

# Road Safety Strategy in Great Britain: Research into Practice

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## **Biography**

With a background in economics, Kate McMahon is the Deputy Head of Road Safety for the Department for Transport, Great Britain.

She has worked in road safety since 1986 and has responsibility for development and management of the road safety research programme at the Department for Transport and for monitoring and reviewing the Road Safety Strategy and casualty reduction targets for 2010.

Her particular interests are in driver behaviour, driver training and testing, child safety and vulnerable road users. She is a member of the Research Advisory Group of the AA Foundation for Road Safety Research and OECD expert groups as well as currently chairing the OECD Expert Group on Child Road Safety.

## **Abstract**

The Department for Transport has a long history of Road Safety Research underpinning policy development. In March 2000, the Government's Road Safety Strategy "Tomorrow's Roads – Safer for Everyone" was published. This contained casualty reduction targets for 2010 (based on the average of 1994-1998), and a policy framework for meeting those targets.

The Strategy and the targets were developed following a process of analysis, consultation and statistical forecasting. Policy proposals took account of research findings and were discussed in consultative sub-groups. Recommendations for targets were based on detailed analysis of past casualty trends, impact of major policies, and assumptions about the effects of future policies.

Examples of key policies for which substantial research was required for their development are hazard perception testing and child pedestrian training. The research programmes, piloting and evaluation will be described.

## **1. INTRODUCTION**

Road safety policy in Great Britain has been influenced by research findings for several decades. There is a strong history of research being used to inform policy development, and for trials, monitoring and evaluation of safety measures. This firm research base has helped to ensure that road safety policy is evidence based. For example, research on the effects of alcohol on driving, in particular the Grand Rapids study in 1962, led to Parliament in 1966 passing the Bill which made it an offence to drive with over 80mg of alcohol per 100ml of blood, and to compulsory testing for alcohol at the roadside.

## **2. STRATEGY AND TARGETS**

In 1987, for the first time, a casualty reduction target was announced following a comprehensive review of road safety policy and research. The target was to reduce casualties by one third by 2000 compared with the average for 1981-85. This target was very successful in raising the profile of road safety and led to increased resources and more focused local and national action. Although the overall target was not achieved due to increasing slight casualties, deaths declined by 39% and serious injuries by 49%.

A key outcome of the target for 2000 was the establishment of a common goal for all concerned with road safety. It generated a real commitment to reducing road casualties. In the later years of the 1990s, consideration was given to the approach to be taken for the post 2000 period. To be successful, road safety policy has to be accepted and implemented by all sections of the population. Therefore consultation was undertaken on whether there should be a new target.

Targeting the Future (DOT 1996) supported the concept of a new target, and set out options. The objective of a target for reducing road casualties is to guide, motivate and challenge those people capable of delivering or influencing reductions in the daily toll of deaths and injuries on the roads. The document invited views on the most appropriate way forward for the future. Following this consultation exercise, it was decided that the new target should be:

- A simple headline national target;
- Different for killed and seriously injured and slight casualties;
- For 2010 using 1994-1998 average as baseline;
- Based on casualty forecasts taking account of expected traffic growth.

Once the question of the type of target was settled, work began on producing a strategy for the future. The Transport Research Laboratory produced three review documents covering the research evidence for the effects of safety engineering, driver behaviour measures and vehicle safety engineering on casualty reduction. This was supplemented by an internal review of current road safety problems, progress towards meeting the target for 2000 and future policy options. These reviews formed the foundation for a future road safety strategy and summarized the current casualty position in terms of trends, problems and priorities. (DETR 1997).

A key task in developing the Strategy for 2010 was to produce casualty forecasts which would inform the choice of target. A forecasting group was set up, chaired by an independent expert, Professor Richard Allsop, which included the Transport Research Laboratory (Jeremy Broughton and David Lynam) the Department of Environment, Transport and the Regions (Kate McMahon) and the Highways Agency and the Scottish Office. The forecasting methodology was developed by Jeremy Broughton and was based on analysis of past trends in casualty rates together with assessment of the effects of policy.

A range of forecasts for casualties in 2010 were produced, based on assumptions about underlying trends in casualty rates, effects of future policies, and traffic growth scenarios. These forecasts were used to make recommendations to Ministers on the target to be chosen for 2010.

