The history and development of speed camera use in Great Britain

A report to Monash University Accident Research Centre

Heather Ward
Centre for Transport Studies
University College London
Gower Street
London WC1E 6BT
England
+44 20 7679 1564
h.ward@ucl.ac.uk

October 2003

The history and development of speed camera use in Great Britain

Contents

1. History of safety camera use in Britain.

Enforcement cameras were first introduced in 1991 when the Road Traffic Act 1991 amended the law so that courts could accept evidence of speeding from type approved cameras accompanied only by a certificate signed on behalf of the relevant police force. This allowed speed and red traffic light cameras, collectively known as safety cameras, to be operated by police forces. The first deployment of cameras in anything like a systematic way was in West London in 1992 when 21 fixed speed camera and 12 red-light camera sites were installed and their effectiveness monitored (London Accident and Analysis Unit 1997).

In the early days the take up of automatic enforcement by police forces was modest. In 1994 there were 30 speed cameras and 54 red-light cameras but the by Spring 1996 there had been continued growth with 102 cameras servicing 700 sites (475 speed and 254 red-light camera sites). By the year 2000 there were an estimated 4,500 safety cameras in use on British roads, the majority of these would be fixed speed cameras with a smaller number of red-light and mobile cameras.

An early evaluation of safety camera effectiveness (Hooke et al 1996) demonstrated that the net benefit of speed cameras was five times the initial investment in the first year and more than 25 times after five years. For traffic light cameras the benefits were modest but positive. However, a key barrier to more rapid deployment of cameras was one of resource. At that time the benefits from cameras did not accrue to the police forces who operate them but fine revenue went to the Consolidated Fund of the Exchequer, which is a long standing principle. The report concluded that there was a mismatch between where the costs and benefits lay. The Local Authorities typically purchased and installed the equipment but because the photographs were evidence, the police were responsible for installing and changing the film (cameras were all wet film in those days) and for processing the fixed penalty notices together with the courts. The benefits of automatic enforcement accrue to individuals and society in the reduction of injury, distress and material damage.

It was suggested that there was little incentive to reach optimal levels of camera use because greater use meant greater cost and burden on the police and courts.

1.1 The cameras and equipment

All equipment used in camera schemes must be type approved by the Home Office. The Association of Chief Police Officers (ACPO) lays down guidelines for camera trigger speeds (the average trigger speed is the speed limit plus 10 per cent plus two miles/h) although there are local variations upward on this with many forces in the early days setting trigger speeds as high as 40 miles/h within a 30 miles/h speed limit. Part of the argument was that if the trigger speed was lower they would have to change the film in the camera too often and this demonstrated a very real resource constraint on camera use.

Most fixed cameras work off radar and detect the speed of every vehicle passing it. If the vehicle triggers the camera it takes two pictures of the **rear** of the vehicle exactly one second apart. This allows vehicle speeds to be registered by radar and calculated by distance travelled in one second. Grids are painted on the road to assist with this

calculation. Mobile cameras are generally laser or video. All cameras have to have current calibration certificates which the courts may ask to see.
The two main reasons for photographing the rear of the vehicle are

- Motorcycles do not have front plates
- Civil Liberties and Data Protection Act arguments apply to photographing the face of the driver

Not all camera housings have a camera present. One camera is moved between several sites and in the early days there was typically one camera for every 10 to 15 (or even 20) housings. Dummy flashes are often used at sites without active cameras to give drivers the impression they are being monitored. In the early days of automatic enforcement this low utilisation of cameras in the housings led to a perception that drivers were rather unlikely to be caught.

1.2 Processing

Enforcement is through the vehicle registration system. The registered keeper of the photographed vehicle is traced through records at the Driver and Vehicle Licensing Agency (DVLA). The registered keeper is required to provide information to the police, including who was driving the vehicle. Failure on behalf of the keeper to provide details is an offence, but the keeper is not responsible for the speeding fine if they were not driving, that remains the responsibility of the driver. A fixed penalty ticket is issued which is paid by post. If the offence is contested this is done through the courts. This of course is a more expensive route and the driver, if found guilty sometimes finds themselves paying more than they would have done if the offence had not been contested.

However, more recently, manufacturers have developed fixed speed cameras that photograph from the front, and these have been type approved for use by the Home Office. These capture the front number plate and the bonnet of the car. In a relatively small proportion (about 20 percent) of cases the driver and front seat passengers may be seen on the film and identified but this personal evidence is not admissible in court under British law. Occasionally if there is a dispute about who is driving, the police may invite the keeper to view the film at the processing centre (it is never posted to the keepers home). Front facing cameras are relatively rare and whilst there are occasions they may have an operational advantage, their major disadvantage is that they cannot identify speeding motorcyclists.

