

# A critique of the ***The National Safety Camera Programme Four-Year Evaluation Report, UCL, PA Consulting, 2005***

Since 2007, I reviewed many of the claims for the road safety benefits of speed cameras and had extensive correspondence with camera partnerships, councils and their representatives, police, PACTS (Robert Gifford), Dr Linda Mountain and many other interested parties (IAM, RoSPA, AA, BRAKE, etc).

In summary, I found a community who have convinced themselves that cameras "save lives". I became deeply disturbed by the string of unsupported claims, often propped up by bogus arguments or calculations. Much of it seemed to stem from the PA Consulting Evaluation Reports.

When I first read the PA Consulting 4-Year Evaluation Report, I was struck by the choice of the four measures of success/effectiveness, none of which actually proved that cameras provided a net safety benefit or, indeed, any safety benefit at all. The rest of this paper explains why.

Taking each measure in turn:

- **"vehicle speeds were down at camera sites"** - with no clear link to road safety improvement in terms of likelihood of collisions, and hence no proven road safety benefit. It may be possible to claim a benefit if there were a history of collisions at a site where the root cause of those collisions was speed in excess of the limit. No such claim was made. Note that there was no assessment of impact on speeds away from camera sites.

TRL421 is often cited to claim that reducing speeds improves safety but that report has been dissected and discredited on various occasions<sup>1</sup> and the method used, and its conclusions, are deeply flawed. It did not establish a causal link between speed and accident rates but, instead, used some highly dubious techniques to analyse data from statistical models and drew false conclusions from them.

I would agree that increasing speed to, say, 30% above the prevailing limit would be likely to increase collision probability but the oft quoted (or misquoted) claim that "For every 1% reduction in average traffic speed, crashes reduce by an average of 5%" is self-evident nonsense. This quote is used in the Four Year Evaluation Report. Given that speed is a main cause of so few collisions (5% is generally accepted) then a small change in average speeds cannot possibly have much effect, especially when the speeds are already below the 85<sup>th</sup> percentile. Not to mention there being no consideration of the negative effects of driving slower, such as inattentiveness, drowsiness, etc. which could offset any possible benefit.

Without a credible response to ***the Bridgstock Conjecture*** showing how a speed camera slowing a vehicle can prevent a collision, then **no** safety benefit claim based on of reduced speeds can be deemed valid.

- **"casualties and deaths were down at camera sites"** – but, given that cameras are installed after an atypically high cluster of collisions, selection effects such as regression to the mean would virtually guarantee that was always likely to happen, regardless of any measures taken at the sites. The report presented no proof that the camera influenced the result in any way (any benefit would likely come from signage, engineering, statistical trends, improved vehicle design, displacement (vehicles avoiding the camera routes), etc.).

Dr Linda Mountain confirmed in Sept 2008 that claims for cameras had been inflated and the RTTM effect was underestimated. As a result I contacted her and issued the following challenge (which I have also sent to several other relevant parties, and which forms the basis of my conjecture):

Much of my team's work involves putting together accident sequences - identifying a hazard, and an accident it could cause, and then the accident sequence, and the mitigations (safety features, probabilities, etc) that could reduce the risk of that accident to a tolerable or acceptable level. Most road safety devices have a clear link to preventing collisions or preventing injury - seat-belts, traction control, anti-lock brakes and crash barriers, for example, all can easily be explained and many people will testify that their lives have been saved, or a crash has been prevented, by them. As far as I can see, such a linkage does not exist for cameras.

**Can you describe an instance of a collision (real or imaginary) where it could be claimed that a speed camera would have prevented it?**

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<sup>1</sup> TRL reports had been discredited and disowned. See the following critiques of them by the late Paul Smith:

<http://www.safespeed.org.uk/trifudge.html> and <http://www.safespeed.org.uk/trl421.html>

The authors may not have explicitly and openly disowned them, but they evidently declined to respond to direct challenges from Paul Smith to the claims in their reports. As a safety professional, I would be ashamed to find myself in the position of being unwilling or unable to justify or argue any claim made in my safety reports. By not responding to such challenges, they have effectively disowned them. Apart from anything else, the basic claims they make are not credible.

