

Strategic review of the management of occupational road risk

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Disclaimer

This report has been produced by the Transport Research Laboratory (TRL) and the Centre for Transport Studies at University College London (UCL). The work was funded through a grant from the RoSPA/BNFL Scholarship Scheme.

The order of authorship for the first two authors was determined on the toss of a coin. They contributed equally to the work included in the report.

Contents amendment record

This report has been amended and issued as follows:

Version	Date	Description	Editor	Technical Referee
1	5/2/14	Draft report version 1	SH/NC	GG/HW
2	10/4/14	Draft report version 2	SH/NC	GG/HW
3	8/5/14	Final version	SH/NC	GG/HW
4	12/05/14	Revised final version	SH/NC	GG/HW
5	13/05/14	Revised final version	SH/NC	GG/HW

Executive summary

Background

The reduction of injuries and deaths sustained from work-related driving is a priority for occupational health. It is widely accepted that for most workers driving is one of the riskiest activities undertaken as part of work. In Great Britain (GB) it is estimated that at least a fifth of road injuries are sustained in a collision in which someone was driving for work at the time.

The management of occupational road risk (MORR) is intended as a means of improving work related road safety (WRRS). In GB, from origins in the late 1980s, throughout the 1990s and 2000s, and into the 2010s there has been a plethora of initiatives focused on encouraging the wider uptake of MORR. The ultimate objective of this movement is to see WRRS managed just like any other aspect of safety at work.

The Royal Society for the Prevention of Accidents (RoSPA) commissioned TRL and UCL to conduct this strategic review of MORR. The intention is that the review serves as a record of progress in MORR since the 1990s, and also as a basis for making recommendations for action to help sustain this progress.

What we did

The work undertaken focused on five key areas. First, a short summary of key landmarks in the WRRS field was prepared, and an update of a 2011 review of WRRS interventions was undertaken. Second, the recent GB data sources on work-related road injuries and on changes to the vehicle fleet were examined; the aim of this was to understand whether changes to any of these factors since the 1990s have any implications for our understanding of WRRS. Third, interviews were held with a number of stakeholders with a strategic or in-depth knowledge of MORR; these stakeholders were asked their opinions on opportunities and barriers to improving WRRS, and their perceptions concerning strategic gaps. Fourth, interviews were held with those responsible for managing the safety of small fleets; these individuals were asked about their perception of the issue, their awareness of guidance, their current practice, their perceived control over risk factors, and their perceptions of future initiatives such as the widespread use of in-vehicle monitoring technologies. Fifth, after a short stakeholder event to share early findings from the first four areas of work, conclusions were drawn and recommendations made.

Findings

Consideration of those landmark meetings, committees, reports and initiatives from the WRRS field over the last 15 years leads to the conclusion that while such efforts have been clearly directed at making MORR a central part of business practice, and while there are clearly pockets of what might be called 'good practice' (albeit with inadequate evaluation) WRRS is not 'mainstream' in the way that the management of general Health and Safety is. Recent evaluation literature has shown promise in that there have been some attempts to focus research on those risk factors that the available data suggest as

being most important; however there is still a lack of good quality evaluation of the effectiveness of different approaches to MORR in leading to reductions in work-related crashes. In-car data recorders and monitoring technologies show promise, but remain unproven.

Data analysis showed that in general there is considerable room for improvement in the way in which data on work-related driving risk is collected. There is some uncertainty as to the accuracy of journey purpose information in STATS19, and currently there is no requirement for work-related road injuries to be recorded in RIDDOR. Fixing these issues would be of great benefit in enabling the scale of risk presented by work-related driving to be more closely specified in the future. Data analysis also showed that there have been changes to the vehicle fleet (fewer company cars, more privately-owned vehicles, more vans) and possibly to driving patterns (for example home deliveries) that may be having an impact on the nature and scale of the WRRS problem. More work is needed to address these issues.

The findings from interviews with strategic stakeholders showed that perceived enablers for better provisions of MORR were good data, government leadership, partnership with business and management of risk through the supply chain. Key perceived barriers were the difficulties businesses (especially SME's) experience in monitoring risk and weak political leadership, regulation and enforcement practice. Many of these themes were confirmed in discussion with additional stakeholders at an event held later in the project.

Interviews with those responsible for small fleets revealed similar findings to those seen in other recent projects that have examined MORR practice in detail in applied settings. MORR and the issue of WRRS is clearly lagging behind general health and safety as an issue of pressing importance in the day to day attention of those responsible for its management. Businesses report that they perceive MORR to be important, but the extent of this varies. Awareness of some of the key strategic guidance resources, toolkits and products was low, and usage was even lower. If the rate of use is reflective of small companies as a whole, then it would appear that the current strategy of having WRRS in this country addressed through guidance (rather than strong regulation) has failed to achieve the 'mainstream' status desired. When we examine what is happening 'on the ground', and especially in small fleets such as those involved in the current research, we see no evidence that MORR is being accorded the priority it deserves.

Recommendations

The following recommendations were made from the review, split into the four categories of 'a better understanding of the problem', 'policy and advocacy', 'raising awareness and good practice', and 'monitoring and evaluation':

A better understanding of the problem

- A focus needs to continue to ensure that the default for occupational road risk is that it is embedded strategically at board level as part of the occupational health and safety governance structure of a business.
- Good data are essential to a better understanding of the problem. RIDDOR should include work-related road injuries, and the DfT should do more work to understand how journey purpose data are being used in routinely collected casualty data

- More work should be done to answer the following two questions:
    - Is the risk of a collision by at work drivers higher than or about the same as those driving for non-work purposes? Although a 'Fleet driver effect' for injury collisions has been identified in previous work (Broughton et al., 2003) this question is important to answer using more recent research because of changes in the age profile of working drivers, the vehicles they now use, and other potential changes such as the speeds at which they drive, the controls on drivers hours for certain classes of vehicle, and the mileage they drive in a year
    - Why is the percentage of other road users killed or injured by at work drivers apparently so high?
- DfT needs to lead on convening a working group to enhance the data on work related road safety including multiple data sources such as STATS19, the Labour Force Survey, RIDDOR, local Accident and Emergency statistics, and information from insurers and from the ACPO's National Roads Policing Intelligence Forum (NRPIF). This should include a periodic review of serious and fatal collisions in order to understand the circumstances in which vulnerable road users are injured in collisions with those who drive for work.
- There needs to be a better understanding of risk in terms of the different groups of drivers such as those involved in deliveries by HGVs and light vans, public transport and construction drivers.