1.3 Levels of fine and points on driving licence

The fixed penalty fine for being caught speeding by a camera on a road which is not a motorway was £40 ($67 US), it is now £60 ($100 US) and three penalty points on the licence. When twelve points have accrued within a three year period, the driver loses their licence for a period determined by the court. If the driver has been caught speeding by a margin of 30 miles/h there is no offer of a fixed penalty and the driver must attend court where the fine can be as high as £1000 ($US1700) with 6 penalty points or a driving ban for up to 6 months. The fine for exceeding the speed limit by a wide margin (i.e. travelling at 100 miles/h or more) on the Motorway is £2,500 ($US4240) and a driving ban. However, fixed cameras are rarely used on motorways except to enforce lower speed limits at major roadworks. Mobile cameras are occasionally used.

1.4 The decision to allow netting-off for safety camera funding

The evaluation of effectiveness report by Hooke et al (1996) demonstrated that safety cameras were effective in reducing road casualties. They also noted that the deployment of more of these effective devices was hampered by lack of resources. The cameras are costly to install, operate, and maintain but these enforcement costs, where a fixed penalty notice is used, cannot be recovered directly by the police and local authorities. Only where cases are heard in court may the police and others claim their costs.

> "To address this funding problem the Government now accepts that those responsible for installing and operating cameras should be able to retain some of the fine revenue from offences detected by cameras, to cover their costs. This would enable better use to be made of existing cameras and for additional cameras to be introduced for road safety purposes. The next generation of cameras will be digital, offering greater capacity and flexibility at lower cost."

A new funding system was developed which took effect from April 2000. It enables local authorities, the police, magistrates' courts committees and other agencies involved in the enforcement process to have some of their camera enforcement costs refunded from a proportion of the fine revenue. A pilot scheme in eight police force areas demonstrated the effectiveness of partnerships and this funding system is now being introduced nationally. More information about the cost recovery mechanism may be found in the report 'A cost recovery system for speed and red-light cameras – two year pilot evaluation (Gains et al 2003) on the Department for Transport website at

http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_507639.pdf

In order to set up the system local partnerships need to be formed. These comprise representatives from local police forces, highway authorities, and Magistrates' courts and, where appropriate, the Health Authority, and the Highways Agency (the Agency of the Department for Transport that is responsible for the strategic network of motorways and trunk roads). Some of the areas involve other local agencies recognising that a reduction in casualties has wider benefits to society. A reduction in road casualties has great positive effects beneficial to the health, ambulance and fire services.

1.5 Rules for safety camera operation under netting off arrangements

The Government's Treasury criteria for allowing a proportion of the fines and penalties to be recovered are:

- Will performance against policy objectives, e.g. crime-fighting and prevention, be likely to be improved?
- Are arrangements in place which will ensure that the activity will not lead to the abuse of fine and penalty collection as a method of revenue raising and that operational priorities will remain undistorted?
- Will revenues always be sufficient to meet future costs, with any excess revenues over costs being surrendered?

- Can costs of enforcement be readily identified and apportioned without undue bureaucracy, and with interdepartmental and inter-agency agreement where necessary?
- Can savings be achieved through the change and are adequate efficiency regimes in place to control costs, including regular efficiency reviews?

A handbook has been developed (new edition in preparation) which gives guidance about how the cost recovery system should operate. The main areas covered are given below and a summary can be found at Appendix A.

1. The effects on speed and casualties must be monitored
Camera sites must be located where there is a history of speed related accidents. Cameras cannot be located for political and/or revenue generating purposes. All sites must be monitored for before and after speeds in areas where the cameras are operating.

2. Public perception must be actively managed
All areas have to produce a robust strategy as to how they are handling local education and communication issues. The cameras must be well signed and clearly visible and their location published in local papers, local radio and on web-sites.

3. Partnerships must include all relevant local organisations
Partnerships must include police, highway's authorities and magistrates' courts, the health authority should be a partner where appropriate. Each partnership should have a dedicated project manager.

All parties must sign up to a Service Level Agreement – this commits each partnership at a senior level for the duration of the project.