**TABLE 1 FORECAST KSI CASUALTY REDUCTION ON SELECTED SCENARIOS: 2010 COMPARED WITH 1994-98 BASELINE**

	HIGH TRAFFIC	CENTRAL TRAFFIC	LOW TRAFFIC
<b><u>KSI REDUCTION</u></b>			
LOW POLICY	-38%	-46%	-52%
FULL POLICY	-43%	-50%	-56%
<b><u>TRAFFIC GROWTH</u></b>			
1996-2010			
CAR TRAFFIC	+35%	+25%	+15%
MOTORCYCLE TRAFFIC	+50%	0	-25%

The policy framework for the Road Safety Strategy to deliver the new target was developed in parallel with the forecasting work. The two workstreams were combined to produce options for the target which took account of both the casualty forecasts for a range of traffic scenarios and the policies which were to be included in the Strategy. The choice of target was determined by careful judgement between what can reasonably be expected and what can be aspired to as a challenge for the next ten years. The target was announced on 1 March 2000 and the Strategy (DETR 2000), and a TRL report on the casualty forecasting work (Broughton et al 2000) were published on the same day.

The target for 2010, compared with the baseline average for 1994-98 is:

- 40% reduction in killed and seriously injured casualties
- 50% reduction in children killed and seriously injured.
- 10% reduction in the casualty rate for slight injuries per km traveled.

This target was enhanced in 2002 by addition of the aim of tackling the significantly higher incidence of casualties in disadvantaged communities

### **3. THE STRATEGY**

Key policies in the Strategy are:

Priority for child safety

- improvements to road safety education and child pedestrian training schemes
- more 20mph zones
- specific child safety measures in Local Transport Plans

Novice Drivers

- More structured approach to driver training and testing
- Add hazard perception to the theory test
- Raise standards of driving instructors

Impairment

- Review penalties for drink driving
- Introduce evidential roadside testing
- Continue development of drug screening devices
- Support police training on drug recognition
- Develop research and publicity on driver fatigue

Infrastructure

- Local transport plans to include local road safety strategy
- Cascade good practice from Gloucester Safer City project
- Monitor accidents and address problem sites

Motorcycling

- New licensing rules for learners
- Register of motorcycle trainers
- Develop motorcycle strategy
- Guidance for riders returning to motorcycling

## Speed

- Develop framework for determining appropriate speed limits
- More effective enforcement using speed cameras with new financial arrangements
- Tougher penalties for high speeders
- New publicity campaigns
- More 20mph zones, and traffic calming in villages

## Pedestrians and Cyclists

- Local transport plans to include measures to increase walking and cycling and improve safety
- Pedestrian routes in towns
- Lighting for safety and security
- Well designed and positioned crossings
- Traffic calming and cycle lanes
- Training for adult cyclists
- Promote cycle helmets

## Vehicle safety

- Improved braking systems
- Better occupant protection (side and front impact protection, improved HGV cab design, HGV underrun guards)
- Pedestrian friendly car-fronts
- Consumer information through EURONCAP

## **4. PROGRESS TO DATE**

The graphs below show progress towards the 2010 targets against an assumed constant rate of reduction. By 2002, killed and seriously injured casualties fell by 17%, the number of children killed or seriously injured fell by 33% and the slight casualty rate was 12% below the baseline.