Policy and advocacy

- We recommend that the HSC/E considers changing its policy so that employers have to report on the RIDDOR database when someone has been injured on the roads whilst driving for work or when someone driving for work injures a member of the public.
- An indicator for driving for work should be part of a national road safety strategy.
- There should be stronger regulation to create more substantial fines for large fleets that have insufficient management of WRRS.
- The European Transport Safety Council should publish a Road Safety Performance Index (PIN) for work related road safety and this should be supported by PACTS and identified as a theme within its working groups. This will depend on establishing a harmonised dataset across Europe

Raising awareness and embedding good practice

- We recommend that the DfT works with DVSA and businesses to support the development of a new module in the learning to drive syllabus on driving for work (targeting those risk factors that appear to be especially important such as fatigue, time pressure and distraction).
- That there is a national THINK! Campaign to raise awareness about risk factors of driving for work and that the DfT forms a partnership with the insurance industry to co-fund such campaigns, as has been achieved in other countries.

- A revived occupational road safety alliance is formed and supported by DfT and that there are annual conferences to raise awareness supported by business.
- The DfT, in partnership with the insurance industry, should develop a code of practice for managing occupational road risk.
- Through enforcement the police can establish whether a driver is driving as part of work and liaise with their companies to improve the management of risk. This work could be funded from revenue from speed awareness courses.

Monitoring and Evaluation

- Insurance based telematics service providers should work with insurance companies to improve access to and analysis of data on behalf of individuals and smaller fleets to enable them to monitor and evaluate their performance with respect to occupational road risk.
- The research community needs to work with insurers and businesses to develop and apply formative, process and outcome evaluation methods to enhance the evidence base.

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1 Why is the management of occupational road risk an important issue?

1.1 The problem

The management of occupational road risk (MORR)[1] is a key topic in road safety, with broad agreement in the literature that injuries and deaths sustained from work-related driving represent a substantial public health burden, as well as being a priority for occupational health.

The 1987 inter-departmental review of road safety policy Road Safety: The Next Steps (Department of Transport 1987) urged companies to 'take in accident prevention within their management interests'. However it wasn't until the mid-1990s in the UK, that substantial attention was paid to MORR in attempts to bring its treatment in line with general health and safety at work.

The management of this risk is largely the responsibility of organisations, although individuals who drive for work within these organisations and those who are self-employed also have responsibility. A large range of interventions and approaches are offered to organisations both in terms of 'products' from commercial suppliers, and advice and guidance from interested stakeholders such as the Health and Safety Executive (HSE) and Driving for Better Business (DfBB).

Although it seems likely that some progress has been made through the adoption of various organisational approaches in some larger fleets (Lang *et al*., 2009; Murray *et al*., 2012), there is currently very little evidence on the effectiveness of different interventions that are designed to improve WRRS (Grayson & Helman, 2011).

1.2 This review

The Royal Society for the Prevention of Accidents (RoSPA) commissioned TRL and UCL to conduct a comprehensive strategic review of strategy in relation to the management of occupational road risk as a basis for making recommendations for action to help sustain progress made and drive the MORR agenda forward. Future efforts to reduce occupational road risk need to be based on a sound understanding of the most promising approaches, and the needs of businesses.

The aims of this strategic review are therefore to:

- capture the historical context of policy approaches to MORR
- examine statistical information on the size and nature of the problem
- take stock of the current state of MORR from a European perspective and develop a better understanding of the challenges and successes to-date
- take stock of the current implementation of MORR at a local level, particularly in smaller fleets

[1] Throughout this report we use the phrase 'management of occupational road risk (MORR)' to refer to the process of managing road risk. The phrase 'work-related road safety' (WRRS) is used to refer to both the general domain in which MORR is undertaken (an example would be "In the WRRS literature there are many documented case studies…") and the measure that is being targeted for improvement (an example would be "There are many interventions that seek to improve WRRS…").

- identify areas of strength and weakness in MORR approaches through engagement with key stakeholders
- identify recommended actions that will lead to the successful implementation and evaluation of MORR in the future.

To achieve these aims the following tasks were undertaken:

- analysis of data on casualties related to driving for work
- a review of key documents related to policy approaches to MORR
- interviews with key stakeholders in the UK and Europe
- an update of the evidence on the effectiveness of WRRS approaches
- a review of how strategies are implemented in a sample of smaller fleets
- a stakeholder event to develop an action plan.

The remainder of this report is structured in the following way. Section 2 details the background context in which MORR has developed in the UK and elsewhere, the ways in which interventions designed to improve WRRS have been evaluated and outstanding issues which need to be addressed. Section 3 describes the method and findings of an appraisal of the data on vehicle fleet changes and accidents from recent UK national statistics. Section 4 describes the method and findings from interviews with strategic stakeholders in the WRRS field. Section 5 describes the method and findings from interviews with those individuals in businesses with small fleets. Section 6 describes an event that was run to discuss the findings with key stakeholders. Section 7 then describes a set of proposals for how WRRS can be managed in the future, taking into account the findings from the earlier activities in this review.

2 How far have we come?

In this section we firstly review the way in which the WRRS field has evolved in the UK and elsewhere, and we then discuss evidence for effectiveness of WRRS interventions (updating a previous review of this specific topic by Grayson & Helman, 2011). Finally we identify those issues that will be addressed by the current report.