4. Financial protocols
All capital and revenue expenditure has to be directly attributable to *additional* speed and red-light camera enforcement. For more details see Appendix A

5. Benchmarking
Partnerships should produce benchmark costs that demonstrate that unit costs are reducing

6. Signing and visibility
Partnerships must ensure that signing arrangements comply with current regulations (Traffic Signs Regulations and General Directions) appropriate for various circumstances. Fixed speed camera housings should be yellow and not hidden behind trees, signs, bridges. The minimum visibility distance should be 60 metres where the speed limit is 40 mph or less and 100 metres for all other limits.

For mobile cameras, camera operatives at the mobile camera sites should wear fluorescent clothing and abide by all Health and Safety requirements, and vehicles should be clearly marked as camera enforcement vehicles.

Camera warning and speed limit reminder signs must be placed in advance of fixed or mobile speed enforcement taking place. Ideally these should be placed within 1 km of fixed camera housings and at the beginning of a targeted route for mobile enforcement sites.

Signs must only be placed in areas where camera housings are present or along routes where mobile enforcement will be targeted.

2. Effectiveness of safety camera operation in Britain

The report of the two year pilot evaluation (Gains et al 2003), further demonstrated the effectiveness of safety cameras in reducing the number of people killed or seriously injured[1] in road traffic accidents at cameras sites by 35 percent relative to the long term trend. The effectiveness of the fixed site cameras was to reduce killed or seriously injured casualties by 65 percent at camera sites and for mobile cameras it was 29 percent.

Public acceptance was good (see Section 3.2) and speed measurements showed that vehicle speeds at the camera sites has reduced by about 3.7 miles/h.

In the light of this, the Government gave the go ahead for all authorities in Britain to form partnerships to introduce camera technology for enforcement of speed limits.

3. Public acceptability

3.1 The media

In the early days of camera operation the national media did not pay too much attention to them. It wasn't until netting–off of fines to pay for more activity that the media started to become interested. During period of the trial of the netting-off process in eight areas there was an increase in the fine from £40 to £60 which encouraged the view that this was a stealth tax. There was a time, prominently reported in the press, that the Home Secretary said that the police should lay off motorists and concentrate on catching real criminals. Ministers were reported to be concerned that the increasing use of cameras could lead to failing public support.

In 2001 there was a perception that all fine revenue went to the safety camera partnerships and it took some time before the media were accurately reporting that only a proportion goes to the partnerships. This didn't stop some journalists calculating how much fine income was due to the Exchequer as the numbers of cameras increased.

During 2001 there were increasing calls by the national media and others to increase the conspicuity of cameras. The coverage in the press was a powerful lever on the opinion of the Minister. Some police forces were reported to be in favour of brightly coloured cameras as their position was that cameras are there to change behaviour to reduce death and injury through speeding. The cameras were not there primarily as a means of prosecution. It was reported that in the view of the police, behaviour change was more likely to occur if the police were open about their activities. The AA welcomed this openness.

The media saw as draconian catching people driving at 35 miles/h in a 30 miles/h speed limit when before cameras came into operation drivers were unlikely to be caught unless they were doing 40 miles/h. This campaign, mainly by the more right wing tabloids struck a chord in the mind of drivers. The Police started to be more

[1] Killed is a human casualty whose injuries result in death within 30 days of the accident
Serious is an injury for which the casualty is detained in hospital and/or fractures, concussion , severe shock requiring medical treatment, internal injuries, severe cuts and lacerations and death 30 days or more after the accident.

open about their thresholds for enforcing the speed limit which is, as a minimum, the speed limit plus 10 percent plus two miles/h, although in reality very few forces did, and still do not, enforce at levels as low as these. This side of the story was not reported by the media.

Gains et al (2003) report a survey of local press coverage in five of the eight pilot areas. During the first six months of operation the press coverage was overwhelmingly supportive (90 percent of column inches devoted to camera activity was supportive) but after this period the support dropped to about 70 percent of column inches being supportive, averaging at about 76 percent over the two years. This is a much higher proportion than for the national press which generally has not been supportive. At the height of reporting the level of press coverage was about 2600 column inches per quarter and this reduced to about half towards the end of two years.

Prior to 2000 when there were few cameras, the local press and radio did not devote much time and space to reporting camera activity and issues but as the number of partnerships has increased and their press officers started to provide information, there is more interest and more reports in the local media. These tend to be more balanced than some of the national press reports and have been generally supportive of the use of cameras. The local media seems to be more in touch with public opinion than the national press who perhaps see themselves as forming opinion.