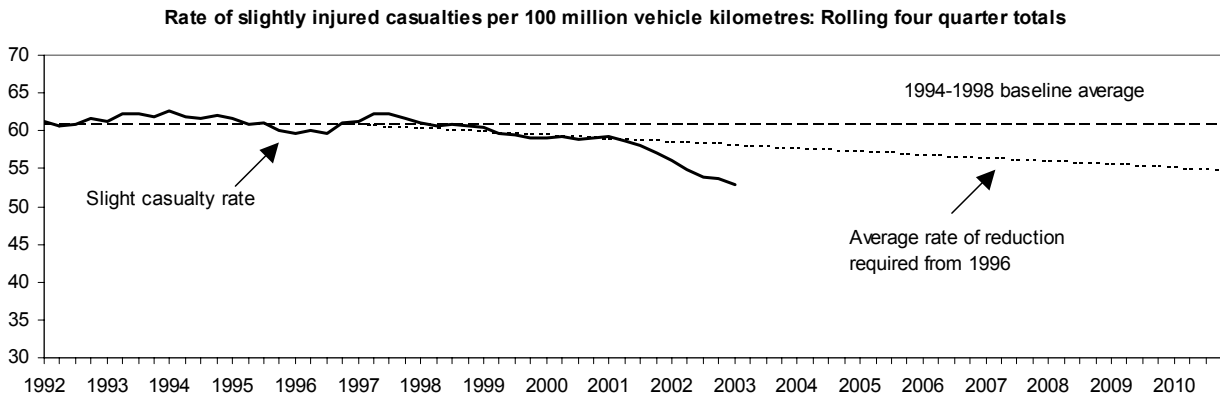
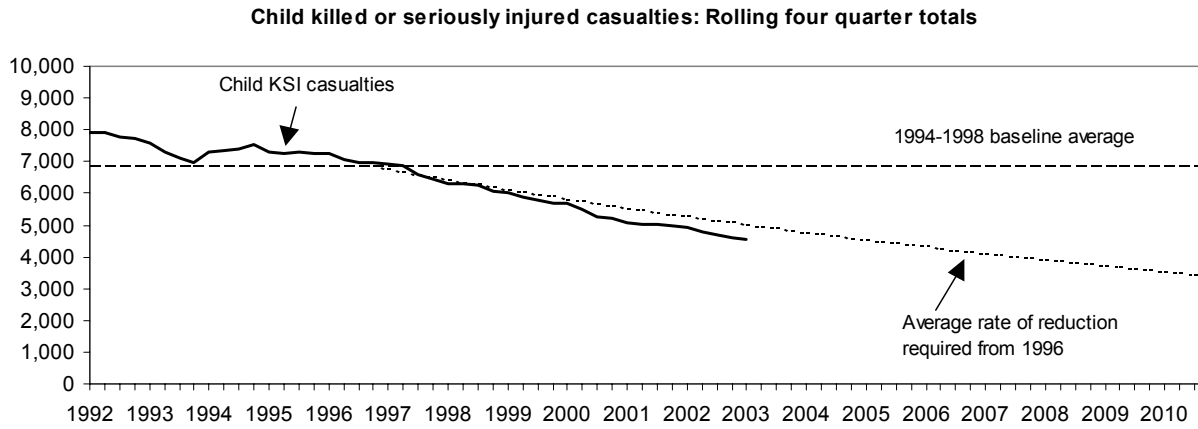
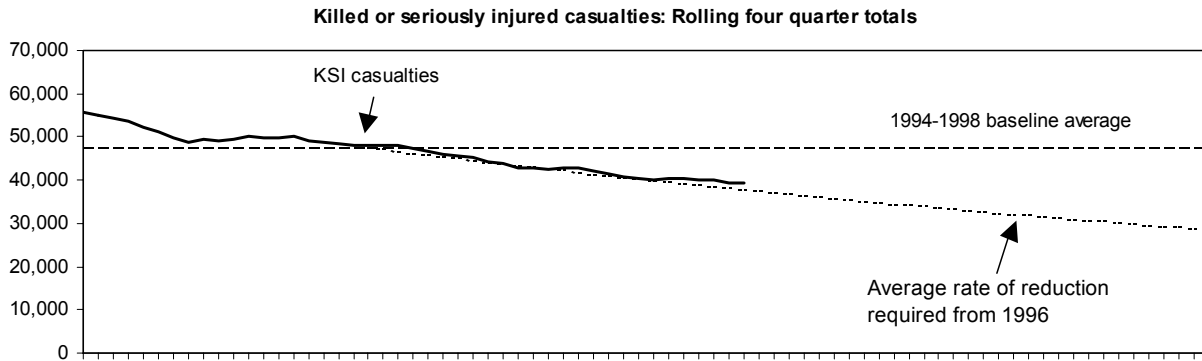
Although this progress looks satisfactory there are a number of points of concern. The overall rate of decline of killed and seriously injured casualties is a little below that needed to achieve the 40% target reduction. This is not yet a problem, because there is time for new measures to take effect. However, deaths have only decreased by 4%. Although the slight casualty rate target appears to have been met already, the change in the trend of slight casualties has raised concerns that reporting levels may be declining.