2.1 The evolution of WRRS in the UK

This review follows nearly 20 years of initiatives aimed at improving WRRS, as shown in Table 1.

Table 1: Timeline of initiatives to address the MORR agenda

1996/7	RoSPA Exploratory seminars held at Esso headquarters, Leatherhead and EEF, London involving key players to review issues raised in RoSPA discussion document on MORR
1998	'Stoke Court Declaration' signed by 40 key players. Development of first edition of RoSPA guidance, 'Managing Occupational Road Risk: the RoSPA Guide'.
1999	Input by RoSPA on WRRS to the consultation on DfT's 'Tomorrow's Roads'
2000/1	Establishment of the Work Related Road Safety Task Group and publication of the 'Dykes Report' (www.hse.gov.uk/road/content/traffic1.pdf)
2002	Establishment of the Occupational Road Safety Alliance (ORSA – www.orsa.org.uk)
2003	Publication of HSE/DfT guidance 'Driving at work' INDG 382 (http://www.hse.gov.uk/pubns/indg382.pdf). and 2nd edition of RoSPA MORR guide
2004	House of Commons Work and Pensions Select Committee report on HSC/E supports call for WRRS to be prioritised.
2005	Motorists' Forum Report calls for Government action on WRRS
2007	'Driving for Better Business' launched
2008	Scottish Occupational Road Safety Alliance (ScORSA)
2008	Corporate Manslaughter and Corporate Homicide Act
2009	ETSC PRAISE 1 programme launched
2009	First International Conference on WRRS convened by NIOSH (USA)
2012	RoSPA commissions strategic review of the management of occupational road risk

2.1.1 Early RoSPA activities

Encouraged by the DoT in the 1987 review the Royal Society for the Prevention of Accidents (RoSPA) has since the mid-1990s taken a leading role in the UK in advocating the need to improve work-related road risk. Following a series of seminars in 1996/7, RoSPA circulated a discussion document which fed into guidance which was published in

March 1998. A series of road shows was launched with input from an expert reference group and funding from major national and international businesses. The aim was to raise awareness of WRRS, and its success led to a consensus declaration among a range of employers endorsing RoSPA's efforts to improve WRRS. The outcome of this initiative was the dissemination of Managing 'Managing Occupational Road Risk: the RoSPA Guide' http://www.rospa.com/drivertraining/morr/.

2.1.2 Work-related Road Safety Task Group (WRRSTG)

In 2000 as part of the development of the government's national road safety strategy ('Tomorrow's roads: safer for everyone'), the government and the Health and Safety Commission (HSC) set up an independent Work-related Road Safety Task Group (WRRSTG) to promote a national debate on the issue of employers' management of occupational road risks as part of health and safety management. A key strand of the approach to gain business support was to show the 'business case' for managing risks. Consultation by WRRSTG made 18 recommendations in their report *Reducing at-work road traffic incidents* (WRRSTG, 2001). Among the primary recommendations were the following actions:

- employers should manage risk on the road as part of occupational health and safety
- the Health and Safety Executive (HSE) should prepare guidance for employers and case studies for small firms
- there should be a major campaign to raise awareness over the following 2 years
- there should be revisions to STATS19 and RIDDOR to take better account of road accidents that happen when someone is driving for work[2]
- work should be undertaken to develop effective HSE and Police enforcement liaison
- HSE should pursue further research (into the prevalence, causation, costs and preventability of work-related road crashes)
- there should be a follow up body to WRRSTG
- more resources should be made available for HSE to enable them to take the issue forward
- there should be awareness raising as well as reward for safer performance through reduced insurance premiums; employers needed practical ways to diagnose problems, introduce solutions and monitor impact.

2.1.3 The HSE

The position of HSE with regards to road related injuries is that these are covered by Road Traffic Acts which protect public and worker safety and therefore occupational road risk is not an area for HSE. The Dykes report (Reducing at-work road traffic incidents – WRRSTG, 2001) challenged that position with a set of 18 recommendations for action by HSE, DfT and other stakeholders. The HSE used these recommendations to test and review its policy with a view to assessing whether change was needed. The main concern was that it did not want to be subject to any enforcement or investigative activity relating to road traffic incidents and this is a recurring theme through its

[2] STATS19 data are collected by the police , while RIDDOR –Reporting of Injuries Diseases and Dangerous Occurrences Regulation, is collected by the HSE)

response to the Dykes report. There is a great degree of caution in committing resources to the recommendations but there is recognition that something needed to be done to improve at-work road safety, generally in co-operation with others. However there was acceptance of nine recommendations, acceptance with qualifications of five more and rejection of two.

The recommendations which were accepted were:

- Support the inclusion of journey purpose in STATS19
- HSE and DfT should develop a joint research programme with special interest in determining whether occupational drivers are more at risk than other drivers or pose a greater risk to others. The output from research would then help inform decisions of HSE future involvement
- Employers should include measures to manage at work road safety within their existing health and safety management systems with input from employees
- Employers should ensure that their employees are competent to drive or work on or by roads safely
- HSE should seek to influence management training providers to include at-work road safety risk management issues within management courses which address health and safety
- The police authorities/chief constables should use their powers to pursue employers who fail to meet their responsibilities under road traffic law

The recommendations accepted with qualification were:

- There should be a more rigorous application of existing health and safety at work law to on-the road work activities including driving.

The HSE considered that Road Traffic Law covers this and is enforced by the police. However, the HSE did propose better liaison with the police over Health and Safety concerns to clarify existing arrangements but drew the line at active enforcement of Health and Safety on the road as this would divert their and Local Authority resources from other areas which it saw as being higher priority.

- HSE should lead a public information campaign with DTLR.

HSE considered there was not sufficient information on the problem to target a campaign effectively but was open to consideration of working with other stakeholders.

- HSE and stakeholders should develop generic guidance for employer's and others on how to manage at-work road safety. This would include sector based guidance and advice to small firms and needs of special groups.

