THE EFFECTIVENESS OF AVERAGE SPEED CAMERAS

A Report commissioned by the RAC Foundation
• History of speed cameras and previous analysis
• Objectives
• Collecting the data
• Problems
• Results
• Importance for those wanting to reduce collisions on roads
History of Speed Cameras in GB

• 2000 – 2007 Focus on casualty reduction
• Government sets installation criteria
  o 4 Collisions (KSI) per km in 3 years
  o 8 Collisions (PIC) per km in 3 years
  o Speed as a ‘causation factor’
  o 85th Percentile speeds > 10% + 2mph e.g. 35mph in 30mph limit
  o 20% of drivers exceeding the speed limit
Department for Transport

A cost recovery system for speed and red-light cameras ~ two year pilot evaluation
Research paper
11 February 2003
Evidence for Casualty Reduction

- 42% KSI
- 22% PIC
- 50% Fixed
- 35% Mobile
Evidence for Casualty Reduction

• Regression to Mean
  o 36% at Fixed Sites
  o 43% at Mobile Sites
RAC Foundation Objectives

1. To create a national database/inventory of ASC sites of various kinds in Great Britain

2. To establish a suitably large and appropriate control group of sites to enable an understanding of the difference in collision reduction between potential ASC sites with and without such enforcement

3. To establish levels of occurrence of collisions before and after ASC installation (with consideration given to site-selection period, pre-installation and post-installation periods)
How we collected the data

• Support from manufacturers

• Support from authorities (Police, local authorities, camera partnerships)
  – Installation dates
  – Site selection periods
  – Prior enforcement
  – Other information

• Collision data independently sourced
Comparison sites

GB Collisions 2005 - 2015

29% PIC
Control sites

- Cameras considered but never installed
- 9 sections, 25km of roads
Installation history

The graph shows the installation history of sites and the total length of road covered by average speed cameras from 2000 to 2015. The vertical axis represents the number of sites installed per year, while the horizontal axis shows the installation year. The shaded area represents the total length of road covered, and the bars represent the number of sites installed each year.
Standard “3 Before vs 3Recent” Analysis

50% FSC

25% PIC

- Approach adopted by most authorities
- Doesn’t take into account trend
- Doesn’t allow for Regression to Mean
Generalised Linear Model

\[ \ln \mu_{ny} = \ln P_{ny} + c_n + u b_{ny} + v c_{ny} \]

- Monthly data for each site in each period
- Takes into account collisions on other similar roads
- Estimates the effect of the SSP
- Estimates the effect of installation
Results

Site-selection period effect

24.9% FSC

16.7% PIC

Overall installation effect

36.4% FSC

16% PIC
• No difference in collision reduction rates at sites installed pre-April 2007 versus after
• No significant difference in effectiveness on low speed (20 – 40 mph) and high speed (50 – 70 mph) sites
• Candidate Sites – No significant change in collisions post-consideration
Richard Owen
Road Safety Analysis & Agilysis
Richard.owen@agilysis.co.uk

with thanks to:

George Ursachi
Road Safety Analysis/Agilysis

Richard Allsop
Emeritus Professor of Transport Studies at UCL