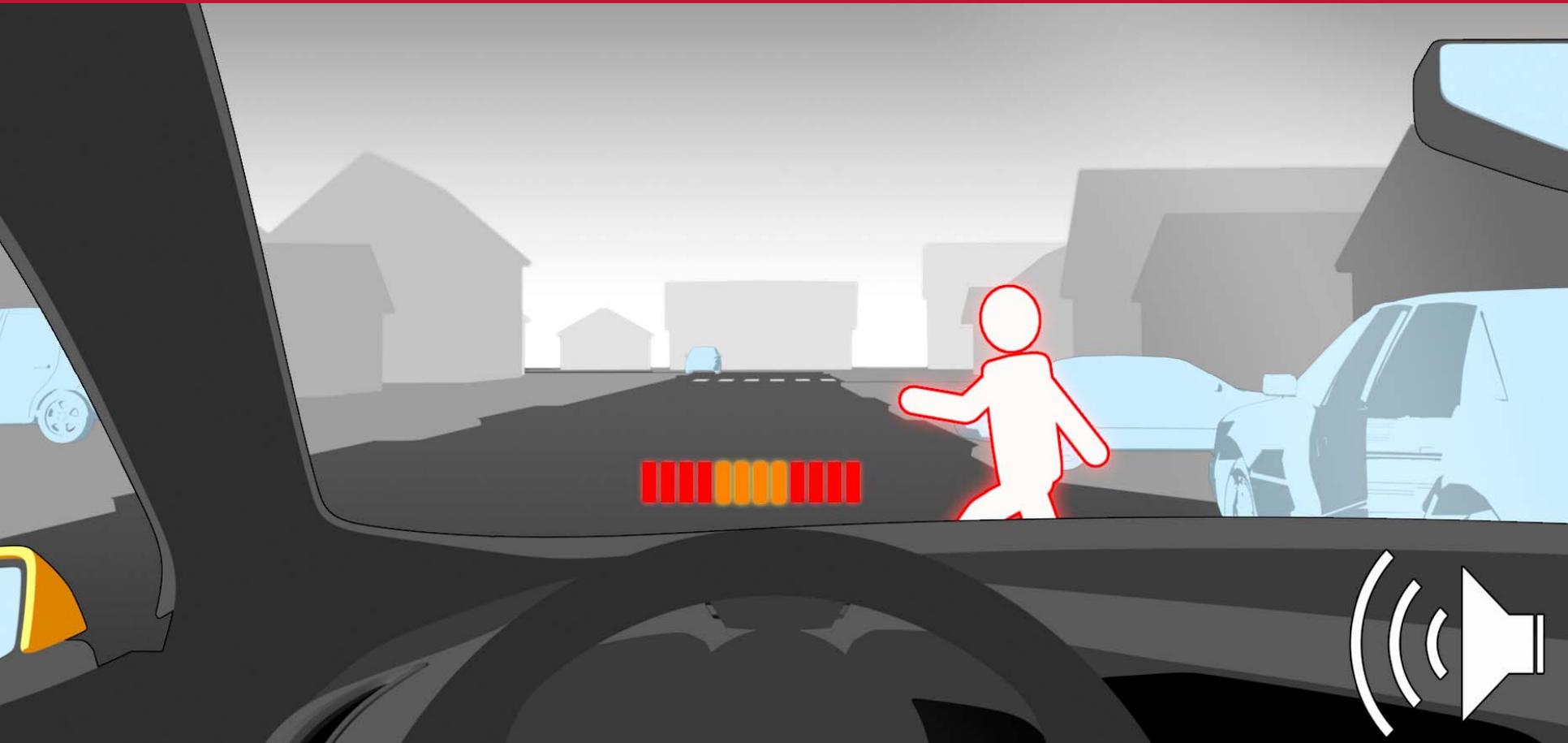
screen display, allowing early reaction by the driver. The first production car to feature this system is the new Mercedes-Benz E-Class. The technology, known within Mercedes-Benz as Night View Assist Plus, is also available on the new generation S-Class.