This was accepted if undertaken on risk assessment principles but HSE would have preferred to encourage industry to develop its own guidance to assist employers in meeting their responsibilities.

- The next review of RIDDOR should consider how at work road traffic incidents involving fatalities and over 3-day injuries should be reported.

Given these would in the first instance be reported by the police HSE did not want to duplicate other information streams.

- The enforcing authorities led by HSE should develop ways of working to investigate road traffic incidents and to take appropriate enforcement action.

HSE supported making police investigation more effective and helping them recognise elements of management failure. But the HSC rejected any notion of investigation by HSE during a police investigation primarily to avoid duplication of effort.

The two areas which were rejected were:

- That HSE should be given power to object to granting and monitoring licences and to report to Traffic Commissioners malpractice in regard to health and safety matters.

The main objections to this were the lack of expertise of HSE and LAs and the resources required to be part of this regime.

- A standing body should be charged with taking forward the report's recommendations and monitoring their implementation.

The HSE did not believe a standing body was necessary but was happy to maintain dialogue with stakeholders and update Ministers.

Since the Dykes report, the following have been initiated:

- The STATS19 has included journey purpose and is reported on by DfT in its annual Reported Road Casualties Great Britain.
- The Occupational Road Safety Alliance was established as a follow up body to the WRRSTG (although this is no longer in operation).
- The DfT asked the Motorist' Forum to provide advice on how occupational road safety standards could be raised.
- As a result of the Motorist's Forum Report DfT provided three years' funding to raise awareness through the Driving for Better Business (this funding has now finished).

In a progress report to the HSC by the HSE (HSC/03/99, July 2003) the key achievements listed were:

- Definitive statement clarifying employers' duties. This has been incorporated in Driving at Work (2003).
- Intelligence and data - this continues to be difficult. This statement preceded the DfT review of STATS19 which did agree to include journey purpose but the review of RIDDOR (2005) rejected inclusion of road traffic injuries.
- Investigation and enforcement: The HSE worked with the Metropolitan Police Service (MPS) to examine developing a checklist the police can use to identify management failings and to develop guidelines on when the HSE should be consulted on road traffic incidents. In addition the HSE were working to update internal guidance for HSE inspectors.

- Research programme: The DfT funded a project to identify the relationship between safety cultures of organisations, their accident liability and attitudes of drivers (Bomel, 2004). The output was expected to help inform HSC/E on judgements about deployment of effort.
- Guidance and Publicity resulted in the Driving at Work report.

The HSE produced in 2003 Driving at Work: managing work related road safety in conjunction with DfT. At the back of this document is a statement which clarifies the HSE position:

*"**Employers' responsibility for work-related road safety and HSC's enforcement policy**. Health and safety law requires employers and the self-employed to ensure so far as reasonably practicable the health, safety and welfare of all employees and to safeguard others who may be put at risk from their work activities. This includes when they are undertaking work-related driving activities. HSC's enforcement policy statement recognises the need to prioritise investigation and enforcement action. Current priorities, as set out in HSC's Strategic plan, do not include work-related road safety. The police will, in most cases, continue to take the lead on the investigation of road traffic incidents on the public highway. Enforcement action by HSE will usually be confined to incidents where the police identify that serious management failures have been a significant contributory factor in the incident".*

The report authors consider that rejection of a standing committee has had the consequence of several stakeholders acting to improve work related road safety but little or no overall coordination of the actions. The result is that these interventions have not been assessed properly and the lack of a holistic approach has hampered the integration necessary which leads to the whole being greater than the sum of the parts.

2.1.4 Occupational Road Safety Alliance (ORSA)

In 2002 the 'Occupational Road Safety Alliance' (ORSA) was established by RoSPA as a follow-up body to the WRRSTG. ORSA included road safety bodies, motoring organisations, employer organisations, trades unions, professional institutions, insurers, local authorities, the driver training sector, the fleet sector, and major corporates. The purpose of the group was to promote and support the management of occupational road risk. The focus of ORSA was to develop an awareness-raising programme of work that demonstrated a common public commitment to a set of shared aims and provide a platform for:

- a co-ordinated approach to awareness raising and information
- sharing perspectives and plans
- organising conferences and seminars
- promoting technical co-operation and development.

2.1.5 Scottish Occupational Road Safety Alliance (ScORSA)

In March 2007 the Scottish Government published the 'Scottish Action Plan on Health and Safety'. This action plan sought to complement the work of The Partnership on Health and Safety in Scotland (PHASS) and other collaborative work in Scotland. The plan identified future collaborative actions in pursuit of Scotland's common goal: to help

reduce preventable fatalities, injuries and work-related ill health to employees and members of the public arising from work activity.

Element 10: Occupational Road Risk involved RoSPA and the Scottish Centre for Healthy Working Lives (SCHWL) working in partnership to better support employers in addressing the management of occupational road risk, and raised its profile as a major occupational health issue. It was estimated that approximately 100 people die each year on Scotland's roads whilst going about their work, a figure that is roughly three times greater than quoted figures for accidental deaths occurring in the workplace.

This resulted in the creation of a MORR community within Scotland of approximately 600 organisations; through consultation with key stakeholders the Scottish Occupational Road safety Alliance (ScORSA) was formed in 2008. ScORSA (www.scorsa.org.uk) provides free information and support to assist small and medium sized businesses to raise awareness of managing occupational road risk and provides an opportunity for employers to influence the toll of fatalities on Scotland's Roads.

The Scottish Government's Road Safety Framework to 2020, published in 2009, incorporates people who drive for work. This work stream is delivered by RoSPA in Scotland working with and through ScORSA.

2.1.6 Motorists' Forum report

The Motorists Forum was a policy advisory group representing road users and key stakeholders from the roads and motoring sector. The remit of the Forum was to contribute to government thinking on priorities and performance of roads. The Forum included representatives from bodies like RAC, AA, ACPO, ABI and PACTS and representatives from the DfT

In 2005 the Motorists' Forum was asked by the Department for Transport (DfT) to look at the issue of WRRS and to provide advice on how companies and other organisations could be encouraged and supported to raise their road safety standards. Committees were established involving senior people from the Forum including the CBI, Institute of Advanced Motorists, the Parliamentary Advisory Council for Transport Safety (PACTS), RoSPA, and the Association of British Insurers (ABI), with HSE and DfT acting as advisors to the group.

