



Safe Speed

You can't measure safe driving in miles per hour

Speed Cameras:

How and why they are fatally flawed

A response to the PACTS / SSI document:

“SPEED CAMERAS 10 CRITICISMS AND WHY THEY ARE FLAWED”

By Safe Speed, December 2003 (preliminary release)

<http://www.safespeed.org.uk>

Introduction

The speed camera proponents are worried. And so they should be. PACTS and SSI have issued a document purporting to dismiss claims made against speed cameras. Speed camera policy is failing spectacularly, yet rather than admit their mistakes, the pro speed camera lobby are trotting out some tired old lies, spin and half truths again.

The document is (here). We'll take each of their claims, point by point. Quoted text is in small italic. Every word of their text is quoted. Astonishingly the document has also been published by the DfT (click here)

This response document has been prepared with a degree of urgency. We have omitted references to research and further information in the interests of getting the document out on time. Full references can be found and followed from the same information on the following web page:

<http://www.safespeed.org.uk/pactsssi.html>

1. CAMERAS COST LIVES

Claim: The RAC Foundation and Autocar have claimed that 'speed cameras cost lives', by pointing to the declining rate of reducing fatalities on the roads in the past ten years, compared to the previous ten years. The Association of British Drivers (ABD) has claimed that 5,500 lives have been lost as a result of speed cameras in the past 10 years.

Reality: There is no evidence and no logical reason to suggest a correlation between the advent of speed cameras and the declining rate of road casualty reduction. Research has consistently shown that speed cameras have a major impact in reducing casualties. A major two-year DfT study of speed cameras across six areas found a 35% reduction in people killed and seriously injured at camera sites, compared to long-term trend.

Wrong. There are plenty of reasons to expect speed cameras to make road safety worse. We maintain an 18 point list. (click here). We entirely reject the "major DfT study" because it depends on uncompensated errors. When we asked the authors about the study they declined to answer the most important question. (click here) and see below,

This finding repeats results of previous studies: the West London Speed Camera Demonstration Project experienced casualty reductions of 55% compared to control sites and 70% compared to the period before cameras were installed. Similar findings have emerged from other countries: an evaluation of 28 camera sites in New South Wales, Australia found a reduction in fatalities from 21 in the three years before camera installation to 1 in the two years after installation.

The ABD has addressed serious shortcomings in the "West London Speed Camera Demonstration Project", and on the basis of analysis of wide area results we utterly reject claims of overall road safety improvements due to speed cameras. For example after a rather good first year (probably the result of wide area regression to the mean) the 8 trial counties have delivered absolutely terrible overall results for the next two sets of figures. (click here). And it's not just the 8 trial counties. The 7 who joined in 2001 have failed to match the national trend, and a number of camera counties have already announced worse figures for 2003 than for 2002.

Some critics of cameras have disputed the DfT study, arguing that the 35% reduction in casualties at camera sites represents a 'regression to the mean' or a return to long-term casualty trends.

"Regression to the mean" is an important statistical effect that arises when a treatment is applied to an untypical grouping. The Department for Transport describes it as follows:

"This effect, sometimes called bias by selection, complicates evaluations at sites with high accident numbers (blackspot sites) in that these sites have often been chosen following a year with particularly high numbers occurring. In practice their accidents will tend to reduce in the next year even if no treatment is applied. Even if three-year accident totals are considered at the worst accident sites in an area, it is likely that the accident frequencies were at the high end of the naturally occurring random fluctuations, and in subsequent years these sites will experience lower numbers. This is known as regression-to-the-mean."

The regression to the mean error is extremely important. (click here) for details. When we asked the authors of the report:

"Do you actually deny that an uncompensated site level regression-to-the-mean benefit illusion exists within the "35% reduction at speed camera sites" headline claim of your report?"

They did not reply. (click here)

However a study by Imperial College of the impacts of speed cameras over a twelve year period in Cambridgeshire enabled researchers to eliminate the effects of regression to the mean. It concluded that cameras can reduce collisions involving injury by 'an astounding 45.74%' with 'lower but still significant decreases' within a 2 kilometre radius of a camera.

Unfortunately the author (Hess, a research student) does not provide sufficient data for us to check his work. The results are highly improbable, and possibly depend on the powerful and arbitrary "weightings" he applies to accidents

of different severities. We find it bizarre in work of this sort that so little data is offered in the report that we are completely unable to check the findings.

The results also demonstrated that speed cameras do not increase crashes by leading to abrupt braking in the vicinity of cameras.

Except that speed cameras are known to have caused crashes by "abrupt" braking, including at least one fatality.

Hess does however offer this table...

