RoSPA
The Royal Society for the Prevention of Accidents

Road Safety Information

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Speed Cameras

Drivers travelling at higher speeds have less time to identify and react to what is happening around them. It takes longer for the vehicle to stop. And the crash will be more severe, causing greater injury to the occupants and any pedestrian or rider hit by the vehicle.

Higher speeds also increase the severity of an injury in a collision. Approximately two-thirds of all crashes in which people are killed or injured happen on roads with a speed limit of 30 mph or less.

For car occupants, the risk of being killed in collisions with another vehicle increases with speed. The risk is much higher in a side impact than in a frontal impact. For pedestrians struck by cars, the risk of fatality increases slowly until impact speeds of around 30 mph. Above this speed, risk increases rapidly (between 3.5 and 5.5 times from 30 mph to 40 mph).[1]

Speed and Reported Accidents in the UK in 2010

Inappropriate speed (exceeding the speed limit and driving too fast for the conditions) contributes to 14% of all injuries, 15% of serious injuries and 24% of deaths on the road. Almost 500 people are killed each year on Britain's roads, and 3,000 are seriously injured, because drivers and riders travel too fast.[2]

On its own, exceeding the speed limit, contributes to 7% of all seriously injured road casualties and 14% of all road fatalities, resulting in the deaths of 241 people, and serious injuries to almost 1,500 more people, in 2010.[2]

Unfortunately, most drivers exceed the speed limit at some time. Around half (46%) of car drivers exceed the 30 mph limit in urban areas during free flowing traffic and on 40mph roads, 23% speed.[3]

RoSPA's Top Ten Tips To Stay Within the Limit

Speed Cameras

The Road Traffic Act 1991 enables Courts to accept evidence of speeding from type approved cameras accompanied only by a certificate signed on behalf of the relevant police force.

Fixed speed cameras are located at selected roadside sites, typically a yellow box on a grey pole. Usually, there are white markings on the road to help calculate vehicles' speed and give extra warning to drivers of the camera's presence. Signs in the area warn motorists that speed cameras are present and discourage them from breaking the speed limit. On roads which do not have speed limit repeater signs, the warnings are often combined with a reminder of the speed limit. Mobile speed cameras are moved from site to site according to local accident data.

Newer, average speed cameras involve pairs (or networks) of cameras set at long distances apart. As vehicles pass between the cameras their average speed is calculated. If a vehicle is travelling faster than a pre-set threshold, its details and a colour image are digitally recorded. Digital cameras can send this information directly to a computer which generates the penalty notices.

Using Income from Speeding Fines to Fund Speed Cameras

Revenue from court fines and fixed penalties normally goes to the Consolidated Fund of the Exchequer. However, in April 2000, a pilot trial of a new system to enable fines from speed and red light cameras to pay for the costs of camera enforcement (known as 'Netting Off') began in eight areas: Cleveland, Essex, Lincolnshire, Nottingham, Northamptonshire, South Wales, Strathclyde and Thames Valley. In effect, this meant that the cost of providing and operating the cameras was paid for by drivers who exceeded the speed limit, rather than by all taxpayers. The results were so positive after one year, that the government decided to extend the scheme and introduced the necessary legislation in Section 38 of the Vehicles (Crime) Act 2001.

In April 2007, the Department for Transport changed the funding arrangements[4] so that the fines from cameras stayed with the Treasury (as they do with all fines) and created a separate road safety fund for local road safety partnerships that could be used for a wider range of road safety activities, as well as paying the cost or providing and operating the cameras. This was intended to give local authorities, the police and other local partners greater freedom and flexibility to use a locally agreed mix of road safety measures and to give greater local accountability for the deployment and operation of cameras.

Following the General Election in 2010, the new Coalition Government announced it would no longer provide funding for new speed cameras, and will require local authorities and the police to publish data about speed cameras, including accident and casualty figures, speed levels and numbers of offenders given fixed penalties, prosecuted or offered remedial training.

The Effectiveness of Speed Cameras

Cameras are a very effective way of persuading drivers not to speed, and thereby reducing the number of people killed and seriously injured.

Studies in the UK

An independent review[5] of more than 4,000 safety cameras over a four year period showed conclusively that cameras significantly reduce speeding and collisions, and cut deaths and serious injuries at camera sites.

The review found:

Cameras Cut Speeds

- The number of vehicles exceeding the speed limit at fixed camera sites fell by 70%. The reduction at mobile camera sites was 18%.
- Excessive speeding (15 mph or more above the limit) fell by 91% at fixed sites and by 36% and at mobile sites.
- Average vehicle speed across all new sites fell by 6% overall.