Once again, the key findings were that businesses need to be shown that they could make cost savings by managing occupational road risk and that there was already a range of resources giving advice.

The report advocated that employers should be:

- identifying the risks associated with the typical journeys performed by employees
- disseminating and promoting a policy to employees that addresses these risks
- giving employees relevant training to make them aware of risks and give them the skills to manage them
- monitoring crashes (and near-misses) and using this information to improve training
- consulting and involving employees in this process.

The report proposed that government should support an outreach project whereby good practice 'champions' could support other companies who were in the process of developing their strategies for improving WRRS. In addition it was recommended that

work-related road injuries should be included within RIDDOR to signal that they should be managed as part of occupational safety and health risks. Finally, the report suggested that evaluation research should be undertaken to show how well DFT/HSE advice was changing MORR practice.

2.1.7 Driving for Better Business (DfBB)

As a response to the Motorist's Forum report, in 2007 the Department for Transport provided three years of funding to run an outreach campaign which would use advocates or champions to promote the business benefits of managing WRRS effectively. The aim of this campaign, known as Driving for Better Business (DfBB) was to "raise awareness of the importance of work-related road safety in the business community and public sector by using advocates drawn from these communities to promote the business benefits of managing these risks effectively." (see http://www.drivingforbetterbusiness.com/about/default.aspx).

From the outset, the DfBB campaign has focused not only on highlighting the safety benefits that arise from good MORR, but also on making the 'business case'. For example a short paper on the DfBB website by Murray (2008) suggests that there are societal factors (for example corporate social responsibility), business factors (for example improved customer service due to reduced downtime), legal factors (for example compliance with relevant legislation) and cost factors (for example repair and injury-related costs) that together show that proactive steps to improve WRRS make sound business sense. It is hard to argue against this position, although the actual magnitude of the benefits for any given business remain uncertain as the authors are not aware of any formal analysis of the evidence base on this issue.

2.1.8 2007 Corporate Manslaughter and Corporate Homicide Act

In 2007 the legislative framework in the UK emphasised the importance of the management of occupational risk through the introduction of the 2007 Corporate Manslaughter and Corporate Homicide Act which means that public or private sector organisations can be prosecuted for corporate manslaughter, where senior management is seen to have been grossly negligent towards the safety of its employees. Prior to this prosecutions could only be directed at directors, board members or other individuals. It was however challenging to identify a single individual within an organisation deemed to be the "guilty mind", meaning convictions were rare. The new Act did not remove the existing legislation and now an individual or an organisation can be prosecuted for corporate manslaughter.

2.1.9 PRAISE

In 2009, the European Transport Safety Council (http://www.etsc.eu/home.php) ran a project known as Preventing Road Injuries for the Safety of Employees (PRAISE) (http://www.etsc.eu/PRAISE.php). This was a three year engagement project with private and public businesses which addressed all safety aspects of driving 'at' work and driving 'to' work. Its aim was to "praise" best practices in order to help employers secure high road safety standards for their employees.

The programme examined the evidence, and promoted more effective dissemination of good practice and case studies. A series of events and seminars were run in different

member states (including one in the UK) and networks were created to offer advice and support.

The project produced materials including dissemination of its reports to over 3000 contacts. One of the main outputs was a 'handbook' http://www.etsc.eu/documents/praise/PRAISE_Handbook.pdf covering:

- Work-related Road Safety Management Programmes
- In-vehicle Safety Equipment
- From Risk Assessment to Training
- Fitness to Drive
- Safer Commuting to Work
- Minimising In-Vehicle Distraction
- Road Safety at Work Zones
- Fatigue: EU Social Rules and HGV Drivers
- Driving for Work; Managing Speed.

PRAISE is going to be followed by POWER (Protecting Our Workers on European Roads) which aims to disseminate knowledge on six areas:

- Light vehicles
- New partners
- Buses, taxis, SMEs
- Management, engagement, procurement
- Promoting the adoption of the ISO Standard 39001
- Case studies and country seminars.

2.1.10 First international conference on road safety at work

The U.S. National Institute for Occupational Safety and Health (NIOSH) set up the first International Conference on Road Safety at Work on February 16-18, 2009, in Washington D.C. The conference was sponsored by the World Health Organization, Pan American Health Organization, International Labour Organization, U.S. Department of State, and National Safety Council.

The International Conference on Road Safety at Work provided a forum for business, employees, policy makers, and the research community to discuss strategies to prevent road traffic crashes in the workplace. The conferences addressed topics such as collision investigation and analysis, benchmarking, strategies to protect drivers in emerging markets, employee perspectives on occupational road safety, corporate social responsibility, and the role of technology in monitoring driver performance and efficacy.

2.2 Other relevant initiatives and literature

2.2.1 TRL WRRS research

A number of TRL reports have been concerned with WRRS throughout the 2000s, building on earlier work from Lynn and Lockwood (1998) and Downs, Keigan, Maycock and Grayson (1999). These include Broughton *et al.* (2003) who conducted a multivariate analysis of risk factors for work-related driving, and Lang & Rehm (2006) who examined the rising prevalence of van use. Lang *et al*. (2009) developed a WRRS

CD-ROM resource and evaluated its use. In addition, work has looked at the WRRS literature in terms of evidence for effectiveness (Grayson & Helman, 2011; Helman & Grayson, 2011) and in terms of current opinions and practice of stakeholders and businesses (Helman *et al*., 2012; Helman *et al*., 2013).

This programme of work is instructive for the current review as it provides context for an assessment of progress in the WRRS field since the mid-1990s. In addition, data gathered in the current project on fleet composition and from small businesses will be compared with data from these previous pieces of work. Therefore we include a brief description of the programme here.