16 November 2009

The latest (promised for 2010)



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Pedestrian Detection and Braking System from Volvo Cars





An assessment from 1993

“The detection of pedestrians from a vehicle is no doubt technically feasible. The problem is what to do with the information once a pedestrian has been detected. [Given typical pedestrian walking speed and lane width] a pedestrian warning device...would have to start warning all approaching vehicles within 32 m when a pedestrian leaves the kerb. Yet in reality many pedestrians walk faster than this hypothetical speed and are often prepared to accept gaps that the system might regard as unsafe. Thus drivers would receive many false warnings and probably learn to ignore the signal and eventually to disconnect it. Devices that automatically applied the vehicle brakes would solve this problem, only to create another — that of emergency braking in unnecessary situations. Here again the temptation would be to disconnect the device.”

Who? Me

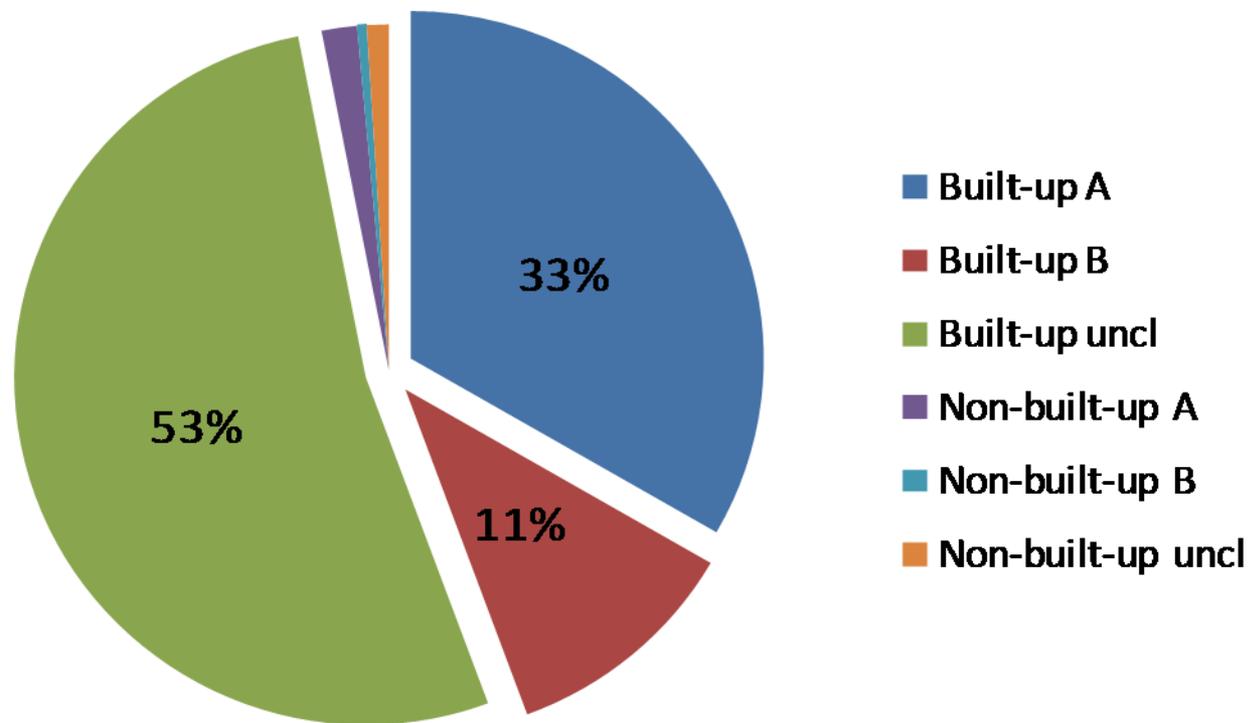
I did not anticipate the progress in sensor performance

Where are pedestrians being injured?



