



Shakespeare Business Centre  
245a Coldharbour Lane  
London SW9 8RR

info@roadpeace.org  
[www.roadpeace.org](http://www.roadpeace.org)  
Tel: 020 7733 1603

## Cameras, cuts, and casualties *promoting responsible journalism*

September 2010

### 1 How many cameras are there?

There has been much confusion over how extensive the safety cameras network is, with many press reports mistakenly referring to 6000 cameras. This figure refers to housings and includes both fixed and mobile sites. But only a fraction of these have a live camera operating.

The ratio of cameras to sites varies between camera type and area. It has also changed over time. A Freedom of Information Act survey of the safety camera partnerships found that there were live cameras at just over 12% – or one in eight – fixed camera sites in 2002-03 and that this had risen to 19% -- just under one in five – in 2004-5<sup>i</sup>. But funding cuts since then have reduced the number of live cameras and Thames Valley Partnership was recently reported to have only 10% of housings contained cameras at any one time<sup>ii</sup>.

Speed cameras are assumed to affect a distance of 1km distance (500m either side). With a total road network of 245 thousand miles, and a generous assumption of one in five camera sites active (about 1200 active), this means that there is about one active camera for every 220 miles. Thus less than 0.5% of our road network will have active speed enforcement at any one time.

### 2 What is the evidence of effectiveness?

There have been more large scale evaluations of safety cameras than any other road safety measure in Britain. All have found cameras to be effective in reducing speeding, collisions and casualties. The last major review was the four year national evaluation published in December 2005. Analysing over 4100 camera sites with at least one year of operation in 38 safety camera partnerships, findings included:

#### ***Reduction in speeding***

At fixed camera sites, the number of drivers breaking the speed limit dropped by 70%, almost 4 times than that at mobile camera sites (18%). On average, vehicle speeds drop by 6 mph after cameras are introduced. Fixed cameras had an even greater effect on extreme speeding; the number of drivers exceeding the speed limit by 15 mph or more fell by 91% at fixed cameras sites and by 36% at mobile sites.

#### ***Reduction in casualties and deaths***

The number of people killed and seriously injured (K/SI) fell by 50% at fixed sites and by 35% at mobile sites. All together, there were 1745 fewer KSI casualties before RTM, including a reduction of more than 100 fewer deaths. Children K/SI fell by 32% and pedestrian K/SI by 29%<sup>iii</sup>.

Since then, a international systematic review by the Cochrane Collaboration published in 2009 also found cameras effective at reducing speeding, collisions and casualties <sup>iv</sup>.

### **But what about regression to mean?**

Regression to the mean (RTM) is a statistical phenomenon of a time series returning to its natural mean level<sup>v</sup>. It complicates the assessment of any safety intervention introduced in response to an unusually large number of crashes, as a simple comparison of before and after casualty rates will tend to overstate their impact. Campaigners against safety cameras frequently cite RTM as a reason to disregard the evidence produced in their support.

The challenge in assessing safety cameras (and other interventions) is to disentangle their effects from those of the RTM and any other factors compromising the before and after comparison, such a background trends. The most recent national evaluation of safety cameras included a study of RTM and estimated that:

- RTM accounted for 7% of the fall in personal injury collisions (PIC) and 35% of the fall in fatal and serious injury collisions (FSC). This was the equivalent of one-quarter of the observed fall in PICs and three-fifths of the observed fall in FSCs.
- RTM was significant for mobile camera sites but not for fixed cameras. The study found that ***“at the fixed cameras the estimated reduction due to RTM effects is small (2.5%) and not significantly different from 0”***.
- After allowing for long-term trends and RTM, the average effect of the 216 cameras was a reduction of 19% in PICs and FSCs<sup>vi</sup>.

These findings could not be extrapolated nationally as the RTM sample was not representative. With only 216 sites from urban roads in nine safety camera partnerships, it consisted primarily of mobile camera sites (76%) and thus did not reflect the national situation where fixed cameras outnumbered mobile cameras, and the over 4000 sites in 38 partnerships included sites on rural roads.

Other studies of cameras that have adjusted for RTM still find significant safety gains from safety cameras, though these vary. Hess found that injury-accident numbers fell “an astounding 46%”<sup>vii</sup>.

## **3 And what about Swindon?**

In August 2009 and against police recommendations, Swindon Council turned off its three fixed speed cameras but kept its 13 mobile cameras operating. And the police have since been using mobile cameras at the fixed camera sites<sup>viii</sup>.

The Daily Telegraph reported that, in the nine months following this, fewer people have been killed and injured on Swindon’s roads, with casualties dropping to 315 for the area as a whole compared to 327 in the same period in the previous year<sup>ix</sup>. A Council spokesperson suggested that these figures vindicated their decision. But only 15 casualties were reported at the three fixed camera sites in the year before they were turned off, less than 5% of Swindon’s total road casualties. The base number and its change are too small and background year-to-year variability is too high for any reliable conclusions to be drawn one way or another.