TABLE 2. Reductions in accident numbers using grouping by positioning of camera

	250 draws	500 draws	1000 draws	2000 draws
A-Roads	-55.33%	-41.30%	-31.62%	-20.86%
Non-A-Roads	-10.04%	-44.33%	-35.70%	-19.78%
Urban Roads	-28.60%	-31.83%	-19.71%	-23.65%
Trunk Roads	-72.25%	-33.95%	-25.45%	-21.02%
Multi-area	-30.99%	-57.92%	-50.15%	-20.02%
Stand-alone	-56.00%	-35.18%	-23.18%	-21.54%

... which purports to show the accident rate improvements at different distances from the camera sites. (we don't know what "draws" means, but it's very clear in the text that we are talking about distances in metres from the camera installation.) We'd like to point out a bizarre anomaly: On "non A roads" and urban roads the camera is supposed to be more effective when it is 500 metres away. We think this is highly unlikely and further encourages us to question the entire finding of the report.

However, even if it were true that cameras deliver a substantial local benefit, it would still be to the detriment of overall road safety if the benefits do not appear in the wider area figures. As it happens we do not even believe that a safety benefit is delivered at camera sites, and the national figures all point to worsening trends.

Despite the positive impact of speed cameras on road casualty figures, however, the steep decline in road fatalities achieved in the 1980s has not been matched by the more gradual drop in fatalities in recent years. This is a concern for everyone involved in road safety, and further action should be taken to reduce the number of road fatalities.

There has been a long term reliable reduction in the UK roads fatality rate from the earliest record we have (1950) until 1993. The 1980s were not exceptional in this beneficial trend. However the last decade has been truly exceptional - exceptionally poor.

They say: "...more gradual drop in fatalities in recent years". But 2002 was worse than 1998. This isn't a "more gradual drop"; this is a trend reversal. The long established fatality rate reduction has almost stalled (6.81% pa average from 1978 to 1993, and 0.42% pa from 1999 to 2001. 2002 showed a small downwards blip of 3%, making the average from 1999 to 2002 just under 1% pa - about 1/7th of the average rate from the recent pre camera period.) Do not make the mistake of thinking that recent figures are a short term blip. The fatality rate curve has slowed smoothly and nearly stopped falling in recent years. This is not the behaviour of a blip. This is the behaviour of a real dangerous trend.

A simple extrapolation of the 1978 to 1993 trend extended to the present day indicates that 5,700 people have died on the roads at the time of writing who would not have died if the previous trend had continued. This loss of trend now accounts for around 1,200 lives per year - about one third of the total. The camera proponents - sure of their ground as usual - claim they do not understand why this has happened.

But there was just one change to the road safety system in the UK that was big enough, wide ranging enough and correctly timed to match the loss of trend, and that was the change in road safety policy towards "speed kills", backed by large numbers of speed cameras. Dr Alan Buckingham found the same loss of trend ([click here](#)). You can read our analysis ([here](#)) and download the latest spreadsheet with full references to official data sources ([here](#)).

Sharp reductions in the number of road deaths were achieved between 1983 and 1993, and have been largely associated with the 1983 law making front seat belt wearing mandatory, better car design and major reductions in drink driving fatalities. Factors likely to be responsible for the slowing rate of reduction between 1993 and 2003 include continued increases in traffic (up from 583 billion passenger kilometres 1993 to 634 billion passenger kilometres in 2002); sharp increases in motorcycle casualties (up from 427 in 1993 to 609 in 2002); a levelling-off of drink drive fatality numbers (up from 520 in 1993 to 560 in 2002); a decline in seatbelt-wearing and the increased use of mobile phones while driving.

Traffic is growing more slowly than previously. The rise in motorcycle casualties is about 15% of the problem we must identify (i.e. 182 out of 1,200 lives per year) and in any event much of it has a cause in common with the remainder. (i.e. worse driving standards). The rise in drink driving is related to the loss of traffic police, and declining safety attitudes promoted by cameras. And it too is a small part of the problem. The fatality risk of mobile phone driving is also tiny. RoSPA identified just 19 deaths over a 12 year period. A small decline in front seat belt wearing has been

more than matched by a rise in the wearing of rear seat belts. The explanations offered are miles away from explaining the loss of trend.

The factors contributing to the slowing rate of fatality reduction are currently under review as part of analysis of progress towards targets for 2010 casualty reduction set out in the road safety strategy.

We can only hope that the review will determine the simple truth: Speed cameras have distracted everyone from the task of improving road safety. (click here) They undermine the vital safety culture which gave us the safest roads in the world in the first place. A critical component of that successful safety culture was individual responsibility, but "speed kills" and camera enforcement devolve responsibility away from drivers. It's no wonder that speed cameras make the roads more dangerous.