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Collisions Between Vehicles and Pedestrians 2008

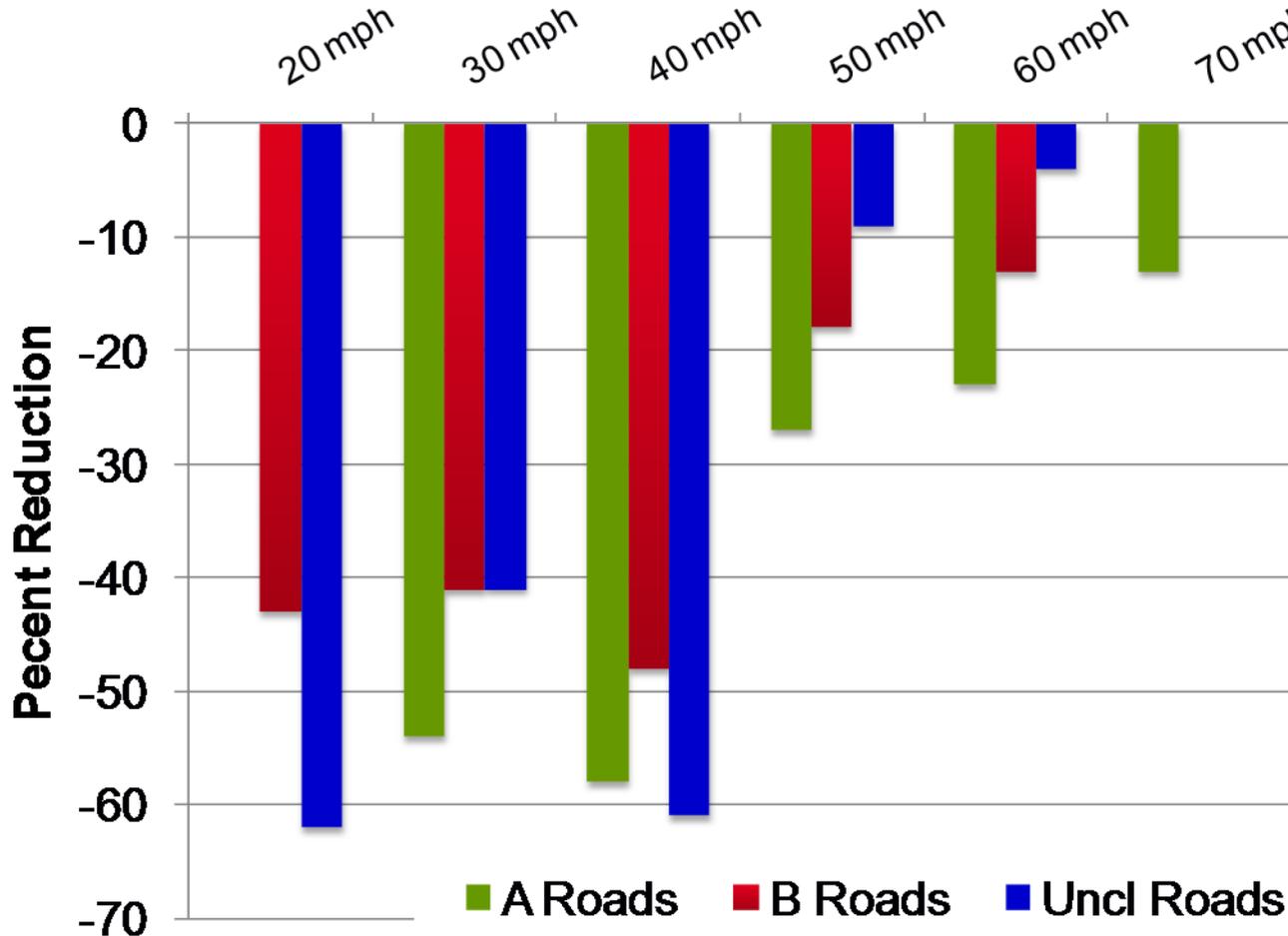


97% are on built-up roads

What reduction in overall crashes would total compliance with speed limits deliver?