## **5. THE REVIEW OF THE ROAD SAFETY STRATEGY**

When the Strategy was published it was announced that it and the target would be reviewed every three years. The first of these Reviews is now in progress. It will examine progress towards the target, taking into consideration policy development and implementation, casualty trends, new issues and will also revisit the casualty forecasts.

Key issues that are being addressed by the Review are the slow down in decline of deaths, under-reporting of slight casualties, dealing with disadvantaged areas, new technology, enforcement of traffic law, and driver behaviour. It will also look beyond the 2010 horizon in order to identify emerging problems and policy opportunities. A statistical monitoring report is produced every year and the current report which includes 2002 data is in preparation and is a key input to the Review.

## Progress towards the UK government's casualty reduction targets for GB



## **Policy Development and the Road Safety Research Programme**

Although there is a long history of road safety research in Great Britain, changes since the 1980s in its focus and in its management have had a great influence on how research relates to policy. In 1986, a major programme of driver behaviour research was initiated in response to the recognition that a better understanding of road user behaviour and accident causation was required. Although road deaths had fallen from the peak of 7,985 in 1966 to 5,165 in 1985, both deaths and injuries appeared to have reached a plateau.

Until 1990, all Department of Transport research was carried out or managed by the Transport Research Laboratory. Although research was influenced by policy requirements, it was not directly policy led, and not integrated into the work of policy divisions. A fundamental change was introduced termed "Customer Held Budgets" which mean that for the first time policy divisions held research budgets and became actively involved in their research programmes. This was the precursor to the current position where TRL has been privatised and research is commissioned by competitive tender from a wide range of contractors.

Within Road Safety Division these changes have led to the integration of research with policy. The result has been a research programme that is responsive to policy needs, and, importantly, there is now a requirement from policy makers for high quality research evidence. This has the result that the implementation of research results is much more likely and policy development has benefited.

The growing understanding of behaviour that has been achieved through behavioural research, initially for drivers, but also for children and motorcyclists, has directly influenced policy. Road safety policy has traditionally been characterised as the three "E's" – engineering, education and enforcement. Good understanding of behaviour informs all three elements, and also provides the necessary knowledge so that synergy between the different policy areas can be achieved. There is now a much better understanding than existed when the first target was set in 1987, that the three E's are not alternative policy options but are usually most effective as part of an integrated approach to policy.

An example of this integrated approach is speed policy. Engineering solutions to reduce speed have been very successful in residential areas where traffic calming and 20mph zones have been adopted. On other roads, some engineering measures are appropriate, but less useful on higher speed roads. Here the requirement is to influence drivers to lower their speeds and to conform to speed limits and to road conditions. This is not easy to do as many drivers get positive feedback through speeding in terms of thrill, perceived shorter journey times, and an unrealistically low expectation of increased risk. A study of speeding from the criminological perspective (Corbett et al 1998) showed that those who drive faster do so partly because they feel the most invincible and most in control. Such behaviour is being addressed through driver training and through advertising that alerts drivers to the risks of speeding. In addition, enforcement has been increased by the use of cameras, prominently positioned at sites with high accident rates. This use of cameras is proving highly successful, with a 35% reduction in the number of people killed or seriously injured at camera sites in the first two years (DfT 2003a).

Seat belt wearing is another good example. Research on the efficacy of seat belts led directly to legislation for compulsory fitment, and to compulsory wearing in front seats in 1983, and in rear seats in 1989 for children, and in 1991 for adults. The legislation was preceded by sustained advertising campaigns which led to fairly high voluntary wearing rates which were boosted by legislation. The behavioural change has been achieved more by persuasion and education than by enforcement, but the law was the necessary final impetus to raise wearing, especially in the front, to high levels. We are still working to raise rear seat wearing to the same level.

