

WHAT IF YOUR WORKING ENVIRONMENT WAS JUST METRES AWAY FROM FAST-MOVING TRAFFIC?

A look at the issues surrounding safety at road works and driver behaviour



The behaviour of road users (drivers) is directly or indirectly the cause of most road accidents, including those at road works. Influencing driver behaviour to prevent accidents at road works will improve road worker safety as well as that of the road user.

How big is the problem?

Around 2,200 road accidents where people are injured occur every year at or in road works (source: TRL, 2009). Analysis of accident data has identified a number of common issues in road works accidents:

- ◆ Around a quarter of all road works accidents occur on high-speed roads
- ◆ Nearly three-quarters of the vehicles involved in road works accidents are cars
- ◆ The main age groups of drivers involved in these accidents peaks in the 30 – 39 years age group
- ◆ Failing to look properly and travelling too fast or too close are the most common causation factors in road works accidents
- ◆ Drivers do not appear to associate road works with an increased likelihood of personnel on the carriageway (and thus risk to themselves or others)
- ◆ Drivers do not appear to realise that an impact protection vehicle (IPV) is likely to be slow moving and/or fail to perceive that the IPV is a hazard

The analysis of around 7,000 road works accidents carried out by TRL suggests there are some common themes that could be influenced to improve driver understanding of these hazards at road works. This would have the effect of improving the safety of both road worker and road user.

Introduction

A well-maintained and effective road infrastructure is vital to the prosperity of any industrialised nation. This is very much true of the UK, where during 2006 vehicles travelled 506 billion vehicle kilometres on roads in the UK and transported 167 billion tonne kilometres of freight (Source: Transport Statistics Great Britain, DfT, 2007).

Maintaining the roads is a difficult and dangerous job. Highway authorities responsible for road maintenance (such as the Highways Agency) work hard with their suppliers to deliver a safe working environment for road workers. Unfortunately, their efforts are all too often overturned by the public attitudes to road works and road workers.

Road workers frequently experience verbal abuse, have items thrown at them by passing road users and even in some cases are driven at deliberately. It is also not uncommon for road workers to be involved in accidents where they are struck by vehicles driven by members of the public. Such accidents can and do result in the road worker suffering serious or even fatal injuries.

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Understanding Road Users

What influences driver behaviour?

Changing driver behaviour is difficult as drivers have freedom of choice as to how they behave when driving (known as “self-pacing”). This extends to choice of the speed at which they drive and the risks they take when driving. Roads (and road works) are designed to keep road users safe, provided they follow the rules by obeying speed limits and other signs. If drivers do this, they remain in the “behavioural design envelope” for the road.

Influencing drivers to remain within the behavioural design envelope is key to reducing accidents at road works and requires changing driver attitude to speed choice and risk taking behaviour. This is difficult as speed choice and risk taking is guided by what each individual believes to be “safe” or “risky”. This in turn is based on their own view of how difficult their driving task is compared to their own ability as a driver, and drivers are poor at understanding actual risk while simultaneously over-estimating their driving ability.

What types of driver are there?

When assessing risk, some types of driver are known to take greater risks than others. Drivers can generally be divided into three basic categories: compliers, defiers and manipulators.

Compliers take little risk, generally drive within their actual ability and obey the law most of the time. They have a low risk of accident and can be influenced by “soft” interventions such as offering advice, training and assessment.

Defiers are high risk takers who either do not know there is a risk involved with their behaviour, do not realise the consequences of their actions or simply do not care. They have a high accident risk but are difficult to influence except via enforcement.

Manipulators fall between the two, acting like compliers when there is a risk of being caught but prepared to take the risk of breaking the law if they consider they will get away with it. They respond to perceived risk of enforcement by becoming compliers.

What errors do drivers make?

The type of driver defines the types of errors likely to be made. Although drivers who are happy to deliberately break rules have a high

Road users come in all shapes and sizes. The skill levels, attitudes, behaviours and perceptions of every road user are unique; recognising this is important to influencing them, as there is no single approach that will change the behaviour of all road user types.

accident risk, most drivers will generally try to drive within their perceived capability. However, for all driver types the risk of accidents becomes greater when personal perception of capability is greater than actual capability.

This is also true of driver visual perception, where the judgement of a hazard and how far away it is may be significantly different from what is actually there. Drivers can fail to recognise hazards, either by failing to see hazards which are in view or by failing to recognise a hazard ‘as a hazard’.

When drivers approach road works, they need to be alert and concentrating on the driving task. This maximises the chance that they will see, understand and respond correctly to any hazard. A driver’s ability to act correctly can be affected by design of the driving task (such as poorly positioned signing) or placing other demands on the driver such as making a route choice or reading too many information signs in a short time.

General levels of driver concentration on the driving task are also significantly reduced when drivers are tired, have consumed alcohol or drugs or are talking on a mobile phone (hand-held or hands-free). The influences of alcohol or drugs can also increase the difference between what drivers believe they can do and what they actually can do.

Approaching and driving through road works increases the complexity of the driving task. This is a result of the changes in road layout, increased numbers of temporary signs and potentially reduced distances between vehicles due to reduced road capacity or narrow lanes. In addition, the driver may be distracted by the workforce, their vehicles or the works taking place.