Reduction by Road Category and Speed Limit





Combining the two previous charts

- Full speed compliance would result in the following annual reductions in collisions between vehicles and pedestrians:
 - 4854 on built-up A roads
 - 1277 on built-up B roads
 - 6970 on built-up unclassified roads
- ***Total: 13,101 injury accidents***
= 46% of all pedestrians injured

The recipe for estimating the impact of speed compliance



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1. Take observed speed changes from baseline driving (no ISA) to with-system driving from the UK ISA trials (everyday driving in equipped vehicles)
2. Apply models from a large body of research on the relationship between driving speed and risk
 - Where available models in the literature for each road category were applied
3. Combination of the observed changes in speed with the risk prediction gives the numbers presented

What's on the market now?



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Never pay another speeding ticket again!

- Home
- About
- Products
- SpeedAlert LIVE!
- SpeedAlert Data
- Research & Development
- Support
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Products

Choose your suitable solution now



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- * PC Connectivity Cables
- * Safety camera Alerts



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Intelligent Speed Adaptation



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Sunday, February 21



Speed Conscience Standard

Many people speed unintentionally, either due to not knowing the speed limit for the road they are driving on or their mind wanders or they become distracted. The Speed Conscience is software that will inform drivers of the speed limit of the road they are travelling along* together with their current speed.

*****Currently only available on:*****

- **Microsoft Windows Mobile**

*where data available

What the Speed Conscience Can Do For You?

- Tells you what the speed limit is
- Tells you what your speed is
- Traffic light system warns when you're speeding
- You set the speed warning limit

Speed sign recognition – a kind of ISA



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Traffic Sign Memory System



New Insignia's innovative Traffic Sign Memory System recognises speed limit and no overtaking road signs, presenting them on the main display. If you select the speed limit function on the multi-function trip menu, the scanned speed limit is shown permanently until the next sign is recorded. If nothing is recognised, a simple dash will be displayed.

vexia

United Kingdom ▾

Econav Technology. Get the most out of the power of your vehicle.

Thanks to its visual and audio in real time indications (efficient gear, optimal speed ...) you will get the maximum power and performance out of your vehicle in a customized way (over 11,000 models included), achieving 30% fuel and CO₂ savings. (Not to be confused with ecological routes)

The best way to save fuel while respecting the environment

Vexia Econav is the only Satnav in the market which integrates the Econav technology. Thanks to this, you can save fuel and reduce CO₂ emissions by reaching levels such as: up to 500 € per year and more than a ton of pollutant gases.



The weight of three zebras (750Kg) is equivalent to the weight in CO₂ that one vehicle releases into the atmosphere every 20,000 km.





How does it work?

With simple steps you will get the maximum power from your vehicle. Turn on your Vexia Econav and press Select Vehicle. Select make and model of your vehicle, whether it is a petrol or diesel and the year of registration. Save your settings, place your device on the windshield of your car and start driving. You'll be amazed by what you'll see!



Indications in real time



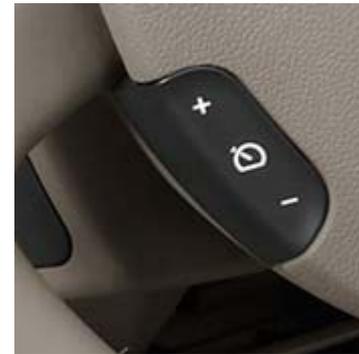
A challenge to vehicle manufacturers



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When will you offer the fitment of ***Intervening ISA*** in its voluntary form (i.e. with the possibility of driver override) as an option?

Note that Renault now offers a ***manual*** speed limiter across its range



A challenge to national government(s)



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When will you deliver:

1. A national digital road map containing speed limits in a standard exchange format?
2. A mechanism to keep the information up-to-date?



Thank you for your attention!
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