Drink-drive policy is another area where a combination of measures has been required. The introduction of the breathalyser in 1966 was a watershed in terms of enforcement, but equally important has been publicity and education which have successfully convinced all but a small minority of drivers of the unacceptability of drinking and driving. In 1979, 1,640 people died in alcohol related accidents, but by 2001 that figure had fallen to 480. A contribution has also been made from drink-drive rehabilitation schemes which have been evaluated through the research programme and shown to reduce recidivism. Six years after conviction, only 7.6 per cent of course attendees had reoffended compared with 17.9 per cent of non-attendees. (Davies and Smith, 2003)

However, the number of drink-drive accidents seems to have stabilised in recent years and we now need to consider how we can tackle what appears to be a hardcore of drivers who are immune to current policy measures. The risk of disqualification is a considerable deterrent to many drivers, but the hard core who are prepared to take the risk are confident in their ability to drive despite high levels of alcohol, and perceive the risk of detection as low. (Corbett and Simon 1992).

Under consideration are changes to police procedures and to penalties, and also the possibility of alcolocks for persistent offenders. It is interesting to compare British experience with that in New South Wales. Although the BAC limit is lower at 50mg/ml in NSW than in Great Britain where it is 80mg/ml, and NSW has a policy of random breath testing, the incidence of drink drive accidents remains substantially higher in NSW, and has also stabilised in recent years following considerable improvement until the early 1990s. As noted above, a key factor in the British system is the automatic minimum 12 month disqualification period which has significant deterrent value. There is also a more stringent regime for "High risk offenders" who are defined as repeat offenders within 10 years or those with BAC levels over 200mg per 100ml of blood. Imprisonment of up to 10 years can be imposed for those who cause death whilst driving under the influence of alcohol.

## **6. THE CURRENT ROAD SAFETY RESEARCH PROGRAMME**

The annual budget for research is £4.6m, and there are generally around 50 projects in the programme. Key areas for research are:

- Vulnerable road users, particularly children.
- Driver behaviour, in particular, novice drivers and driver training and testing
- Motorcyclist safety
- Speed management and safety engineering
- Impairment (drink, drugs and drowsiness)
- Work related accidents
- Accident causation
- Medical factors such as diabetes, vision, cognitive impairment.

Details of the current programme and recent research results are published annually (DfT 2003b).

The research programme in each area can be seen as a continuum: identification of a problem; analysis of causative factors; development and trial of countermeasures; monitoring and evaluation of implemented policy. Policy evaluation is a key requirement in the Department.

Research on child safety has included a programme of child development research, drawing on child developmental psychology in order to increase understanding of skill development. The results are being used to develop and trial education and training, and to influence publicity.

The driver training and testing regimes have been the subject of extensive research leading to changes in the practical test and the introduction of a theory test. Current research is evaluating driver improvement schemes, assessing the extent and risks of unlicensed driving, and collaborating with European projects on social attitudes to risk and standards for testing.

Motorcyclists are relatively high risk road users. Current research is investigating older motorcyclists, multivariate analysis of accident risk, and training.

Speed management research includes safety camera assessment, reviewing speed limit setting, and development of a speed management assessment framework. Local authority activity is being monitored, and the safety effects of bus priority schemes and traffic signal strategies are being investigated.

The main effort on impairment research is directed to roadside testing for drink and drugs, and fatigue related accidents. Work is due to begin soon on the acceptability of alcohol ignition interlock devices.

Work-related accidents are a particular problem and research is investigating the role of safety culture in firms in reducing risk.

Several projects are concerned with accident causation. In-depth studies of work related and motorcyclist accidents are focusing on police accident reports. On-the-spot studies use teams of investigators who visit accidents as soon as they happen and collect data on vehicles, road environment and road users.

There is also a large programme of research into medical aspects of fitness to drive. This is investigating how to assess risk for drivers with diabetes, visual defects and cognitive impairment in order to inform decisions on licensing.

## **7. RESEARCH INTO PRACTICE: TWO EXAMPLES**

### **Hazard perception testing**

In November 2002, a hazard perception test was added to the theory test for all classes of driver. This was the culmination of two decades of research and development. (Grayson and Sexton 2002). One of the underlying assumptions of the programme of driver behaviour research that was started in the mid 1980s was that higher order cognitive skills are fundamental to the process of becoming a safe driver. Young novice drivers quickly master the physical skills needed to operate a vehicle on the road, but are less good at anticipating other road users' behaviour and recognising hazards. They pass the driving test relatively quickly, but once driving unaccompanied have high accident rates that decline rapidly with increasing experience.