Other indicators show a somewhat more positive picture of declining road casualties. The casualty rate – the number of people killed or seriously injured per million vehicle kilometres – has fallen from 74 in 1993 to 62 in 2002. The number of serious injuries per year has fallen by over 9,000 (or 20%) since 1993.

We are extremely concerned that the apparent improvements in serious injuries are due to changes in hospital admissions policy and recording policies. The definition of a serious injury in current use is as follows:

"An injury for which a person is detained in hospital as an "in-patient", or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushings, burns (excluding friction burns), severe cuts and lacerations, severe general shock requiring medical treatment and injuries causing death 30 or more days after the accident."

It should be obvious that improvements in paramedic care will result in less likelihood of hospital admissions, and may account for a significant proportion of the apparent decline. Any change in hospital admissions policy will also obviously affect "serious injury" figures. We have strong doubts that the current improvements in serious injury numbers are real road safety improvements.

But suppose they did represent real road safety improvements - we find the following figures:

year	GB roads fatalities	GB roads serious injuries	Proportion of fatalities
1993	3,814	49,245	7.7%
2002	3,431	35,976	9.5%

The proportion of fatalities in serious accidents was higher in 2002 than at any time since 1951, and the proportion of fatalities in serious accidents has been climbing steadily since 1993. (click here)

This trend should be of great concern to the proponents of speed cameras because one of the following **must** apply:

- 1) The improvements in serious injuries do not represent a road safety improvement and instead represent an improvement in medical care or a change in reporting practice. In this case the national reduction in serious injuries (claimed as a beneficial effect of the cameras) is simply an illusion. or
- 2) The increasing proportion of fatalities represents a genuine increase in serious accident severity. In this case, speed cameras may be having the exact opposite of the obvious effect, and are actually increasing the average severity of a crash. This would mean that the average serious crash now takes place with a higher impact speed than it did in 1993.

We expect that both effects are present, with the second being the larger. The increasing proportion of excessive speed accidents in Warwickshire appears to support the conclusion. (click here)

2. SPEED IS NOT A MAJOR FACTOR IN ROAD CASUALTIES

Claim: The ABD and other opponents of speed cameras claim that 'speed doesn't kill' and reject the relationship between speed and the frequency of road crashes.

Reality: Road safety literature overwhelmingly supports the relationship between speed and both the frequency and severity of crashes. Crash investigations have established that excessive or inappropriate speed is a major contributory factor in at least one-third of all road crashes, making it the single most important contributory factor to casualties on our roads. It is understandable that road safety professionals should make speed management a priority in casualty reduction strategies.

Inappropriate speed is extremely dangerous. But that is not the same as exceeding a speed limit. Using a lower free travelling speed sometimes means crashing with a higher impact speed. There is little or no relationship between the free travelling speed chosen by a responsible driver and the average impact speed of a population of responsible drivers. See this analysis: (killspeed), (proof) and (12mph). In fact, road user response is about 500 times more important than free travelling speed in determining accident outcomes.

Speed cameras are very bad at recognising irresponsible drivers, but demonstrably good at recognising responsible drivers a few miles per hour over the speed limit. See this link: (wrong)

Speed cameras do not detect inappropriate speed. This point is so important we'll repeat it: Speed cameras do not detect inappropriate speed. The speed that a speed camera measures is simply speed in excess of a speed limit. "Speed in excess of a limit" and "inappropriate speed" are neither interchangeable nor equivalent. But very dangerously if we attempt to make them equivalent in the mind of the average driver, we should expect to see increases in inappropriate speeds within the speed limit as drivers choose to rely on the speed limit and their speedometer rather than the evidence of the road ahead.

A study based on the crash history of 300 sections of road, 2 million measurements of speed and the self reported crash history of 10,000 driver conclusively demonstrated the correlation between speed and crash frequency. As speed increases, the risk that a crash will occur also increases (see Figure 1). The findings reflect the importance of drivers having time to respond to the unexpected. At higher speeds there is less time to react appropriately. Crash frequency is related to average speed, the spread of speeds and the percentage of drivers exceeding the speed limit.

This is TRL421 and its stable mate TRL511. They are a travesty of science with more holes than colanders. We publish a high level critique (here) and wrote to the TRL asking for an explanation regarding a major logical fallacy in the headline conclusions. (here) The TRL disappointed us enormously by failing to adequately reply.

Simple physics dictate that injury severity increases with speed.

