Comparison of Cost Effectiveness of Speed Cameras and Vehicle Activated Signs.

Claims by supporters of speed cameras that TRL548, *"Vehicle-activated signs – a large scale Evaluation"* published by the DfT on 1st January 2003 does compare their cost effectiveness with that of speed cameras, while correct in the literal sense, are nevertheless misleading, because the "statistically significant" data provided by TRL548 may readily be compared with the mass of data and claims long available for speed cameras. This document sets out in plain terms the massive difference in cost effectiveness.

1/ Overview.

TRL548 states that:

(a) "There has been a **statistically significant one-third reduction in accidents** across all of the Norfolk sites"

(b) "**Vehicle-activated signs appear to be very effective in reducing speeds**; in particular, they are capable of reducing the number of drivers who exceed the speed limit and who contribute disproportionately to the accident risk, without the need for enforcement such as safety cameras."

(c) "**Operating costs are also low**".

(d) "**The signs cost around £5,000** plus the cost of supplying power"

That the benefits claimed appeared to be at least of the same order of magnitude as those claimed for speed cameras, yet at much lower cost should surely have alerted the authorities to the real possibility either of achieving similar benefits at far lower cost, far greater benefits at similar cost or a combination of the two. If the report itself did not so alert the authorities it is a matter of record that Paul Smith of Safe Speed and I did make this point repeatedly over several years, and in particular that I made the point more than once to Robert Gifford of the Parliamentary Committee on Transport Safety. For whatever reason – not wishing to rock the boat, vested interests, potential loss of face by others – our efforts were in vain as the speed camera programme expanded across the country, **costing £100m a year in 2004 for benefits that in our view could have been obtained for no more than £2m, and without any need for the millions of speeding fines, thousands of lost licences and jobs or the enormous work load imposed on magistrates courts.**

It must first be said that this is not an exact science, as the supposed benefits – oblique in terms of speed reduction and direct in terms of accident and casualty reduction – necessarily depend on assumptions of what would have happened if neither camera not sign had been installed. For present purposes however it is reasonable to base the comparison on official figures and to assume that any correction factors that might be needed to allow for factors such as regression to the mean, existing downward trends etc would apply in similar measure to both sets of data. In any case, as the figures that follow show, the difference in cost effectiveness, arising largely from difference in cost, is so great that those factors cannot possibly make any difference to the conclusion that vehicle activated signs are so much more effective that the only rational conclusion is that speed cameras – with all their forty or more adverse side effects – should be removed from our roads and replaced with a much larger number of signs, to much greater effect.

It should however be noted that the new funding arrangements that remove the formerly total dependence of Camera Partnerships on speeding fines for their income, and instead provide broadly similar sums to local government, which will have freedom to decide how best to spend it, implies that the DfT, while unwilling to admit it, do now realise that the speed cameras and the hypothecation scheme has proved to be a massive mistake,

2/ The Figures.

Two sets of data are compared below – that from **TRL548** for signs and that from the **Fourth Annual Revue** of Camera Partnerships. Note that although it makes sense for present purposes to use the most recent data camera data, for 2004/5, similar data has been available in each of the previous years and would have lead to the same conclusions. In all cases camera data comes from the fourth report, sign data from TRL548

(A) **Speed Reduction**	**% Reduction**	**No of Sites**
Cameras (all sites)	**6**	1000s
Signs (Table 1, 30mph)	**13**	17
Signs (Table 2, 40mph)	**8**	5
Signs (Table 3, 50mph)	**7.8**	2
Signs (All speeds)	**10.3**	24

(B) **Breaking the speed limit**	**% Reduction**	**No of Sites**
Cameras (new sites)	**31**	1000s
Signs (Table 1 30mph)	**32**	17
Signs (Table 2 40mph)	**22**	5
Signs (Table 3 50mph)	**24**	2
Signs (All speeds)	**29**	24

(C) Accident Reduction PIAs	% Reduction	No of Sites
Cameras (new sites)	**22**	1000s
Signs (Table 9)	**59**	19
Signs (Table 10)	**22**	5
Signs (Tables 9+10)	**51**	24

(D) Accident Reduction KSI	% Reduction	No of Sites	
Cameras (new sites)	**42**	1000s	(casualties)
Signs (Table 90	**60**	19	(accidents)
Signs (Table 10)	**5**	5	(accidents)
Signs (Tables 9+10)	**48**	24	(accidents)

Notes. Totals for all signs are the separate figures, weighted by the number of sites. Ideally they should be weighted by traffic volume, but those figures are not readily available and tend to be unreliable in any case.
PIA = Personal Injury Accidents of all severity. KSI = Killed and Seriously Injured accidents.

In summary:

(A) In terms of **speed reduction, signs were 72% more effective than cameras** (10.3/6)

(B) In terms of % **breaking the speed limit, signs were 7% less effective than cameras** (29/31)

(C) In terms of **Personal Injury Collisions, signs were 130% more effective than cameras** (51/22)

(D) In terms of **Killed and Seriously Injured, KSI, signs were 14% more effective than cameras** (48/42)
(comparing changes in KSI accidents with KSI injuries, as those are the figures available., It is reasonable to assume that percentage changes tend to be similar for both.

These figures show substantially greater benefit for signs where it really matters - in accidents and injuries, Speed reduction is, after all, only the means to an end - accident reduction.

The data from the 4 annual report is clearly as statistically significant as any available, while the TRL548 data is stated by its authors to be statistically significant, so the comparison is also statistically significant.

3/ Costs

To show that signs should replace most or all cameras it is not necessary to show that they are more effective (though they arguably are), only that their effectiveness is of the same order of magnitude as that of cameras. Only massively lower effectiveness, which is clearly not the case, could overcome the massive cost reduction offered by signs.

TRL548 gives a figure of **£5,000** and with "low maintenance" for a sign. I have recently established by a Freedom of Information request to Norfolk County Council that the maintenance budget for these signs is of the order of **£200 pa** - leading to an average **annual cost amortised over 10 years of less than £1,000.**

The Fourth annual report, in stark contrast, **shows costs of £96m pa for 1,876 cameras, an average in excess of £50,000 pa, more than fifty times that of the signs.**

There cannot be a single businessman or individual in the country who would not grab with both hands a cost effectiveness improvements substantially greater than fifty to one- yet the DfT have all but ignored TRL548 as their speed camera juggernaut rolled on, and indeed to this day they still deny that the figures they submitted to the DfT purporting to show that cameras are more cost effective were misleading.

As Milton Freidman once said, "There are two kinds of money – your money and my money" and in my view the DfT and others have been prepared for more than three years to continue and expand the camera programme long after TRL548 showed beyond rational doubt that signs were massively more cost effective displays **not only gross incompetence by all concerned, but culpable negligence, breach of duty of care, misfeasance and/or malfeasance in public office.**

Road users deserve better than this. Heads must roll.

Idris Francis

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