Dr Mountain was unable to provide a credible answer, nor has anyone else.

Without a logical, credible link between the camera and a road safety benefit (in terms of a collision prevented), the claims based on statistics have no credibility - they are little more than wishful thinking.

In contrast, at the inquest into the death of Mrs Myra Nevett in 2004, the Coroner considered that a speed camera contributed to the tragedy. Quoting from the BBC website...

*John Pollard, the Stockport Coroner, partly blamed the death of Myra Nevett, 69, in a road traffic accident in Disley, Greater Manchester, last year on the presence of a camera. The coroner said roadside yellow cameras can distract drivers "even momentarily" who glance upwards and at their speed rather than the road.*

*Arthur Hadfield, the motorist involved in the accident, has been charged with driving without due care and attention and will appear before Stockport magistrates next year.*

*The inquest was told that Mrs Nevett, a retired school bursar, was fatally injured on December 16 as she crossed the A6 on her way home. She died in Stepping Hill Hospital, Stockport.*

*Mr Pollard told the hearing that the speed camera could have caught the attention of the driver at just the wrong moment.*

*His view was endorsed by PC Michael Jeffrey, the accident investigator at the scene. He said: "They do tend to divert drivers' attention away from other areas and they concentrate solely on their speed."*

Then there is this report from Feb 2009:

*A DRIVER may have been killed because he braked suddenly after spotting a speed camera.*

*Police say Graham Davies, 45, is unlikely to have even been speeding when he lost control of his car.*

*The businessman died instantly when his Skoda Fabia hit a lamp-post near an accident blackspot on the A9. Traffic policeman George Fergus claimed braking was a natural reaction for any driver unaware of their exact speed.*

*He told an inquiry: "Witnesses said that, for no apparent reason, the victim's vehicle braked heavily, there was a lot of smoke and the car veered left and collided with the lamp-post."*

*Graham, of Stockton-on-Tees, crashed near Auchterarder, Perthshire.*

*Fergus added: "There is no reason to believe Mr Davies was speeding.*

*"However, we find many drivers - when approaching a camera - see the camera or road markings and it is a natural reaction to brake hard then check their speed and accelerate again.*

*"I believe that is what has happened here.*

*"He has braked hard then lost control."*

*Perth sheriff Michael Fletcher will issue a fatal accident inquiry report on the tragedy last May.*

I have had extensive contact with the brother of Graham Davies, and have detail about the tragedy (including correspondence with the Coroner and photographs and sketches from the accident site), which further fuels my belief that cameras are more likely to contribute to deaths than prevent them.

The death of Mr Davies is not an isolated incident. It may be that fatalities are comparatively rare, but the familiar sights of brake-lights and skid marks near speed cameras suggests that there are plenty of less serious incidents and near-misses. It is inconceivable that other collisions have not been triggered by speed cameras. The HA Roadworks report confirmed that such behaviours are widespread.

In April 2008, the BBC showed footage, supplied by Norfolk Camera Partnership, where vehicles were crashing as a result of their over-reaction to seeing mobile cameras. The footage was soon withdrawn from the BBC website, but copies are available. I spent 30 minutes on the phone to John Fairey at the Norfolk Partnership on this and related issues – he was clearly on the back foot trying to defend the indefensible.

Driving involves positioning your vehicle relative to the road layout and other road users, proceeding at an appropriate speed, in the appropriate gear, and monitoring and adjusting those using the steering wheel, pedals and other controls, in response to hazards. It also involves observing, and signalling intent to other road users. Good drivers develop the ability to do all of these instinctively and even poor drivers manage to do most of them fairly well most of the time. Speed management, and speed cameras in particular, focuses a disproportionate amount of attention on just one aspect of driving - speed - reducing the time and attention available for the others. When most collisions involve misjudgement, poor observation or a lack of concentration, it is inevitable that such interventions will increase risk to all road users and contribute to more accidents than they could ever prevent.