In short, it is too early to tell if Swindon’s switch from fixed cameras to mobile cameras has affected casualties, especially at a time where road casualties are reducing nationwide.

## 4 So why are local authorities turning off cameras?

As promised in their press release last October, the Conservatives have ended central government funding for fixed speed cameras<sup>x</sup>. They have abolished the road safety capital grant which funded the installation and maintenance of the safety cameras (including red light cameras). Local authorities are now required to find new sources of funding if they are to continue speeding and red light running enforcement with cameras. But in addition to the 100% cut of the capital grant, road safety revenue grants have been cut by an average of 27%<sup>xi</sup>.

The Conservative justification for this was that our road safety record was slipping and that there were more effective alternatives.

## 5 Is our safety record slipping?

Britain remains at the top of the international league for road safety. On the basis of road deaths per 100,000 population, in 2008, Britain and Sweden had the lowest road deaths per 100,000 population (4.3) and the year before, Britain (5.0) was second to the Netherlands (4.8).<sup>xii</sup>

And our road safety record has continued to improve in the last year. In June 2010, the DfT announced that road deaths had fallen by 12% to 2222 in 2009. Child road deaths fell by an astonishingly 35%. The government's ten year target of reducing the number of people killed or seriously injured by crashes by 40% (compared to 1994-98) has been met a year early and even exceeded. Much of the credit, but not all, is due to safety cameras.

## 6 Are there more effective alternatives?

The Conservatives have claimed vehicle activated signs are more effective than cameras, quoting a 2003 TRL study of over 60 installations, located mainly on rural singleway carriageway roads in four local authorities. Apart from one local authority that had collision data, the effects of vehicle activated signs on collision frequency were estimated based on change in speed. This study did not consider RTM<sup>xiii</sup>.

In their 2006 report **Roads Policing and Technology: Getting the right balance**, the House of Commons Transport Committee stated *"Well-placed cameras bring tremendous safety benefits at excellent cost-benefit ratios. A more cost effective measure for reducing speeds and casualties has yet to be introduced"*.<sup>xiv</sup>

More recent evidence of VAS has not been encouraging. In 2008, a study of 10 sites where speed indicator devices were used in London reported a novelty effect which did not last much longer than two weeks. An average speed reduction of 1.4 mph was achieved which would predict a reduction in casualties of 5.6%<sup>xv</sup>.

### *Isn't education more important than enforcement?*

Education is being provided by cameras. Drivers exceeding the speed limit by a few miles, and for the first time, are given the option of attending a speed awareness course. In Dorset, almost half of the speeding drivers detected were sent on a speed awareness course. (ref). Without cameras, no such widescale remedial educational programmes will be possible.

RoadPeace would welcome any alternatives that were proven to be more effective than safety cameras.

## 7 Public support for cameras

Drivers, or at least AA members, support the use of speed cameras. Polls of AA members have consistently shown support for cameras with the most recent (almost 15,000) reporting 69% accepting the use of cameras<sup>xvi,xvii</sup>.

The national evaluations of safety cameras included reviews of public support. The four year evaluation reported a high level of public support with 82% questioned agreeing that cameras should be used as a method of reducing casualties, slightly higher than the 79% reported in the three year report. It did note the concern that cameras were more associated with revenue raising and not casualty reduction<sup>xviii</sup>.

The British Social Attitudes Survey has found less support for cameras. Whilst the 2008 survey reported the public tended to see speed cameras as saving lives, they were more likely to think that there were too many of them. Over half thought speed cameras were 'mostly there to make money', although 90% did agree that people should drive within the speed limit<sup>xix</sup>.

It should not be forgotten that whilst drivers are conscious of the pain of the financial burden of a fine, penalty points and time spent attending a speed awareness course, they are not aware of when they have escaped involvement in a collision, injury or death due to reduced vehicle speeds.

Media coverage may also have played a role. Safety cameras have been described as transport's MMR in light of the negative and unbalanced coverage they have received in many of the tabloid and regional newspapers. The extensive and largely unquestioning coverage of the Tax Payers' Alliance report on speed cameras is just the most recent example of this (See RoadPeace website for a report explaining the flaws in their analysis).

Local newspaper coverage was much more positive. Monitored in twenty partnership areas over the first four years of the programme, local press reports were 67% supportive, 18% neutral and 15% negative<sup>xx</sup>. With local newspapers more reflective of local concerns, this is not surprising as communities are much more likely to campaign for speed enforcement or reduction than for tolerance around speeding on their roads. Speeding vehicles were reported as the leading type of anti-social behaviour by the British Crime Survey<sup>xxi</sup>. When the national camera partnership was being rolled out, a survey conducted by Transport 2000 (now Campaign for Better Transport) estimated there were over 10,000 requests for cameras by communities each year<sup>xxii</sup>.