Only when we are talking about impact speed. That's not the same as free travelling speed. There is incontrovertible evidence to support the idea that driver response has a far larger influence on eventual impact speed than free travelling speed. Consider the following official figures for child pedestrians in 2002:

Built up roads (i.e. 30 AND 40mph speed limits)

- Injuries: 13,937
- fatalities: 58
- 0.42% of injuries were fatal.
- Yet we know that at 30mph impact speed 50% of pedestrians die.
- And we know that 59% of cars in 30mph zones were exceeding the speed limit at sample sites in 2002.

In this simple example, it should be immediately obvious that "something" intervened to prevent 7,000 children dying. That something is "road user response". Road user response was more than 100 times more important to the outcomes of these accidents than free travelling speed.

Never forget that road accidents are rooted in psychology (or in road user error), and never in physics. The physics only gets a chance to take over after road user response has failed and finished and a collision is taking place.

If we consider also the road user responses allow a potential accident to be reduced to a near miss, we soon discover that road user response is at least 500 times more important to accident outcomes than free travelling speed. Thus, road user response is our most precious road safety asset. But we are squandering it with misguided excessive speed enforcement and misleading safety messages to road users.

Figure 2 shows that even slight decreases in speed are beneficial, especially for death and serious injury. Research by TRL has indicated that reducing the speeds of the fastest drivers would yield the greatest benefits in reducing death and injury on the roads.

Of course the reality is not that the fastest drivers on open roads away from hazards are dangerous, more it's the drivers who fail to reduce speed in areas of danger. Driver behaviour is far more complex than the number on the speedometer. And it needs to be. Reduce the task to driving by numbers and we reduce drivers' abilities to adapt their speeds to the circumstances. This is the fatal flaw in modern speed enforcement practice.

Some critics of speed cameras use TRL Report 323 to argue that speed is a contributor to only 7% of road crashes. However, TRL 323 was not a study of crash causation or of the role of speed in crashes, but rather an evaluation of a crash reporting methodology. The 7.3% figure in the report refers not to a proportion of crashes but rather a proportion of factors recorded by police and since on average two factors were recorded for each crash for which the methodology was used, it shows that excessive speed was recorded as a factor in at least 15% of crashes.

Perhaps the speed camera proponents would like to dismiss TRL323 as "only" a study of crash reporting methodology. However, like it or not, it is by far the nearest thing we have in the UK to a national study of accident causation. It is the only multi-area study available. One test in TRL323 of the effectiveness in the system was to see if similar results could be obtained from different areas, so confirming that the method was being correctly applied. Different areas did yield similar results, and thereby confirmed that the method was being correctly applied, and that there were similar accident contributory factors in a range of areas.

In TRL323 excessive speed was recorded as a "possible, probable or definite" factor in 15% of accident reports. "Excessive speed" in TRL323 was recorded as a definite factor 126 times out of 2,795 reports - that's just 4.5% - and the 4.5% includes excessive speed for the conditions, but within the speed limit. Figures from Avon and Somerset (the only UK figures we have (click here)) show that just 30% of excessive speed accidents in fact took place above the

speed limit. So the TRL323 estimate drops to 1.35% of accidents definitely involved excessive speed and over the speed limit.

Marie Taylor, head of TRL's programme of research on speed and accidents, has commented on the erroneous interpretation of TRL323. She points out that in addition to speed being recorded as a factor, it will have been 'part of the reason for other factors being recorded' such as failure to judge another's path or speed. It will compound factors such as following too close and aggressive driving. Finally, she notes that excessive speed was recorded as a factor in more than a third of the fatal crashes recorded and that the contribution from other speed-related factors 'will mean that the true effect of speed is likely to be even greater than this'.

It was an extremely sad day for science when the TRL published the document in question. Science is dismissed altogether and phrases including "effectively confirms", and "we believe" take its place. You can read the document and our detailed comments (here). It is clear on examination that it is the TRL who would like to distort their own published research. Also see the "One Third Lie" web site

3. RAISING SPEED LIMITS IN THE USA MADE NO DIFFERENCE TO CASUALTIES

Claim: In an article titled 'Motorists cry foul at rise in speed cameras', the Daily Telegraph argued that speed 'does not of itself cause accidents' and that 'when the 50mph national speed limit was lifted in America, there was no noticeable increase in accidents caused by speed'.

Reality: This would be very interesting if it were true. In 1987 the national speed limit in the United States rose from a 55 mph limit imposed during the fuel crisis in the early 70s to 65 mph. In 1995 individual states were allowed to set their own limits. A recent report found that the post-1996 rise in speed limits in many American states has triggered a 35% increase in death rates.