Research at TRL on accident liability (Maycock et al 1991) showed that inexperience is the key contributor to the higher accident rates of young drivers. Analyses of the driving task (Grayson 1991) suggest that in the first few years a new driver is learning not just new skills, but formulating new rules, developing a new repertoire of strategies and learning new patterns of interaction. Therefore it would be highly desirable if the lessons of experience could be imparted during the learning programme preceding the driving test.

Research has shown that cognitive variables offer scope for intervention at an individual level. The work of Currie (1969) laid the foundations for analysis of hazard perception, showing that accident involved subjects' speed of response in identifying potential collisions was slower than that of the accident-free. There appeared to be some ability over and above simple reaction time that was related to accident involvement that could be measured using



simulation in a laboratory setting. Later work by Quimby and Watts (1981) compared the performance of candidates on hazard perception both on the roads and in a simulator. This was followed by a large study (Quimby et al 1986) which showed that response time to hazards was correlated with variability in accident involvement.

In the next stage of UK based research, hazard perception tests using video material were developed at Reading University by McKenna and Crick. Their research showed a monotonic improvement in hazard perception scores from novice, through experienced, to expert drivers. They also were able to show that HP scores on their test significantly discriminated between large samples of accident-involved and accident free drivers. (McKenna and Crick 1991; McKenna and Horswill 1999).

The trainability of hazard perception was also demonstrated by McKenna and Crick (1994 and 1997). They showed that 2-3 hours of classroom training using video material could improve the hazard perception performance of novice drivers to the level of experienced ones. Another study of over 200 newly qualified drivers (Mills et al 1998) also showed that scores on HP tests could be improved by training.

There was now evidence that hazard perception was related to experience, it was associated with accident involvement, and it was capable of improvement through training. It thus became a candidate for inclusion in the licensing system. The primary aim was to encourage learner drivers to take training in hazard perception which is best achieved by including a test of hazard perception in the procedure for acquiring a full driving licence.

A theory test was introduced into the British driver licensing system in July 1996. It was at first intended that hazard perception testing should be included, but a decision to proceed with a pencil and paper test precluded this. However, as a computerised test was to be introduced at a later stage, the Department of Transport commissioned the NFER (The National Foundation for Educational Research) to develop a moving image hazard perception test.

The NFER project drew heavily on the work of McKenna and Crick at Reading University, and set scenarios which conformed to their principles. These scenarios were filmed, and tests were devised for trial, together with a scoring system. For each hazardous event, a scoring window was established that opened at the earliest point that an experienced driver might identify a hazard and closed when the hazard was obvious. The scoring window was split into 5 equal time intervals and candidates responses were scored from 0 to 5.

The NFER study produced tests that were reliable in psychometric terms in that they had high levels of reliability and distinguished between inexperienced and experienced drivers. However, they were not able to demonstrate an association with accident liability. In order for it to be feasible to recommend the inclusion of hazard perception within a computerised theory test it was clear that further development work was necessary.

In 1997, TRL were commissioned to produce tests, building on the NFER experience. It was clear that some of the hazard perception items in the NFER tests discriminated better than others. The "best" items were those that required good scanning practices and an ability to anticipate potentially hazardous situations. A "blueprint" was developed to define the type of hazard perception items required, and new scenarios were written and items were filmed using the following criteria for inclusion:

- An actual hazard should develop;
- Anticipation should be possible for an experienced driver or a trained novice;
- Scanning ahead and/or to the side should be necessary;
- The scenario should be clear and uncluttered;

Identifying the hazard should not depend simply on reaction time.

54 suitable clips were obtained and two parallel tests of 27 video clips were devised and trialled with three groups of drivers: learners, novices with less than 2 years experience, and experienced drivers who had been driving for at least 10 years. The scoring method was the same as that developed by NFER. The results of the trial showed that there were enough items that had the necessary psychometric characteristics to allow for the construction of two tests which mirrored what would be required for incorporation into the theory test.

An important part of the process of developing a hazard perception test was to demonstrate that it was practicable to train candidates. A training package was devised and candidates were tested before and after training. 3 hours of training resulted in learner drivers obtaining similar hazard perception scores to those of experienced drivers.

The success of the development of tests and of training led to a commitment to include hazard perception in the theory test following computerisation. The TRL project had demonstrated the types of film clips which were needed, and a large filming programme was set up in order to generate enough material to produce an item bank for trialling.