All these factors make the driving task harder and can increase the likelihood of driver error, especially if the driver is driving in a way that is on or close to the limit of his actual capability.

How do drivers perceive road works?

Drivers do not perceive the personal risk of driving through road works as greater



than driving on the normal carriageway, as evidenced by their speed choice and tendency to leave lane changes to the last minute (“running the taper”).

There is no evidence that drivers modify their speed choice based on risk to the road worker without the risk of enforcement and penalty.

Drivers often do not “see” the approach to road works and when the signs are seen they are often poorly understood.

There is no apparent consideration given to the safety of the road worker by drivers approaching or driving through road works.

The behaviour of drivers toward road workers indicates that there is little respect for road works and road workers. At best the works and workers are tolerated, at worst the works are ignored (e.g. use of closed lanes) and workers are abused either verbally or physically.

Changing the attitude of drivers to road works is essential to improve the safety of both road workers and the drivers passing through road work sites.

Potential Approaches



Potential approaches to changing driver behaviour can be divided into “soft” interventions and “hard” interventions.

“Soft” interventions (such as VMS sign messages and publicity campaigns) are better at changing behaviour of complying drivers.

“Hard” interventions (such as average speed enforcement) are better at changing risk-taking behaviour.

Interventions can also be applied locationally with a short term, localised effect or pervasively with a longer term and national effect.

A good example of a pervasive “soft” intervention is the Highways Agency’s

‘Respect’ campaign. Delivered from within the well-known DfT THINK! brand, the ‘Respect’ campaign uses a range of media channels to deliver its message.

By using TV, radio, and print, the Agency intends to raise awareness of the issues and by doing so encourage drivers to alter their behaviour and respect road workers for the work they do.

Posters, radio adverts and broadcast video all highlight the work that road workers do to keep road users safe. The film ‘Respect’ highlights why drivers need to appreciate the consequences their actions could have, while the longer “5 seconds” film focuses on business drivers, and a range of possible outcomes and costs of their actions at road works.

The materials from the ‘Respect’ campaign are available for use from the Highways Agency via their website (<http://www.highways.gov.uk/knowledge/20631.aspx>).

Changing the behaviour of risk-taking drivers tends to require hard interventions, which require the involvement of police or other law enforcement organisations. For complying drivers, soft interventions such as the ‘Respect’ campaign can be used; other interventions that could be applied to the issue of road worker safety and driver behaviour include:

◆ Improving driver skills:

There is a need for further training of professional drivers and specific training of all drivers to raise their awareness of the issues of driving through road works

◆ Better self knowledge

The public are an important partner in improving safety through road works. There is a need for greater awareness of personal skill levels and abilities to encourage better “self pacing” and improved behaviour when driving

◆ Influencing personal behaviour

This can be achieved through a high profile advertising campaign to raise the public profile of road worker safety. Such an approach aims to demonstrate the risk to drivers and road workers from speeding through road works

◆ Improving the task

It is important to ensure that the driving task when approaching and driving



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through road works is made as simple as possible to prevent overloading drivers with information. All those involved in applying the principles contained in the Traffic Signs Manual: Chapter 8 need to review their road works layouts in order to make the driving task as easy possible for an uninformed driver

◆ Manipulate the driving task to make it appear harder

This can be achieved by applying psychological techniques used in traffic calming to road works. This approach will be designed to increase the perceived difficulty of driving through road works while not actually increasing physical risk to road users or road workers

Other specific behaviours that should be targeted in the long term are:

- ◆ Changing the public attitude towards both road works and the work that road workers do
- ◆ Making behaviours that risk the lives of road workers socially unacceptable (such as speeding through road works, entering closed lanes or using the hard shoulder in congested conditions)
- ◆ Demonstrating the consequence to drivers of high-risk behaviours at road works (such as taper running, driving while impaired through drink or drugs or tailgating)

Next Steps

IHT's Health and Safety panel are actively pursuing a number of actions to contribute to the profession's initiatives to make road works a safer environment for those driving through them and in particular for the workforce in their daily working environment.

Influencing IHT members

IHT has access to a large membership of transport professionals and thus can influence their members, members' employees and the transport industry generally. Encouraging the membership to adjust their personal attitude and the attitude of those they can influence will start the process of changing professional attitudes to road works and road worker safety.

Channels to achieve this include advertising or journal articles in Transportation Professional, provision of best practice advice through position papers and/or other publications, circulation of existing or new road worker safety campaigns and establishing a Road Works Safety Charter for members to commit to.

Influencing Government

As an independent and respected organisation, IHT will communicate with the DfT to consider the possibility of changing law, policy or approach to road safety related issues. The issue of road worker safety is of importance to both the DfT and the Highways Agency through the Public Service Agreement targets for improving road safety (Target 5) and reducing congestion on the strategic road network (Target 1). The Driving Standards Agency (DSA) is responsible for setting driving standards in the United Kingdom. The DSA seeks to encourage "safe driving for life" and is committed to assisting DfT with delivery of the PSA targets relating to road transport.

IHT is working with the DSA to promote safe driving through road works by means of existing DSA communications channels to learner or new drivers, including information on road works in both theory and hazard perception tests.

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