The report in question is clearly journalism rather than science. You can see it for yourself (click here). We honestly do not know if there is science anywhere behind it, but we will investigate. Even the journalistic description points out:

"Geographical differences among the states that changed or didn't change their speed limits may have contributed to the estimated effects. All states that raised speed limits to 75 mph were in the western United States, while most that didn't change were north-eastern and midwestern states."

A more scientific alternative report on the same subject arrives at the opposite conclusion: (click here)

The report compared 22 states that raised interstate highway speed limits to 70 or 75 mph when the federal speed limit was abolished in 1995 to 12 states where the limit stayed at 65 mph, and found that there were 1,880 more deaths on interstates between 1996 and 1999 in states with higher speed limits. The reverse effect is also evident: in 1974, when the national speed limit was lowered to 55 mph, fatality rates dropped by 50% on the interstate highways and by 70% on other four-lane rural highways. The US National Highway Traffic Safety Administration is now advocating the adoption of speed camera laws similar to those in the UK to help counteract the rising death toll.

One hopes that the US administration will note the terrible effects of speed cameras on road safety in the UK and Australia before they make the same deadly mistake.

It is also vital to point out that speed limits and speed cameras are very different things. We need speed limits. What we do not need is precise or absolute adherence to them. Speed limits served us very well indeed up until the camera era - like many things they are excellent servants, but poor masters.

4. CAMERAS ARE NOT SITED ON THE MOST DANGEROUS ROADS

Claim: Autocar Magazine in association with the RAC Foundation has claimed that speed cameras are not sited on the most dangerous roads and 'the most lethal 10 roads in the country (as designated by Euro RAP) are covered by just four speed cameras'.

Reality: The European Road Assessment Programme (Euro RAP) is a European danger rating system developed by an international partnership including the AA Motoring Trust. An assessment of the danger rating of British roads was released in September 2003. The data used to assess the roads, however, cover the period from 1997 to 2001. During this period, only one of the police force areas covering the list of 10 most dangerous roads was involved in a pilot safety camera partnership. Until the netting off scheme was available, speed cameras were only infrequently used because of the costs involved in installing and servicing them.

It is highly misleading to suggest that cameras were used "infrequently" before the establishments of the camera partnerships. The growth of speed cameras fines has been large and steady (in percentage terms) from 1993 until 2001 (the last year for which full records are available). (Figures are included in Table 1 on (this page).)

The Government has set stringent criteria for the siting of cameras by safety camera partnerships. These stipulate that for a new camera to be installed there must have been at least four deaths or serious injuries on a given 1.5km stretch of road within the past three years. At least 20% of drivers must be exceeding the speed limit. Fixed cameras also require collisions to be clustered. Finally, camera policing of speed limits can only be introduced after all else has failed: 'and there are no other obvious, practical measures to improve road safety along this stretch of road'. If rates of speeding on the roads identified by Euro RAP are not this high and there is evidence that the collisions are not speed-related, safety camera partnerships would be unable to install new cameras.

It is an unfortunate fact that we might get 4 deaths or serious injuries anywhere on the UK road network within a three year period. By choosing sites where more than 20% of drivers must be exceeding the speed limit we are actually tending to select sites where it is safe to exceed the speed limit. Traffic engineers have long known that 85 to 90% of drivers do not exceed a safe speed for the circumstances (this is known as the 85th percentile rule (click here)) - so

we are placing cameras where we know that the safest groups of drivers have decided that it is safe to exceed the speed limit. For more information ([click here](#))

5. CAMERAS DON'T CATCH THE MOST DANGEROUS DRIVERS

Claim: The RAC Foundation has claimed that speed cameras tend to catch the safest drivers, rather than the most dangerous. According to its research, the drivers most likely to be caught by speed cameras are middleaged male company car drivers who cover large mileage, rather than young drivers, despite the fact that young drivers are involved in more crashes when licence holding is taken into account.

Reality: The profile identified by the RAC Foundation - company car drivers and drivers with high mileage - are not only more likely to have a speeding conviction; they are also more likely to be involved in crashes than other drivers. Reports have consistently found that company car drivers and high-mileage drivers who drive for work are 50% more likely to be involved in injury accidents than other drivers, even after differences in exposure due to miles driven have been taken into account. Pressure to speed has been identified as a contributing factor to this figure, alongside fatigue and in-car distractions.

The study in question (TRL582) puts it in rather clearer perspective:

"The results suggest that the increase in the accident risk of drivers with high proportions of work-related mileage are related to the pressures under which they work, and the need for long car journeys after work, rather than to general characteristics of their driving behaviour. It should be noted, however, that there is no direct evidence arising from this study that these pressures are causally related to accidents. Rather, the study demonstrates that a group of drivers with very high proportions of work-related mileage tend to have an elevated accident risk and tend also to drive while fatigued, under time-pressure, and while distracted by in-car tasks. Other research demonstrates that these are indeed risk factors in driving."