A dedicated film unit in the Driving Standards Agency produced over 650 hazard perception clips, of which 390 were selected as suitable for trials with 4,000 learners, 4,000 novices, and 4,000 experienced drivers. Those items that discriminated between the three experience levels were used to construct 20 equivalent tests. These were designed to contain a mix of items covering a range of scenes, and were calibrated to ensure that they were each of equivalent difficulty. The final step was to set pass mark levels based on the range of test scores.

The test went live in November 2002 very smoothly. Initially a relatively low pass mark was set in order to ensure that the driving test system was not disrupted by high failure rates, in recognition of the need for training programmes to become established. The pass mark is being progressively raised to the level suggested by the trials that it is reasonable to expect a trained learner to attain. This successful introduction is largely due to the careful research based development which preceded it.

### **Child Pedestrian Training**

A Review of Child Development and the Aims of Road Safety Education (Thomson et al 1996) stressed the need to train children in the range of fundamental psychological skills and deployment strategies which they require for safe road-crossing under a variety of commonplace traffic conditions. Following this Review, a programme of fundamental psychological research was set up to address the needs for research identified in the Review. A summary of the findings of this programme was published in 1998 (Chapman 1998)

Several studies (e.g. Rothengatter, 1981, 1984; Anpofo-Boateng et al 1993) have shown that road safety education programmes focusing on practical training methods are amongst the most successful in improving children's traffic judgements. This approach is based on the sound psychological premise that practical approaches to education are likely to be more successful than knowledge-based approaches, particularly among younger children. This is covered in considerable detail in the Review.

This emphasis on the value of practical methods led to the setting up of the Drumchapel Road Safety Project in 1993. This was aimed at combating the high child pedestrian accident rates in a deprived area of Glasgow. Drumchapel is one of several large peripheral housing schemes developed in Glasgow during the post-war period as a means of alleviating inner-city housing problems. It has a range of economic and social problems and an

exceptionally high child pedestrian casualty rate, roughly six times the national average. (In 1990, the 5-9 year old rate per 1000 population was 2.52 in the UK and 13.68 in Drumchapel.) The project's purpose was to develop key pedestrian skills in children between the ages of 5 and 7 years. The key elements of the approach are:

- The use of practical training at the roadside not lessons in the classroom;
- The training was undertaken by local parent volunteers;
- The volunteers trained children in small groups, not just their own children.

The approach was therefore focused on community action not just local action within the family.

The parent volunteers were trained by project staff to teach three basic skills, all of which had been extensively researched and shown to improve the performance of children:

- How to recognise dangerous locations where crossing should not be attempted, and learning to construct safe routes between locations that would avoid such dangers;
- How to cross safely at parked vehicles where this unavoidable;
- How to cross safely near intersections.

The Department of Environment, Transport and the Regions (as DfT was then called) sponsored an evaluation of the Drumchapel project. A sample of children were tested before and after training in each of the key skills at the roadside. In all three skills, the judgements and behaviour of trained children improved substantially following training, and these benefits were maintained over a two month follow-up period. The judgements of trained children were underpinned by better conceptual understanding, making them better able to deal with novel situations in a relatively flexible manner. Full details are available in the research report (Thomson and Whelan, 1997).

The success of this project led to two further developments. A manual based on the Drumchapel approach was developed for use by local authorities to enable them to set up similar child pedestrian training schemes (Kerbcraft DETR 1998). Furthermore, central Government funding was obtained to enable a national pilot of Kerbcraft based schemes to be set up, funded for three years, and evaluated in order to establish if the benefits identified in Drumchapel could be transferred to other areas.

The pilot involves 100 schemes in England, 9 in Scotland and 22 in Wales. The English schemes were set up in three annual tranches, and the third tranche of schemes has just been selected. The pilot in England and Scotland is being evaluated to assess the impact of the schemes nationally and locally, their management and sustainability, and the effect on children's pedestrian behaviour and on their accident involvement. It will be completed in 2006.

Although the Kerbcraft system is a successful approach, it is demanding in terms of time out of the classroom and the need to train and maintain volunteers. For this reason, Strathclyde University has developed and evaluated a computer based training programme which can be used to supplement Kerbcraft. It provides training in a wider range of scenarios, including designated crossings which are not always easily accessible to schools. This new resource "Crossroads", which is best used after some basic Kerbcraft roadside training, is being provided to Local Authorities as a CD Rom and instruction manual.