3.2 Public opinion surveys

In August 2001, Direct Line, a motor insurer, published a survey of 2000 drivers and their attitudes towards speed cameras (MORI 2001). They found that 70 per cent of drivers were in favour of cameras and 70 per cent think that well placed cameras are a useful way of reducing accidents and saving lives.

Around that time there had been a spate of media reports about civil liberties and the Direct Line Poll showed that only 21 per cent of those surveyed thought that cameras were an infringement of people's civil liberties.

89 per cent said that the presence of cameras made them think more carefully about how fast they were driving. 69 percent thought that cameras should be well marked and conspicuous, although there was support from 20 percent of drivers for hiding cameras, and 13 per cent thought that some should be conspicuous and some inconspicuous. The most favoured location for speed cameras amongst two thirds of those surveyed was outside schools and at blackspots.

In June 2002, the London evening paper, The Standard, whose reporting was generally anti-camera, published the results of its own poll which found that 84 percent of those questioned in London and the South East of England thought cameras were a good thing. 69 percent reported obeying speed limits even when there was not a camera nearby and 49 percent said they had never been flashed by a camera. 85 percent believe that cameras save lives and 68 percent think that hiding them from view is unfair. There is more support for cameras amongst older drivers.

Stradling et al (2003) in their report on The speeding driver: who, how and why? asked about opinions of speed cameras and found that more females (82 percent) than males (68 percent) thought them a good thing and support for speed cameras

increased with age of driver from 57 percent of 17-24 year olds to 87 percent of over 65s on favour. In reviewing the results of the surveys, Scottish Road Safety Units agree that speeding drivers, especially male drivers under 24 years and over 40 should be targeted by well planned and resourced publicity campaigns.

The AA Motoring Trust, (the charitable research and policy arm of the Automobile Association) have had questions placed in an NOP omnibus survey annually since 2001. The 2003 survey found that 88 percent of drivers were in favour of the use of cameras for red light running and speeding but this reduced to 78 percent for speeding offences. Acceptability of cameras by those with prosecutions for speeding offences was 62 percent.

Over the three years of the survey, drivers' acceptance of cameras has remained largely unchanged despite a steady increase in those having personal experience of prosecution. In this survey like that for Direct Line two years earlier, drivers were accepting of use of cameras at blackspots and where used they should be conspicuous.

Attitude surveys were conducted locally in the eight pilot areas to gauge the effectiveness of information presented by camera partnerships that the primary motivation behind additional enforcement was to improve road safety. The results were in line with the national surveys with support for cameras for casualty reduction but there was a level of concern about revenue raising. These local surveys were undertaken before cameras became highly visible in June 2002.

The results from the surveys are consistent with each other and consistent over time. They demonstrate the relationship between conspicuity and acceptability in the minds of the driving public.

3.3 How drivers respond

Surveys of drivers shortly after speed cameras became authorised for use on British roads were undertaken by Corbett (1995) who found that drivers' initial reactions to the installation of speed cameras could be categorised into four types:

- **conformers**; those that reported they normally complied with speed limits so cameras would make no difference to them. They tend to be more cautious, older and more experienced drivers and the least likely of the four groups to have had a crash in the previous three years.
- **the deterred;** those who reduce their speed on roads where camera are installed. This group was somewhere between the conformers and the manipulators.
- **manipulators**; those that slow down on the approach to cameras and speed up again afterwards: and

defiers; those that stated they carried on as before driving well above the speed limit.

The aim of speed cameras is to reduce the size of the proportion of manipulators and defiers. Corbett and Simon (1999) undertook a survey of 3440 drivers (four samples added together) to find out more about defiers and manipulators in order to provide information on these groups so that effectiveness of cameras and speed management in general could be increased. The manipulators were the most calculating and sophisticated in their reaction to cameras. They tended to be younger drivers with high offending scores and who reported driving at the highest speeds on the roads before cameras were introduced. They do not approve of cameras but know where

they all are and think they know how they operate which gives them the confidence to drive past them without being caught.

The defiers were more likely to drive high performance or company cars and generally denied a link between speeding and crash occurrence. They had the highest speed preference scores (i.e. they liked driving fast and usually did so everywhere) and were of the opinion that the police would not take action against them even if they were photographed. This was an attitude expressed in the early days of cameras when there were not many around and there were of the order of one cameras to 10 to 15 or even 20 boxes. It was Corbett and Simons' opinion that the attitude of this group would be likely to change as cameras became more widespread and whilst they may not turn into the deterred, they would likely become manipulators.