The red herring here is to muddle up the effects of work related driving, (hence including the pressures and time constraints that such driving brings) with the typical middle aged experienced driver. The speed cameras are comprehensively failing to identify the greatly elevated risk of a speed related accident involving a young driver. This is very important.

Research also shows that 'those drivers who had been stopped by the police for speeding or had been flashed by a speed camera had double the incidence of recent crash involvement'.

This patently oversimplified conclusion is the result of not correcting for exposure. Higher mileage drivers are more likely to be caught speeding and also more likely to be accident involved. We might as well have suggested that drivers who buy more fuel are more likely to be accident involved, which is equally true.

But this is just the tip of the iceberg - speed cameras miss their mark dramatically. We discovered that North Wales issued just 3.6% of speeding tickets to drivers under 25 years old, while in Northern Ireland 80% of excessive speed crashes are due to drivers under 25. ([click here](#))

Insurance companies well understand the risks associated with young drivers and charge them large premiums. Yet still the cameras do not identify them as a risk group.

6. CAMERAS ARE NOT POPULAR

Claim: Opponents of speed cameras claim that they are 'deeply unpopular'. The Daily Telegraph concluded from a recent opinion poll that 'seven in 10 motorists think speed cameras are mainly revenue-raising devices that do little to reduce car accidents'.

Reality: Opinion polls generally indicate widespread public support for speed cameras, although some polls (like that cited in The Daily Telegraph) do not. A recent 'poll of polls' by Transport 2000 – based on six different surveys – shows that support for the use of speed cameras averages 74 per cent. Similarly, during trials of speed cameras, a DfT survey found that over 80 per cent of people living in pilot areas agreed that 'cameras are meant to encourage drivers to keep to the speed limit, not to punish them'.

Public opinion is a result of many things. Some people base their opinions of what they read in newspapers or what they hear from their friends. Some trust the government to tell them the truth. Some trust the scientific establishment. Whatever public opinion may now say about speed cameras, it should be completely clear that there has been a massive amount of spin and misinformation generated at public expense to support the policy. The camera partnerships are instructed to spend between 5% and 10% of their huge budgets on "publicity". It is extremely unfortunate - not to mention downright dangerous - that they spin and distort road safety facts for the public. Almost every time we see a claim from a camera partnership it is spun and twisted in a deliberate attempt to delude the public.

This distortion of road safety information is extremely dangerous. If we succeed in persuading drivers that their most important duty to road safety is speed limit compliance the effects are deadly. Actually keeping to the speed limit is always a lower safety priority than a dangerous situation that may be developing ahead - and every single accident is preceded by a dangerous situation developing ahead for one or more of the road users involved. What happens if, at that critical instant, a driver is checking his speedometer for speed limit compliance? He will be slower to react and he will crash harder.

However, much of the public still has good road sense, and they know full well that the speed camera claims are lies and spin. Another useful survey was conducted by Admiral Insurance and it found that "Only 35% of drivers think that more speed cameras should be installed". (click here)

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. We would even answer, yes, cameras are meant to encourage drivers to keep to the speed limit. The government could have chosen to issue a list of really useful questions like:

- Are speed cameras good for overall road safety?
- Which would you rather have, three speed cameras, or a couple of fully staffed police cars?
- Do you think that cameras worsen the relationship between the police and the public?

But of course those questions have not been asked.

7. CAMERAS ARE A WASTE OF MONEY

Claim: Some critics of speed cameras argue that 'cameras are a waste of money'.

Reality: Speed cameras are remarkably cost-effective. In the two-year pilot study of cameras in six counties, there were 280 fewer people killed or seriously injured at camera sites than would otherwise be expected. This means that the total cost saving of casualties at camera sites over two years was around £58m. This figure is several times higher than both the amount spent on camera enforcement (£21 million) and the amount raised in fixed penalty income (£27 million). When the reduction in casualties across the pilot area (4% reduction in KSI) is taken into account, it is estimated that the total benefit to society over two years is approximately £112 million. A previous Home Office Police Research Group cost benefit analysis of speed cameras found that cameras generate a return of five times the investment after one year and 25 times the amount after five years.

As far as we are concerned "waste of money" is not even on the radar. Speed cameras are a waste of lives.

8. CAMERAS RAISE REVENUE FOR POLICE AND LOCAL AUTHORITIES

Claim: A Daily Telegraph article on speed cameras claimed, 'The cameras generate around £80 million a year in income... Much of this money is retained by the police, something that critics believe merely encourages the proliferation of the cameras'.