2.2.1.1 Work-related road accidents – analysis of risk factors

Broughton *et al.* (2003) undertook a multivariate analysis of a number of potential risk factors for work-related driving injury accidents in the UK, and identified fatigue, time pressure and in-car distractions such as mobile phones as significantly increasing the risk of these accidents.

2.2.1.2 Literature review on van use in the UK

Lang and Rehm (2006) undertook a literature review of van use to examine current and future trends in the van market, usage patterns, and van involvement in road accident injuries. The review identified that there were around 3 million vans registered in the UK at the time, with 57.5% of these being company owned. The work also identified an overrepresentation of vans in fatal accidents, with drivers of other vehicles having a higher casualty rate. Furthermore they identified that future increases in van traffic were likely due to significant growth in the home shipping and internet connectivity.

2.2.1.3 Development and evaluation of the Work-Related Road Safety CD-ROM

Lang *et al*. (2009) developed and evaluated a comprehensive guide on WRRS for managers in organisations with fleets. By examining practice before and after the implementation of the CD-ROM tool, Lang *et al*. were able to show that before using the tool the majority of businesses simply lacked any management of key risks. Interestingly it was found that at baseline, management within small/medium organisations was better than in large organisations.

Some improvements were observed over the 12 months of the study after using the CD-ROM tool, such as additions to rules and procedures, and manager knowledge of risk factors. It was not possible to show the extent to which this was definitely due to the CD-ROM tool as the study did not include a control group of businesses that were not exposed to this resource, and the businesses who did volunteer to take part were deemed likely to be those who were at the better end of MORR practice.

Some interesting data were found, however, in terms of the perceived facilitators of and barriers to implementing changes to WRRS management. Facilitators included senior management endorsement and strong duty of care, but also demonstrable financial benefits, legislation requirements, and occurrence of serious or fatal incidents. Barriers included personnel changes, lack of time and resources, and lack of a dedicated health and safety representative.

2.2.1.4 IOSH systematic review

Grayson and Helman (2011) provided a systematic review of the effectiveness of different types of WRRS intervention, and concluded that there was very little good evidence of effectiveness in the literature, and that most studies that claimed positive results had used relatively weak case-study designs.

The review of effectiveness itself is discussed and updated in Section 2.3. As part of the project (reported in Helman & Grayson, 2011) the authors also spoke to stakeholders and researchers in the WRRS field about these findings. Five key points emerged from feedback by stakeholders:

- there was general agreement with the conclusion that there is very little evidence in the literature as to what works, and what doesn't work, in managing occupational road risk
- there was general agreement that the evidence base is weak methodologically (although several stakeholders did point out that good quality case studies can be useful)
- a number of stakeholders agreed that methodologically-sound evaluation designs would be desirable in the WRRS field
- at the same time, it was acknowledged that properly-designed evaluation was difficult to 'sell' to businesses, who tend instead to want 'proven solutions'
- the importance of strong leadership and senior management buy-in was stressed by almost all stakeholders.

The authors offered a number of recommendations on the basis of this stakeholder engagement, and on the basis of the review carried out by Grayson and Helman (2011) as part of the same project. These were:

- more robust evaluation should be encouraged in WRRS, with designs that can test hypotheses formally
- greater engagement with organisations to convince them of the need for better evaluation
- WRRS can be improved through a reduction in road use, thus reducing exposure to the risk of driving for work
- 'Best practice' should simply be seen as 'normal practice' given the lack of evidence that it is in any way 'best'
- in-vehicle data recorder (IVDR) data and better outcome measures in general should be encouraged as part of evaluations.

2.2.1.5 MPS review

Helman *et al*. (2012) published a report for the Metropolitan Police Service (MPS) which involved consultation with key stakeholders around the needs and requirements for a national standard for MORR.

The broad conclusions from this report were that any national standard should be simple to apply, mandatory, address business and safety cases and contain guidance on the management processes to be put in place to identify and address risks. Specific recommendations from end-users and strategic stakeholders on the standard included:

- it should contain guidance on the importance of gaining senior management buy-in to managing work-related road risk
- it should require employers to check drivers' licences

- it should ensure vehicles are maintained
- it should ensure that journeys are planned with realistic journey times in mind, and avoiding journeys by car where possible
- it should include a requirement to collect data to monitor performance (including the investigation of incidents).

The report also concluded that there should be an evidence-based approach to intervention measures, and that on the basis of current evidence (see Grayson & Helman, 2011) the only measures that are worthy of inclusion in a standard are those that seek to reduce exposure to known risk factors including:

- driving at all
- driving during the highest risk periods related to sleepiness (broadly, 2-6am, and 2-4pm)
- driving while using in-car devices that are distracting (e.g. mobile phones)
- driving while under time pressure (which may lead to increased speed)
- driving in specific known high-risk scenarios for individual business sectors (for example the avoidance of interactions between large goods vehicles and cyclists at junctions in large cities such as London).

Helman *et al*. (2012) argued that a national standard incorporating these aspects of risk management could be similar in presentation to that of the Transport for London (TfL) Fleet Operator Recognition Scheme (FORS). An alternative proposal was that ISO 39001 (see Section 2.2.2) could provide guidance on the management processes that are required, while a separate document (possibly an Approved Code of Practice published by the HSE) could provide guidance on practical interventions.

The report also identified the police as having the respect and credibility to take a leading role in enforcement, advocacy and by making sure that information on traffic offences committed while driving for work became an important metric in businesses' risk management systems.

2.2.1.6 Construction Logistics and Cyclist Safety

A recent project for Transport for London (Delmonte *et al*., 2013; Helman *et al*., 2013) is timely in that it provides an example of how a specific business sector (Construction in London) with a known and specific set of WRRS challenges (high rate of fatal crashes involving cyclists in London) can exhibit failures similar to those shown to exist in the wider WRRS field (see e.g. Lang *et al*., 2009).