This work is useful in allowing insights to those who deliberately speed. There will always be those conformers and the deterred who will be caught on camera during periods of concentration lapses but in the main it is those who persistently drive with higher speeds that need to be deterred from doing so. Stradling et al's (2003) recent findings on the causes and consequences of speeding in Scotland also points to persistent speeders being among those with high accident records. Their survey found that excess and excessive speed out of town had risen over the last decade whilst excessive speed in towns has fallen, partly due to the popularity of traffic calming measures. The report also identified that speeders identified in their study have a higher likelihood of crash involvement with drivers who had been stopped for speeding or had been flashed by a speed camera having double the incidence of recent accident involvement.

3.4 Role of pressure groups

In Britain the pressure groups have an important role to play in the democratic process. The groups that are best organised are those listed below. The first three are road safety groups who campaign for slower speeds, reduced car use and better provision for the non-motorised modes. The second four are campaigning for the motorcyclist and motorist.

Sections 3.4.1 to 3.4.5 contain extracts from of their respective websites.

3.4.1 Transport 2000:

Transport 2000 is the independent national body concerned with sustainable transport. It looks for answers to transport problems and aims to reduce the environmental and social impact of transport by encouraging less use of cars and more use of public transport, walking and cycling.

Transport 2000's vision is of a country where traffic no longer dominates our lives, where many of our journeys can be made on foot, by cycle or using public transport and where you don't need a car to enjoy the countryside or city life.

Transport 2000 is also campaigning for better enforcement of speed limits. It believes speeding is just as lethal as drinking and driving, and should become equally unacceptable. It supports moves by the Government to allow more use of speed cameras, with fines recycled to pay for enforcement. The Government Speed Camera

Partnership programme has now been extended to most police areas and the remaining police forces are expected to sign up by the end of 2003.
http://www.transport2000.org.uk/

3.4.2 Slower Speeds Initiative

The Slower Speeds Initiative was founded in March 1998 by the Children's Play Council, Cyclist's Touring Club, Environmental Transport Association, Pedestrians' Association, Pedestrians' Policy Group, Road Danger Reduction Forum, RoadPeace, Sustrans and Transport 2000.

They believe that lower traffic speeds will bring important community benefits by: improving road safety; reducing noise, stress, pollution and fuel consumption; and encouraging cycling, walking and public transport. They claim that their approach has been endorsed by 17 local authorities, over 30 national organisations and nearly 200 community groups.

The **Slower Speeds Initiative** campaigns for:

- lower and better enforced speed limits
- higher profile for speed reduction initiatives
- development of speed control technology
- changes in the law to allow conviction of speeding drivers who kill and maim

http://www.slower-speeds.surf3.net/index.htm

In March 2003, Transport 2000 and the Slower Speeds Initiative acted together to challenge in the High Court the Government's decision to paint speed cameras yellow. They sought to overturn Government guidance that came into force in June 2002 requiring all fixed speed cameras in safety camera partnership areas to be painted yellow and sited conspicuously.

Campaigners were concerned that brightly painted conspicuous fixed site cameras might not work as effectively as inconspicuous ones. They argued that if cameras are highly visible drivers will slow down when they see one but then speed up again afterwards when they see the coast is clear. If cameras are grey and less conspicuous then drivers can't see them in advance, don't know where they are and will be more likely to stay within the speed limit at all times.

Instead campaigners would like to see safety camera partnerships (incorporating the police, the local authority and others) given the discretion to enforce speed limits in the way that they think is appropriate to their local area. This would mean allowing the use of covert (non-yellow) cameras where appropriate

The judge ruled that camera partnerships could seek permission from the Secretary of State for Transport to use grey cameras, but to date none has.

3.4.3 Brake

Brake is a road safety charity dedicated to stopping deaths and injuries on roads through awareness-raising campaigns, including Road Safety Week and educational resources including leaflets, posters and advertisements.

They also care for people bereaved and injured on the road.

http://www.brake.org.uk/

3.4.4 Motorcyclists Action Group (MAG)

The Motorcycle Action Group (MAG) was formed in 1973 to campaign for voluntary crash helmet use . Since that time MAG has broadened the scope of its activities, making MAG the leading body campaigning on behalf of motorcyclists in the UK.
http://www.mag-uk.org/about_mag.html

3.4.5 ABD (Association of British Drivers)

The ABD (Association of British Drivers) was founded in 1992 by a group of drivers from all walks of life and from all parts of the UK. The ABD is motivated to counter the rising tide of irrational anti-car propaganda and regulations.
The objective of the ABD is to provide an active, responsible voice to lobby for the beleaguered British car driver. The ABD campaigns for:

