

## **Comment on the Tax Payers Alliance Report**

There are many reasons why this methodology is fundamentally flawed, most importantly because no attempt whatever is made to judge speed enforcement at the locations where it actually occurs. Instead it chooses to pin the blame for the reduction in collision rates seen in the 1990s on the invention of speed cameras. The majority of speed cameras weren't installed in the UK until the 21st century, when they were directly funded by fine income. A close look at the casualty rate on the report actually shows a significant reduction in collisions after the year 2000. Furthermore, no academically published report has ever shown a rise in casualties due to the use of speed cameras with the wealth of international research coming down on the side of speed enforcement.

### **Initial analysis of the TPA report**

The report has been examined by Bruce Walton, one of the nation's most respected collisions analysts and part of the team behind the highly commended 4 MAST collision analysis system. His findings into the report are as follows:  
4 2010 CIHT Awards - <http://www.ciht.org.uk/en/events/ciht-awards/index.cfm>  
The methodology employed by the TPA report is this:

- A single point in time (1 January 1991) is selected
- The national crash rate trend over a thirteen year period prior to that point is calculated
- The same trend is projected forward from that point over a seventeen year period, using simple straight line projection
- A comparison is made with the actual trend observed over the same period
- Conclusions are drawn about the efficacy of a particular aspect of road safety policy, namely speed enforcement, on the basis of the difference between the actual and projected trends

There are many reasons why this methodology is fundamentally flawed, and does not support the conclusions drawn in the text of the document. The most important flaw is that the time periods covered by the analysis appear to be arbitrary, as the report provides no satisfactory reasons for choices of dates in either statistical, practical or policy terms. Specifically, no reasons are presented to explain the start date chosen for the analysis (which is claimed in

the text as 1978, even though figures are only supplied in tables from 1979), nor the selection of 1 January 1991 as the end of the period when the rate is calculated and the beginning of the projection period. These are important methodological failings, for several reasons.

Firstly, the period over which the rate is calculated is significantly shorter than the period over which the projection is compared to actual figures, but this anomaly is tacitly accommodated with no reason given. Both casualty figures and passenger kilometre statistics are available for periods prior to 1978, so there appears to be no prima facie justification for introducing this unnecessary anomaly.

Secondly, no evidence is supplied to relate the critical date of 1 January 1991 to the actual introduction of speed enforcement on the ground, so no robust relationship is shown to exist between the periods used and the purpose of the analysis. The report applies a Chow Test to show significant change in the long term trend at the chosen date, but since the date is itself arbitrary and the Chow Test is not comparatively applied to any other possible date, this does not in itself support selection of this particular date.

Thirdly, it is highly questionable whether straight line projection is a sound technique to apply to this data. If the projected trend used were extended for just six years further than the period covered by the document, it would reach a zero casualty rate. This outcome is clearly not credible, and therefore casts significant doubt on the validity of the chosen methodology.

These flaws clearly imply a possibility that the premises of this analysis were 'cherry-picked': in other words, the dates and projection technique could have been selected simply in order to generate a premeditated result, rather than because they have any real validity in the context of the hypothesis.

Even if it were to be accepted that 1 January 1991 was a representative 'start date' for the application of speed enforcement across Britain, and even if straight line projections over variable time periods were to be a credible technique to apply to future crash trends, the argument expressed in this document is still exhibits another important flaw, because it is subject to the post hoc ergo propter hoc fallacy. In other words, it presupposes without evidence that simply because one event occurs prior to another, they are necessarily related to each other. Since no attempt whatever is made to judge speed enforcement at the locations where it actually occurs, and given that road safety is an extremely complicated field effected by many human, environmental and technological factors, it is necessary to support the presumption that changes in long term road safety trends are related directly and uniquely to speed enforcement with something more than mere assertion. Since the document fails to do this, its argument and conclusions are not credible.