Reality: Neither the police nor local authorities retain income from speed cameras. As a DfT briefing on safety cameras explains:

Safety camera partnerships are not there to raise money and neither the police nor the local authority receive any money from the operation of safety cameras. Strict Treasury rules mean that any money from fines that is returned to the safety camera partnerships can only be spent on the operational costs of their camera network, including new cameras where the need can be identified. All remaining money goes to the Treasury; it does not stay with the Partnership.

Of the £27 million raised in fines during DfT's two-year camera pilot project, £21 million went to the safety camera partnerships to cover the costs of camera enforcement; the remaining £6 million went to the treasury.

This simplified thinking fails to account for two realities.

- 1) The Police and local authorities retain the "displacement budget". When they delegate their road safety responsibilities to a camera partnership they then need to spend less on their own road safety activities. Since they do not get a cut in funding they have more cash.
- 2) The camera partnerships are under regulated and insufficiently accountable. They are "quangos" and their bosses and managers are building empires. It isn't unusual for a camera partnership to employ 100 staff.

9. CAMERAS HAVE CONTRIBUTED TO A FALL IN TRAFFIC POLICING

Claim: An article in Autocar claims that speed cameras are a waste of police time and that policemen have been directed 'by authorities to abandon their duties in favour of flash-equipped grey boxes'.

Reality: There has been a gradual decline in the number of designated traffic police officers from 15-20% of constable strength in 1966 to approximately 7% of force strength in 1998, and this trend has continued recently. This is a worry for everyone concerned about road safety. There is little evidence, however, to suggest that speed cameras are responsible for this decline. Instead of speed cameras occupying police time, a Home Office Police Research Group paper noted that 'many forces had found that the use of camera technology released traffic officers for other duties'. Fixed speed cameras reduce the speed limit enforcement burden on traffic officers while speed limit enforcement reduces the time spent in dealing with collisions and their aftermath. Traffic policing and camera enforcement are mutually reinforcing, not mutually exclusive.

Home Office figures put the proportion of Police involved in traffic duties at 15% in 1993, so introducing 1966 is a deliberate red herring.

It really does not matter if the decline in traffic policing is caused by the growth of cameras, or if both trends have a common cause. Government policy has clearly caused both effects. One might ask the academic question: "Would

the government have allowed the traffic police strength to drop so low if it had not been for speed cameras?" We think not.

In 1994 the Home Office first published a list of "core policing activities". This was part of a system to create performance targets for policing. Road traffic policing was not defined as a core policing activity, and chief constables apparently quickly got the message about how the Home Office expected them to allocate resources.

In a thematic inspection of 'Road Policing and Traffic', Her Majesty's Inspectorate of Constabulary concluded that the decline in the numbers of designated police officers is due to increasing demands on the police (particularly by more high-profile policing activity) and competing pressures on police time. The failure to sufficiently prioritise traffic policing is fuelled in part by policing indicators that largely exclude traffic enforcement and by a failure to include road traffic enforcement as a 'key priority' for policing. Of 31 indicators listed in the National Policing Plan 2004-2007, only one (a very general indicator of road casualties per vehicle kilometre) relates directly to traffic enforcement. Road traffic enforcement is excluded from the list of 'Key Priorities' in the National Policing Plan, but appears instead under 'Other Areas of Police Work'. PACTS and SSI believe that identifying road traffic enforcement and casualty reduction as a key policing priority would have a major effect in reversing the decline of traffic policing.

At last something we can agree about!

10. THE NUMBER OF TRAFFIC OFFENCES DETECTED HAS FALLEN

Claim: Autocar Magazine in association with the RAC Foundation has claimed that speed cameras remove police from the roads, 'so thousands of serious driving offences now go undetected'.

Reality: Recorded incidence of many serious driving offences have risen in recent years, in contrast to these claims. Contrary to the figure of 'a fall of 50,000 in the number of dangerous driving offences detected', the Home Office statistical report 'Crime in England and Wales 2002/3' indicates an increase of 65% (from 4,589 to 7,551) in the number of dangerous driving offences recorded between 1998/9 and 2002/3 (earlier data are not available). Contrary to claims that fraudsters are not being detected, the same report shows recorded vehicle/driver forgery incidents increased from 6,028 to 8,553 – an increase of 42% – over the same period. While the number of recorded dangerous driving incidents has risen, the number of successful prosecutions for dangerous driving has fallen (3898 findings of guilt in 2001 compared to 6849 in 1993/39). This may be partially explained by an earlier reluctance to prosecute by the Crown Prosecution Service. This is an area of particular concern for road safety organisations and is developed further in PACTS' Research Report Road Traffic Law and Enforcement: A driving force for casualty reduction.