- Recognition of the fact that roads are an essential part of the UK transport system; and that traffic is the lifeblood of the economy.
- Improved standards of driver training.
- Realistic speed limits based upon road safety requirements not political correctness.
- Improvements in road and vehicle safety.
- More of the taxes derived from motorists to be spent on roads.
- No motorway tolls, no 'congestion charging', no workplace parking tax.
- An end to the abuse of speed cameras.

http://www.abd.org.uk/

3.4.6 The motoring organisations; The AA and the RAC

The AA (Automobile Association)
http://www.theaa.com/
The RAC (Royal Automobile Club)
http://www.rac.co.uk/

Each organisation campaigns vigorously for its own position. The organisations are well established, respected and are part of the formal consultation process. The AA and the Slower Speeds Initiative are the probably the most influential in the area of speed management.

The two largest motoring organisations are the AA and the RAC. They both represent their members across a wide range of areas. The position of each is that speed limits should be correct for the type of road and that speeding is to be discouraged. They are not opposed to speed cameras if they are correctly sited within the rules and the speed limit is right for the road. This implies that the cameras are not necessarily viewed as revenue raising if correctly sited.

3.4.7 The Parliamentary Advisory Council for Transport Safety (PACTS)

There is an important NGO, the Parliamentary Advisory Committee on Transport (PACTS) which is perhaps the most influential of all the groups except the AA. It has a very strong pro road safety position and its voice is listened to by Government and the Motoring Organisations.

PACTS is a registered charity and an associate Parliamentary Group. Its charitable objective is "To promote transport safety legislation to protect human life". Its aim is to advise and inform members of the House of Commons and of the House of Lords on air, rail and road safety issues. It brings together safety professionals and legislators to identify research-based solutions to transport safety problems having regard to cost, effectiveness, achievability and acceptability.

PACTS often takes the Government to task for slow progress, especially in the area of speed management where it thinks the Government could do more – not necessarily with introducing more cameras but a with a wide range of speed management measures
http://www.pacts.org.uk/

3.4.8 Summary

There is a surprising amount of common ground between the pressure groups with the possible exception of the Motorcyclists Action Group who tend to be independent of the others, and the ABD.

The pro-road safety groups have campaigned hard for the introduction of cameras and are very supportive of their use. In some ways they do not see the Government being tough enough and this view is encapsulated by the legal challenge mounted by two of the groups. The motoring organisations are vigorous in their campaigning against covert cameras and for a review of speed limits on different types of roads. This is not a campaign to raise limits but to make sure they are appropriate. The Department for Transport is currently developing a speed management assessment framework for this purpose. This is seen as a key part of the speed management debate by all groups. The Slower Speeds Initiative see it as paving the way to justify lower speeds on most roads, especially rural lanes, the motoring organisations for matching limits to road type and function. All, except the ABD who are opposed to cameras of any kind, are agreed that automatic enforcement has its place but on exactly what is its place they differ.

The attitudes of the various groups are consistent with attitude surveys undertaken in Europe on other issues. For example in the MASTER project (MAnaging Speeds of Traffic on European Roads) a survey showed that drivers wanted better information so they could make up their own minds about the appropriate speed at which to drive on different roads in town. Drivers did concede that they should slow down near schools and where there were pedestrians about. People who didn't drive or who were interviewed as pedestrians wanted traffic calming so as to 'force ' drivers to slow down. The difference between the two groups was strong and found in more than one country (Risser and Lehner 1998). The results from the speed camera studies show similar results with drivers and motorists' groups wanting more information about the camera locations (i.e. high visibility) and to have them outside schools and other acknowledged hazardous locations. On the other hand the pro- pedestrian and cyclists groups want more covert operation and more camera activity to bear more heavily on speeding drivers.

4 Opinion

Enforcement of speed limits by the use of speed cameras is effective but controversial. The controversy has heightened since the formation of partnerships and the retention of part of the fine and penalty revenue to fund an increase in camera activity. The heart of the issue is that both the real and perceived chance of being prosecuted for speeding have risen rapidly and are probably closer together now than they ever have been. In the early days the perceived chance of being caught was higher than the actual chance because very few fixed site camera boxes had active cameras, and mobile activity was sporadic.