## 8 Revenue raising or self-financing?

Instead of being lauded as self-financing, cameras have been criticised for generating revenue for the government. Given operating costs of cameras have exceeded speeding fines in recent years, this argument is no longer even relevant. Fixed penalty notices (FPN) for speeding peaked in 2004 with 1.8m paid. Speed awareness courses were rolled out nationally the next year and by 2008, the number of speeding FPNs had reduced by 1/3 to 1.2m.

RoadPeace has long argued that speeding fines should be part invested in trauma care and rehabilitation services for the injured, as in the US when seat belt laws began being enforced and more recently, in Australia with investment from speeding fines in brain injury rehabilitation. Camera fines could be invested in establishing the new trauma networks, as road crashes are responsible for the most common type of casualty treated at the new trauma hospitals.

Note: This is not the first time that RoadPeace has tried to promote accurate reporting by the media. In 2005, RoadPeace and the Slower Speeds Initiative produced a safety camera briefing pack which included a handout on **How cameras can help reduce speeding—the leading contributory factor in fatal crashes and the most common type of anti-social behaviour**.

- 
- <sup>i</sup> <http://www.foiacentre.com/newscameras050721.html>
- <sup>ii</sup> Forster A (2010), 'Could localism agenda save speed cameras from the scrapheap1, LTT551 06 August-19 August 2010, pg 6.
- <sup>iii</sup> [http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/coll\\_theationalsafetycameraprogramationalsafetycameraprogram4598.pdf](http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/coll_theationalsafetycameraprogramationalsafetycameraprogram4598.pdf)
- <sup>iv</sup> [http://www.thecochranelibrary.com/SpringboardWebApp/userfiles/ccoch/file/Safety\\_on\\_the\\_road/CD004607.pdf](http://www.thecochranelibrary.com/SpringboardWebApp/userfiles/ccoch/file/Safety_on_the_road/CD004607.pdf)
- <sup>v</sup> Hess, Stephane (2004) *An analysis of the effects of speed limit enforcement cameras with differentiation by road type and catchment area*, Transportation Research Record, 1865, pp. 28-34 [http://www.stephanehess.me.uk/files/Hess\\_2004.pdf](http://www.stephanehess.me.uk/files/Hess_2004.pdf)
- <sup>vi</sup> [http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/coll\\_theationalsafetycameraprogramationalsafetycameraprogram4598.pdf](http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/coll_theationalsafetycameraprogramationalsafetycameraprogram4598.pdf)
- <sup>vii</sup> Hess, Stephane (2004) *An analysis of the effects of speed limit enforcement cameras with differentiation by road type and catchment area*, Transportation Research Record, 1865, pp. 28-34 [http://www.stephanehess.me.uk/files/Hess\\_2004.pdf](http://www.stephanehess.me.uk/files/Hess_2004.pdf)
- <sup>viii</sup> LTT article August 2010
- <sup>ix</sup> <http://www.telegraph.co.uk/motoring/news/7931842/Speed-camera-switch-off-sees-fewer-accidents.html>
- <sup>x</sup> Conservative press release
- <sup>xi</sup> Foster *ibid*
- <sup>xii</sup> <http://www.dft.gov.uk/adobepdf/162469/221412/221549/227755/rrcgb2008.pdf>. Note: Iceland and Malta report a lower rate but with road deaths of 15 or less.
- <sup>xiii</sup> [http://www.trl.co.uk/online\\_store/reports\\_publications/trl\\_reports/cat\\_vehicle\\_engineering/report\\_vehicle-activated\\_signs\\_-\\_a\\_large\\_scale\\_evaluation.htm](http://www.trl.co.uk/online_store/reports_publications/trl_reports/cat_vehicle_engineering/report_vehicle-activated_signs_-_a_large_scale_evaluation.htm)
- <sup>xiv</sup> <http://www.publications.parliament.uk/pa/cm200506/cmselect/cmtran/975/975.pdf>
- <sup>xv</sup> <http://www.tfl.gov.uk/assets/downloads/effectiveness-of-SIDs-summary.pdf>
- <sup>xvi</sup> [http://www.theaa.com/public\\_affairs/aa-populus-panel/aa-populus-aa-road-safety-manifesto.html](http://www.theaa.com/public_affairs/aa-populus-panel/aa-populus-aa-road-safety-manifesto.html)
- <sup>xvii</sup> <http://zone.theaa.com/blogs/detail/35/>
- <sup>xviii</sup> [http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/coll\\_theationalsafetycameraprogramationalsafetycameraprogram4598.pdf](http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/coll_theationalsafetycameraprogramationalsafetycameraprogram4598.pdf)
- <sup>xix</sup> <http://www.natcen.ac.uk/pzMedia/uploads/EntityFieldFile/715a9e3b-bafc-4ff0-9487-17413a108335.pdf>
- <sup>xx</sup> [http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/coll\\_theationalsafetycameraprogramationalsafetycameraprogram4598.pdf](http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/nscp/nscp/coll_theationalsafetycameraprogramationalsafetycameraprogram4598.pdf)
- <sup>xxi</sup> British Crime Survey
- <sup>xxii</sup> <http://www.parliament.uk/documents/post/postpn218.pdf>