## **8. OTHER INITIATIVES**

Hazard perception testing and child pedestrian training are just two examples of major programmes building on research. In addition to policy development across all areas in the

Road Safety Strategy, Road Safety Division in the Department for Transport has successfully bid for central government funding for several major schemes, of which the national child pedestrian training pilot is one.

In 1996, the Gloucester Safer City project began and ran for five years until 2001, as a demonstration project showing how urban safety management techniques could be applied across a whole city to achieve significant casualty savings. Deaths and serious injuries have fallen by 38% compared with 1991-95. An inner city demonstration project has just been launched in Birmingham which will aim to reduce casualties and address the road safety problems associated with deprivation in an inner city area.

Our new target to deal with disadvantage is the subject of the Dealing with Disadvantage Initiative which was launched in Manchester last year. This will grant fund new road safety initiatives in ten areas around Greater Manchester, extending in a second phase to other cities with high levels of deprivation. A key aspect of this initiative is to look beyond the usual road safety measures to wider social policies, setting road safety in its social context.

The other large programme which is underway is Mixed Priority Routes. This is a series of schemes in busy urban high streets where pedestrians and cyclists compete and often conflict with through traffic, buses and delivery vehicles. The aim is to trial measures which a research project indicated could be successful in reducing casualties without severe impacts on mobility.

All these schemes are being closely managed using consultants as necessary, and also monitored and evaluated. The total value of the programme when fully up and running will be about £20m a year.

## **9. CONCLUSIONS**

Road Safety Research has made a major contribution to policy development in Great Britain. The value that is attributed to research is based on many years of a comprehensive high quality research programme. This has been reinforced in the last decade by in-house programme formulation and management, closely linked to the needs of policy makers. In Road Safety Division in the Department for Transport, research is integrated into policy work, whilst still being managed by a dedicated team of experienced researchers.

Policy development is based on a process of understanding the problem, developing new measures, piloting and evaluating them. This careful approach can result in long lead times before a policy is implemented, but this disadvantage is usually outweighed by the benefits of policy measures that are well thought out and backed up by empirical research. Of course, this is not always possible where there is pressure to take action, and steps may have to be taken based on the best available knowledge.

This strongly evidenced based approach is one reason why Great Britain is, with Sweden, the country with the lowest traffic accident rates. There has also, in the last two decades or so, been at least a partial cultural shift in society's attitudes to road safety. This has been a long process, taken forward through publicity, education, and through setting clear targets for casualty reduction. Drink driving is an obvious example of this cultural shift, but we still have a battle to win over speeding, where there are signs of a backlash against law enforcement which we are having to address.

There is also no doubt that the profile of road safety has been raised. It is still true that the thankfully rare rail accident will command headlines on the front page of newspapers due both to its rarity value and to the multiple casualties involved. But the media are showing much greater awareness of road accidents and their toll which is 10 times higher than deaths

on the railways. There have been thoughtful articles in recent years questioning the much higher investment in safety on rail than on road, despite the very high rates of return on road safety schemes.

Child safety is a particular priority for us. Although across all modes our record is relatively good, for child pedestrians our fatal casualty rate has been consistently one of the worst in the EU. We have made considerable progress, but our rate is still more than twice as high as that in the best European countries, and a little above that in Australia. We now have a specific child casualty target and children have top priority in terms of policy.

The key message for road safety policy makers is that there is no quick fix available. Globally, road safety problems differ only in terms of their degree and relative mix. Young drivers, speed, drink drive, law enforcement are issues everywhere. It is very welcome that the World Health Organisation will be devoting World Health Day next April to road safety in recognition of the growing problem on a global scale. Great Britain in common with many other countries will be using World Health Day for a road safety event, possibly linked to the completion of our Road Safety Strategy Review.

Road safety success is hard won through a long process of applying all possible policy measures cost-effectively and through long-term programmes. The ultimate goal is behaviour change, winning hearts and minds, but this is not achievable without assistance and coercion through education, publicity, engineering the road environment to reduce risk, and ultimately enforcement and penalties for those who break the law.

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### **Keywords**

Strategy, Policy, Research, training, testing