The work involved a number of tasks, including some specific to construction vehicles and driving. Of relevance here were the interviews carried out with stakeholders throughout the construction supply chain in London, relating to several building projects. The interviews revealed that MORR lags far behind the management of wider Health and Safety, with no clear ownership of road risk throughout the supply chain. The authors concluded that a number of changes were required to address WRRS in this specific business sector, all of which mimicked changes required across the wider WRRS field. These included the recommendation that RIDDOR should be extended to include work-related driving injuries, that awareness raising was required, that construction project clients should take ownership of WRRS and push this down through the supply chain, and that more research was required to understand some of the specific causes of WRRS collisions. It is noteworthy how similar this list is to that from the WRRSTG report of 2001 (albeit with a more specific focus).

2.2.2 ISO 39001

Employers' duty of care and road safety compliance are also legal necessities under EU Directive 89/391/EEC. The new ISO 39001 for road traffic safety management was published in November 2012. The directive identifies the need for organisations to:

- identify their role in road traffic systems
- identify processes and associated activities that can have an impact on road traffic safety
- determine the sequence and interaction these processes have on activities and functions.

In other words, this standard suggests that organisations take a systems approach to managing risk whereby the driver is viewed as part of complex system, where processes are put in place to manage risk, performance is reviewed, and changes made to improve safety

2.3 Evidence of effectiveness

2.3.1 Background

Grayson and Helman (2011) reviewed the evidence for the effectiveness of interventions in WRRS in what was probably the most comprehensive review of the preceding decade. The aim of this section is to update that review in the light of any important developments in the intervening period. The main conclusion of the 2011 review was that almost no high quality evaluation has been carried out in this area since the seminal work in Sweden of Gregersen, Brehmer and Morén (1996); this finding has met with broad agreement from the WRRS community. There has been general acceptance that more needs to be done to understand those components of different approaches to MORR that are most promising in terms of the positive impact they are likely to have on the safety of those who drive for work.

While the review went to some length to identify any 'grey' literature, in practice it was found that most of the relevant information came from a fairly small number of academic journals. This update therefore focused largely, but not exclusively, on these sources. Accordingly, all titles of published papers during the years 2011 to 2013 were assessed for relevance to WRRS interventions in the following publications:

- *Accident Analysis and Prevention*
- *Ergonomics*
- *Journal of Safety Research*
- *Safety Science*
- *Transportation Research Part F.*

2.3.2 Results

Some 2,500 titles were examined, of which 19 were deemed to be relevant to the present discussion, together with one additional paper from conference proceedings.

2.3.2.1 Positive results

Grayson and Helman (2011) drew attention to the fact that WRRS research had not tended to follow the traditional road safety practice of accident analysis, identification of

risk factors and focused intervention measures, despite the fact that the key risk factors (fatigue, time pressure, distraction) were well established (see for example Broughton *et al*., 2003). The recent literature is encouraging in this respect in that a good proportion of it is concerned with empirical studies of known risk factors. For example, Coeugnet *et al*. (2013a, 2013b) reported on investigations of the effects of time pressure on drivers, while De Melia and Keckland (2013) and Karimi *et al*. (2013) examined the effects of sleep problems in occupational settings. In a broader context, Rowden *et al*. (2011) and Chen and Kao (2013) reported on studies of driver stress; both studies used self-reported behaviour as elicited by the Driver Behaviour Questionnaire (DBQ) as a dependent variable.

An interesting paper is that by Tseng (2013), who examined the factors affecting speeding offences among taxi drivers in Taiwan. It is of interest because little attention has been paid to the issue of offending in the WRRS literature (see also Helman *et al*., 2012). While there are numerous references to violations, often as surrogate measures for crash involvement, it should be borne in mind that the term 'violations' in instruments such as the Driver Behaviour Questionnaire cover both formal (offences) and informal (unsocial) behaviours. This lack of attention given to formal offending in the WRRS literature is perhaps surprising, given that the link between 'real world' violations and crashes has been known for over half a century (Peck, McBride & Coppin, 1971), whereas the predictive value of self-reported violations from the DBQ is still a matter of intense debate (see af Wåhlberg & de Winter, 2012).

A further encouraging paper is by Walters *et al*. (2013), who carried out an accident analysis of occupational transportation fatalities. The stated aim of the project was to 'understand contributing factors and recommend evidence-based guidelines for intervention'. This empirical approach to WRRS problems is at variance with much of the contemporary Australian literature, as exemplified by Newnam and Watson (2011). These authors distinguish between 'data-driven' and 'theory-led' approaches, arguing that data-driven research cannot provide 'the theoretical foundation for establishing the development and improvement of interventions designed to reduce death and injury'. A theoretical basis for interventions is clearly desirable, but from the perspective of understanding risk factors and effectiveness, we would argue that data still need to be placed at the centre of the WRRS field.

2.3.2.2 Less positive results

The key risk factors in WRRS – fatigue, time pressure and distraction – have been established through sound empirical research (e.g. Broughton *et al*., 2003). At first sight, efforts to incorporate some of these factors into established research tools would seem a desirable thing. For example, Newnam and Von Schuckmann (2012) set out to develop and test an 'Occupational DBQ' that used a 'relevant theoretical model to assess the impact of the broader workplace context on driver behaviour'. In a similar vein, Wishart *et al*. (2012) incorporated both occupational and DBQ variables in their work to develop a 'fleet risk assessment tool'. However, the objectives of these two sets of authors were somewhat different. Newnam and Von Schuckmann wished to develop a more reliable self-report measure to assess the effects of workplace interventions on behaviour, while Wishart *et al*. had the more ambitious aim of developing a tool to predict the crash liability of individual drivers in a work setting. Both objectives rely on demonstrating a sound predictive relationship between self-report questionnaire

measures and crash involvement. The recent debate in Europe (Wåhlberg and de Winter, 2012) shows clearly that the matter is far from resolved.