It is interesting to speculate as to why the controversy about deployment of speed cameras increased since the fine income has been netted-off to partnerships. There remains a real tension between revenue raising and road safety in the mind of some sectors of the public, especially those who have been fined for speeding. More people are being convicted of speeding offences with one in five people in a recent AA Motoring Trust survey having been convicted of a speeding offence in the last three years compared with one in six people in the 2001 survey. During this period there has been a rapid increase in the number of camera partnerships with only a very few police forces not using automatic enforcement. In the first two years or so the media portrayed the cameras as revenue raising with the police retaining the fine income. Gradually over time this misperception has been corrected by partnerships' own press offices and there is now more accurate coverage on this. This, together with the publication of the results of the two year pilot study (Gains et al 2003), has demonstrated that cameras are reducing casualties and are here to stay.

The Government's position is clear. It sees speed cameras operating to reduce road traffic casualties, and therefore they operate for the benefit of society. The fact that the revenue stream from cameras is uncertain is not an issue (as compliance rises income from fines falls) as changes could be made to the mechanism for funding camera activity, and as compliance improves, camera use may be reviewed and scaled down as appropriate.

The level of controversy over camera funding is starting to fall as evidence of their effectiveness in reducing the number of casualties increases. Recent surveys indicate that over three quarters of those questioned are accepting of fixed speed cameras proving they are highly visible and sited at hazardous locations. Even amongst those who have been fined, there is a strong favourable opinion provided the cameras are well sited at hazardous locations, fully conspicuous and the route well marked. There is an issue of a difference of perception by drivers and accident led analysis as to what is a risky location and which problems a speed camera is well placed to solve and where it will have little or no effect. This is another issue which affects acceptability as many drivers cannot see the point of some of the camera locations. A public relations exercise is needed in these situations but this will only be effective providing everything in road safety engineering terms has been done to solve the accident problem and the camera is demonstrably the best solution.

Cameras at traffic lights have never been contentious, probably because it is evident to all drivers that jumping red lights is dangerous whereas the prevailing public attitude to speed is that everyone drives a bit above the speed limit and it is only those who are exceeding the limit by a wide margin that are dangerous. The research

findings do not support the public view and more effort is necessary to bridge this gap. This in itself will help to increase public acceptability.

The pressure groups, both pro and anti-camera have had an impact on shaping public opinion. The ABD in particular has access to the motoring press which is uncompromisingly pro-car and anti-camera. The big national motoring organisations take a more moderate line and see the benefits of enforcement provided it is in the right place with cameras highly visible. Their position is to try to shift the debate towards having speed limits more closely matched with the road conditions. The pro-camera lobby is campaigning for more equity in the use of the roads so that pedestrians and cyclists can travel in safety and reduced fear from fast moving traffic. The platform of some of these groups includes campaigning for a reduction in the amount of car travel.

The pro-road safety groups campaign for more covert operation of cameras because it is their view that the full potential of cameras is realised through a combined use of conspicuous cameras at hazardous locations and of inconspicuous cameras where there is a problem of excess speed and associated injury accidents spread over a long stretch of road or around a local area. The use of inconspicuous cameras is clearly not an acceptable strategy to drivers and politicians who do not want to appear anti-motorist. The view of the police lies somewhere in between the two camps. There have been concerns expressed that over reliance on automatic technology for speed reduction means that other dangerous practices are overlooked because police are taken away from traffic to other duties.

Enforcement in Britain is a partnership between the police and the public. The police enforce by consent and if they are too heavy handed and the public withdraws its consent to the level of enforcement then there is a backlash. There is a fine line to be walked by the police, safety camera partnerships, and politicians between being heavy handed in the eyes of the drivers and too soft in the eyes of the road safety campaigners. At the moment they are probably being over cautious and erring towards the soft side. But as cameras become more of a fact of motoring life, if public acceptability remains high, and especially if the rate of casualty reduction stalls, then some partnerships may choose to ask the Secretary of Sate for Transport for permission to use inconspicuous cameras and thereby become a little tougher.

5 Acknowledgments

The views expressed in this note are the authors own. Thanks are due to the Department for Transport and the AA for access to documents.

6 References

Corbett C (1995) Road traffic offending and the introduction of speed cameras in England: the first self-report survey. Accident Analysis and Prevention, 27, 345-354

Corbett C and Simon F (1999) The effects of speed cameras: how drivers respond Road Safety Research Report No 11 Department of Transport and the Regions

Gains A, Humble R, Heydecker, B and Robertson S (2003) A cost recovery system for speed and red-light cameras – two year pilot evaluation. Research Paper, Department for Transport

http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_507639.pdf

Hooke A, Knox J, and Portas D (1996) Cost benefit analysis of traffic light and speed cameras. Police Research Series Paper 20, Police Research Group, home Office London.