Cameras Save Lives

- The number of people killed or seriously injured fell by 42% at camera sites. This means there were 1,745 fewer people being killed or seriously injured at the camera sites per year – including 100 fewer deaths per year.
- The number of people killed and seriously injured fell by 50% at fixed sites and by 35% at mobile sites.
- There was a 32% reduction in the number of children killed and seriously injured at camera sites.
- The number of pedestrians killed or seriously injured fell by 29% at camera sites.

Cameras Prevent Crashes

- There was a 22% reduction in collisions involving (fatal, serious or slight) personal injury at camera sites. This equated to 4,230 fewer personal injury collisions per year.

A review of the evidence of the effectiveness of speed cameras in 2010[6] examined data from the above four year study plus many other UK and international studies along with data on traffic speeds, collisions and casualties. Taking into account other factors that might reduce speeds, and speed-related crashes and casualties, such as the downward national trend in casualty numbers, regression to mean (as many cameras were installed at sites with untypically high numbers of casualties, casualties might have fallen back towards the average level anyway) and drivers diverting to avoid cameras, concluded that in the year ending March 2004, cameras at more than 4,000 sites across Great Britain prevented some 3,600 personal injury collisions, saving around 1,000 people from being killed or seriously injured (KSI).

The report also concluded that if safety cameras were decommissioned about 800 extra people across Great Britain could be being killed or seriously injured each year.

Previous Research
The first speed cameras in Great Britain were installed in West London in 1992. In the first three years of operation,[7] at the camera sites they:

- Reduced the number of people killed by 70%
- Reduced the number of people seriously injured by 27%
- Reduced the number of people slightly injured by 8%.

A 1996 study[8] found that speed cameras reduced casualties by about 28%.

Initial Evaluation of the Netting Off Pilot Schemes[9]
An evaluation of the 8 pilot areas of the 'Netting-off' scheme over the first two years of their operation found that, on average, the:

- percentage of drivers exceeding the speed limit fell from 47% to 20%.
- percentage of drivers exceeding the speed limit by more than 15mph fell from 7.4% to 0.3%.
- average speeds at the camera sites fell by 10% (3.7mph).
- 35% (280) fewer people were killed and seriously injured.
- 56% reduction in pedestrians killed or seriously injured at camera sites.
- there were 14% (about 510) fewer crashes.

Three Year Review[10]
This Review of cameras in 24 areas over a three year period found they significantly reduced speeding and collisions, and had cut deaths and serious injuries at camera sites by 40%.

International Reviews

There have been two systematic reviews and one meta-analysis (a technique that compiles the results of all the published studies on a topic to produce an overall estimate of effect) which reviewed the published international research on speed cameras and speed enforcement.

The first systematic review of controlled trials and observational studies into the effects of speed cameras, published in the BMJ in 2005,[11] showed consistently that there were reductions in accidents at camera sites, including;

- a 5% to 69% reduction in collisions,
- a 12% to 65% reduction in injuries, and
- a 17% to 71% reduction in deaths

The Cochrane Collaboration published out a second systematic review in 2006[12], which was updated in 2010[13]. These studies only included before-and-after trials with comparison areas and interrupted time series studies. The Cochrane reviews again showed that speed cameras reduce road traffic crashes and related road injuries and deaths. All of the studies which looked at speed as an outcome found a reduction in average speeds following the introduction of speed cameras.

The papers included in the latest study reported that at camera sites there was an:

- 8% to 49% reduction in collisions, with most studies reporting between 14% to 25% reductions.
- 8% to 50% reduction in injury crashes, with most studies reporting between 11% to 44% reductions and
- 17% to 58% reduction in fatal or serious crashes, with most studies reporting between 30% to 40% reductions.

The Handbook of Road Safety Measures includes a meta-analysis[14], of research studies which compared camera sites with similar sites that did not have cameras. This produced a best estimate of the effect of fixed visible cameras, which was a reduction in 24% of all accidents and a 39% reduction in fatal accidents. When the authors attempted to control for the potential of bias due to only the more positive results being published, the reduction in all accidents dropped to 16%.

In locations where fixed speed camera enforcement was more than doubled, there was a 35% reduction in accidents and in locations where fixed speed camera enforcement was increased, but not as much as being doubled, there was only a 17% reduction in accidents.

A meta-analysis of mobile, hidden speed cameras found a best estimate of their effectiveness was a reduction in 10% of all accidents and 16% of fatal accidents.

Conclusion

The evidence for speed cameras shows that they are effective at reducing speeds and preventing accidents, especially in preventing more serious and fatal accidents.

The UK evidence shows large reductions in deaths and injuries where speed cameras have been deployed.

The magnitude and consistency of the results across different countries and types of road provides a high level of confidence that the introduction of speed cameras does reduce accidents at the sites where they are located.

While more research would strengthen the evidence base, the studies demonstrating their effectiveness are the strongest evidence available and must be used to inform decision making.

CAMERAS SAVE LIVES

RoSPA's Top Ten Tips To Stay Within the Limit

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