Further, if you force drivers to go at an artificially slow speed (technically below the 85%ile) they will undertake other activities (change CD, use mobile, eat a sandwich) which will erode any safety margin possibly created by the reduced speed. The rules for camera deployment include one that says the prosecution threshold (limit + 10% + 2mph) must be below the 85%ile speed, which means that safe drivers are prosecuted and, for the reasons described above, collisions are more likely.

- **"positive cost benefit"** - This is the claim that first convinced me that cameras are based on fraudulent claims.

The calculations use the Value of Preventing a Fatality (VPF) values but treats them as if they are costs and "return on investment". The cost to the county/country of a fatality is not around £1.5M and to claim that one life saved represents a return on investment of £1.5M is patently a lie. The real costs of a fatality (from HEN1 Table 3) are more like £5000 - £20000 (costs associated primarily with emergency services and hospital).

**In December 2009, the Comptroller and Auditor General of the National Audit Office (Amyas Morse) confirmed to me that it is wrong and misleading to use costs and values interchangeably in this way – it is fraud.**

The only way to get return on investment in cash terms is through fining drivers, many of whom are driving around the 85th percentile speed (and therefore probably quite safe), but the revenue from fines is never mentioned in the return-on-investment discussions, hence my belief that fraud is being perpetrated in the name of road safety.

- **"public support"** - based on loaded/biased survey questions<sup>2</sup>.

Public support has zero value in a safety management system. What matters are the results in terms of fatalities and injuries across the whole region, not just at a few specially selected sites. But there was no holistic measure of road safety by PA Consulting, just measurements at specific sites and no control experiment to see if the effects "at camera sites" would be the same if all of the signage and engineering changes were made but without adding a camera. In addition, that report dates from 2005 and makes no allowances for the changes in driver behaviour (braking and accelerating at cameras) and lawless behaviour (cloned plates, foreign plates, illegible plates, false registration addresses, etc.) that mean many bad "speeding" drivers are not prosecuted leaving the law-abiding driver who strays over the limit at a camera to fund the system. Incidentally, TRL421 is now over 10 years old and, even if the conclusions were valid at the time, they would lose credibility with the passing years. Safety claims are need to be based on the latest real/field data, not on modelling studies conducted years before.

The publicity used by the Northern Scotland Camera Partnership illustrates what is culpably wrong with reporting only KSI at camera sites. Between January and May 2008, I had an exchange with James Dale, Scottish Camera Programme Director, when I found Insp John Smith was putting out press releases claiming great success for cameras, because they were reducing collisions and KSI "at camera sites". When I enquired further, I found that **fatalities across the Northern Region have increased 30% annually since cameras were introduced in 2004.** Mr Dale denied that this was related to the roll-out of cameras and relied on old reports for his claim that the safety benefits of cameras were "well documented". He was, of course, referring to the Four-Year Evaluation and the TRL reports.

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**In conclusion**, the PA Consulting Four-Year Evaluation report gave no evidence that speed cameras yield a net road safety benefit.

- \* Speeds were down at camera sites but with no evidence of improved road safety, and no measure of speeds elsewhere
- \* Casualties were down at camera sites, but without any measure of what was happening across the region and thus no measure of whether there was a **real** reduction or whether it is an illusion. Further, without a credible explanation of **how** a speed camera can prevent a collision, this claim is worthless
- \* Positive cost benefit based on false claims of casualties prevented (see previous bullet) and using fraudulent claims of the cost savings from a prevented death
- \* Public support, from a public bombarded with the "speed kills" message and using biased questions.

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<sup>2</sup> The questions are listed on page 64 of the report. The surveys conducted in accordance with government guidelines have "spun" questions designed to elicit a positive response such as "cameras are meant to encourage drivers to keep to the speed limit, not to punish them". This example loaded question appears to ask about support for the cameras, but is really asking about the motivation behind the cameras.