London Accident Analysis Unit (1997) West London Speed Camera Demonstration Project : Analysis of accident and casualty data 36 months 'after' implementation and comparison with the 36 months 'before' data. London Accident Analysis Unit http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_023366.hcsp

MORI (2001) Direct Line Survey. MORI London http://www.mori.co.uk/polls/2001/dl-010720.shtml

Risser R, and Lehner U (1998) Acceptability of speeds and speed limits to drivers and vulnerable road users MASTER Deliverable Report R.2.2.2 European Commission

Stradling S, Cambell M, Allan I, Gorell R, Hill J and Winter M (2003) The speeding driver: who, how and why? Development Department research Findings Report no 170. The Scottish Executive Edinburgh http://www.scotland.goc.uk/library5/finance/drf170-00.asp

Appendix A: Handbook summary

Prior to the start of the pilots a handbook was developed which gives guidance about how the cost recovery system should operate. As the pilots progressed, and more was learned about best practice, this guidance has been strengthened. These are summarised in the table below.

Guidelines for pilot areas	Current guidelines for national rollout
1. The effects on speed and casualties must be monitored	
Camera sites must be located where there is a history of speed related accidents. Cameras cannot be located for political and / or revenue generating purposes. All sites must be monitored for before and after speeds in areas where the cameras are operating.	Prior to approval, partnerships must prioritise sites and have quantified evidence that those selected have the greatest casualty problems. Broadly, these should follow the guidelines in Table 10 below although there is some flexibility. In total, enforcement should aim to cover at least 10% of KSIs in an area and ideally more. Partnerships must collect data on child and pedestrian casualties and hospital bed data. Partnerships must have conducted speed surveys in advance of case approval to demonstrate that excess speed is a problem at the priority sites.
2. Public perception must be actively managed	
All areas have to produce a robust strategy as to how they are handling local education and communication issues	All partnerships are required to have a dedicated communications manager. The cameras should be well signed and highly visible. The location of the cameras should be published in local papers, local radio and on web-sites.
3. Partnerships must include all relevant local organisations	
Partnerships must include police, highway's authorities and magistrates' courts. All parties must sign up to a Service Level Agreement – this committed each partnership at a senior level for the duration of the project.	Should also involve local health authority, CPS and Highways Agency. Each partnership should have a dedicated project manager. All local authorities in an area should be part of the partnership.
4. Financial protocols	
All capital and revenue expenditure has to be directly attributable to *additional* speed and red-light camera enforcement – these were detailed in a handbook which set out the rules of the system	*All* costs attributable to speed and red-light cameras are recoverable rather than additional costs.
Each partnership had a treasurer who kept the accounts	No change.
Partners were paid on the basis of receipts for expenditure incurred.	No change.
At the end of the financial year, these accounts were audited by the District Auditor against rules set out by the Audit Commission (for England and Wales - Accounts Commission in Scotland)	No change. Revised guidelines are produced in conjunction with the Audit Commission (and Accounts Commission) following the end of year audit.
Failure to receive a clear audit certificate would result in the privilege to 'net off' receipts' to be withdrawn.	No change.

Guidelines for pilot areas	Current guidelines for national rollout
5. Benchmarking	
Partnerships should produce benchmark costs that proved that unit costs are reducing	Partnerships must compare favourably in efficiency with existing partnerships before being accepted on to the system. The use of new technology to reduce manual processes and, in particular, police intervention is encouraged. Chasing non-payers and making out of force enquiries is mandatory.
6. Signing and visibility	
Partnerships ensured that signing arrangements comply with Traffic Signs Regulations and General Directions appropriate for various circumstances.	Fixed speed camera housings in all but exceptional circumstances should be yellow. All camera housings (existing and new) should be visible to road users and not hidden behind bridges, signs, trees or bushes. The minimum visibility distance should be 60 metres where the speed limit is 40 mph or less and 100 metres for all other limits. For mobile cameras, camera operatives at the mobile camera sites should wear fluorescent clothing and abide by all Health and Safety requirements, and vehicles should be clearly marked as camera enforcement vehicles. Camera warning and speed limit reminder signs must be placed in advance of fixed or mobile speed enforcement taking place. Ideally these should be placed within 1 km of fixed camera housings and at the beginning of a targeted route for mobile enforcement sites. Signs must only be placed in areas where camera housings are present or along routes where mobile enforcement will be targeted.

Source: Gains et al (2003)