This is just horrible, ugly illegitimate spin.

Breath tests are down. Drunk driving is up. Deaths from drunk driving are up. In fact all important offence groups apart from speeding are way down. None of them are up. (click here)

CONCLUSION

As this review of research evidence indicates, excessive and inappropriate speed is a major contributing factor to road crashes and casualties. A comprehensive approach to speed management remains central to the continuing drive to reduce death and injury on our roads.

It is absolutely remarkable that we are continuing to muddle up a number of effects all called speed. This is a serious conceptual error at the very core of speed camera policy.

"Inappropriate speed for the conditions" is responsible for 70% of "excessive speed accidents". These accidents take place within the speed limit and cannot be addressed by speed cameras.

"Excessive speed" (we think they mean "speeding" or exceeding a speed limit) is not dangerous in itself. It only becomes dangerous when the speed is also inappropriate. Nevertheless it is sometimes recorded as a cause or contributory factor in a small proportion of accidents. In Durham it was recorded in 60 out of 1,900 accidents last year. (3%).

Speed cameras have proven to be an extremely successful element of an integrated speed management strategy, and studies have consistently shown that deaths and serious injuries have been reduced by over a third at speed camera sites.

It is also absolutely remarkable that the supposed beneficial effects have only ever been observed at speed camera sites. No larger area has ever been able to identify the benefits of speed cameras as contributing to overall figures.

It was recently reported that we now have 17,000 speed camera locations. If this figures is true, and supposing they provide the much vaunted 35% reduction at speed camera sites, and supposing they have been sited on the official basis of "at least" 4 Killed or seriously injured persons over a three year period - we calculate a national benefit as follows:

(4 accidents / 3 years) * 17,000 sites * 35% gain in casualties = 7,933 reduction in Killed or seriously injured. We know that 2002 figures put the proportion of road deaths (from serious injuries) at 9.5%, so we should have seen a benefit of 754 lives saved last year. This is clearly complete nonsense, because what we really have is a deadly loss of trend in the fatal accident rate. If speed cameras really did save those lives claimed we should have seen an estimated 1,500 total UK roads fatalities last year, (i.e. 754 better than the expected continuing trend value of 2,200) and not 3,400.

The claims of benefits at speed camera sites are clearly an illusion, usually based on failing to compensate for regression to the mean effects. (click here)

In this context, it is important to dispel some of the myths about cameras. Rather than 'punishing motorists', speed cameras may instead save the lives of motorists and other road users.

It clearly is most important to dispel the myths about speed cameras. We note the final conclusion of the document is "speed cameras may save lives". And of course they may be killing us in large numbers.

We are quite certain from our most careful analysis of all the available data that speed cameras are responsible for the loss of trend in the UK fatal accident rate - a loss of trend that has accumulated 5,700 victims at the time of writing.

TEN VITAL QUESTIONS THAT THE AUTHORITIES CANNOT OR WILL NOT ANSWER

- 1) What is the evidence that speed cameras save lives?
- 2) What proportion of accidents are caused by speeding?
- 3) What proportion of excessive speed accidents take place entirely within the speed limit?
- 4) Can you give me any reference to research where the link between speed and driver concentration has been explored?
- 5) Why did North Wales Police only issue 3.6% of speeding tickets to under 25s, when in Northern Ireland (the BBC reports) 80% of excess speed accidents are caused by the under 25s?
- 6) Why does an important Transport Research Laboratory report contain outrageous logical fallacies that should be spotted by the average A level student?
- 7) Why have we lost the previous beneficial trend in the fatal accident rate since speed cameras were introduced?
- 8) Why do several important government reports into speed camera effectiveness ignore the DfT's own advice about massive sources of statistical errors?
- 9) What are the possible, probable and actual negative road safety effects of blanket speed limit enforcement?
- 10) If speed cameras work, why are excessive speed accidents increasing?

If the authorities cannot answer these issues fully, they have no right to risk the lives of the public with a road safety policy based on blatantly inadequate research. We believe they are killing us in large numbers with their misguided policies.

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SafeSpeed is dedicated to improving road safety by demanding for an urgent return to the policies which gave us the safest roads in the World in the first place.



Weapons of mass distraction

Speed cameras:

- Distract drivers from the important task of driving at a safe speed according to the conditions
- Distract the police from the task of policing the roads
- Distract local authorities from real road safety improvements based on engineering
- Distract researchers from investigating the causes of accidents

It's no wonder we say:

“Let's make speed cameras as unacceptable as drink driving”,
when there are now 1,200 lives a year mysteriously
lost on UK roads with no official explanation.



Wake up you fools! Speed cameras are killing us.