Organisational approaches to WRRS continue to appear in the literature. Fugas *et al*. (2012) looked at the relation between safety climate and safe behaviour, but used self-reported behaviour as their dependent variable. Öz *et al*. (2013) carried out a study on the effect of safety climate on professional drivers; again the dependent variables were self-report measures, including the DBQ. Newnam *et al*. (2012) focused on supervisory safety practices and how the exchange of safety information influenced safe driving behaviour. A significant association was found between the quality of the exchange and safe driving, but once again a self-report measure was utilised, this time in the form of a specially created 'occupational driver behaviour' scale.

Three papers dealt explicitly with evaluation issues. Beanland *et al*. (2013) reviewed the efficacy of pre- and post-licence driver training, of which the latter is relevant to this discussion. They conclude that there is no evidence that traditional post-licence driver training programmes can reduce crash risk, but urge caution in accepting this finding, given the methodological flaws in many earlier studies. It should be noted however that a decade ago Ker *et al*. (2003) conducted a Cochrane review of randomised control studies of post-licence training and concluded that they provided no evidence of effectiveness in preventing crashes.

The Grayson and Helman (2011) review advocated a return to 'classical' evaluation, but the recent literature shows no sign of this, in fact quite the opposite. For example, Lewis and Newnam (2011) describe a 'qualitative investigation' to assess the effects of an intervention to improve driving safety in a community setting. The sample was very small, and the dependent measures were self-report measures of speeding behaviour and of 'insight into on-road behaviour'. The third paper dealing with evaluation was by Pedersen *et al*. (2012), and had the intriguing title of 'Realistic evaluation as a new way to design and evaluate occupational safety interventions'. It argues the need for more qualitative input to evaluation in order to overcome the 'shortcomings of the Cochrane approach'. Far from being a new way, the paper in effect reiterates the process/product distinction that was being debated in the road safety field more than 30 years ago when evaluation was one of the central issues in safety research.

2.3.3 Conclusions

At one stage of their review, Grayson and Helman referred to the WRRS evaluation scene as being a depressing one. Little has happened to change that in recent times. While there is some ground for optimism in the increase in the number of reports that focus explicitly on targeting known risk factors, it is more than offset in the recent literature by the continuing advocacy of theory over data (Newnam & Watson, 2011), by papers that describe the Cochrane approach as inadequate (Pedersen *et al*., 2012), or hold that the usefulness of crash rates as an outcome measure is questionable (Beanland *et al*., 2013). Also discouraging is the prevalence of self-report data, which although undoubtedly useful as safety indicators (e.g. de Winter & Dodou, 2010) were never designed as direct proxies for accidents, and cannot always be assumed to be good indicators of the behaviours to which they refer.

Only one paper in the last three years stands out as making a serious contribution to the evaluation of WRRS measures. This is the review of in-vehicle recorders by Horrey *et al*. (2012), which provides an excellent state of the art picture, describes what is known,

identifies gaps in knowledge, and suggests areas for future research. It is difficult to disagree with their enthusiastic conclusion that 'new technologies can offer tremendous benefits in terms of promoting safer on-road behaviours'.

If there is one lesson to be learned from this brief look at the recent literature, it is that boxes in vehicles offer a far better prospect than do ticks in boxes.

2.4 Outstanding issues

When the WRRS field is examined in terms of its history, and its literature and evidence base, it is tempting to be pessimistic. In a little over 15 years, a series of meetings, committees, reports and initiatives have all appeared to be starting from the standpoint of 'let's make MORR a central part of business practice'. While there are clearly pockets of what might be called 'good practice' in MORR (albeit with inadequate evaluation, see Grayson & Helman, 2011), and abundant provision of services and products to assist companies with the topic, it is not really clear that things have moved forward a great deal.

Recent reviews and projects that have examined individual industries or topics have reached the conclusion that WRRS is not 'mainstream' in the way that general H&S is (Helman *et al*., 2013).

The remainder of this report attempts to approach the issue of why this might be from three perspectives. First, we examine what the data tell us about the problem, and examine changes that might need to be taken into account in any renewed formulation of a strategy to tackle WRRS. Then we speak with those responsible for the strategic guidance of the WRRS field. Then we talk to small fleets (small fleets were the focus of this study as it was felt that enough was known about larger fleets from previous work – for example the DfBB 'champions' programme, and Helman *et al.* (2012).

3 What do the data tell us?

3.1 Method

Progress in the area of WRRS is hampered not only by the lack of sufficiently robust studies of effectiveness (see Section 2.2.1.4) but also by uncertainty as to the suitability of the available data to enable an estimate to be made of the size and nature of the WRRS problem. One of the Dykes report's recommendations was to that the STATS19 report form should be amended to include questions of journey purpose. This has been implemented but no studies have been undertaken to assess its reliability. Also recommended was that the HSC/E should consider how at-work road traffic incidents involving fatalities, over 3–day injuries should be reported in RIDDOR. This has not been implemented although questions about road injuries have been inserted in to the Labour Force Survey. This section discusses what data are available to help us describe the extent of the at-work road safety problem and how changes to the vehicle fleet, both privately and company owned, might be influencing the number and type of collisions and injured parties. Knowledge of these factors will help in targeting MORR at sectors where the need is greatest.

3.2 Findings

3.2.1 Changes to the vehicle fleet

The changes in company car use and heavy goods vehicle fleet composition could be important factors in understanding changes in numbers, trends and types of casualties in road traffic collisions involving drivers who are driving for work. This section describes some of those changes as a precursor to looking at the casualty numbers over time.

3.2.1.1 Company cars

Company cars were first introduced to individuals in the 1970s as way of increasing benefits to circumvent the wage freeze and various changes in government taxation policy have had dramatic effects on the numbers of such vehicles registered. A full description can be found in Le Vine and Jones (2012), but we provide a summary here.

In the late 1980s to early 1990s there was a scale charge (taxable amount individuals paid for the benefit of a company car) which, among other things, depended on how much the car was driven, with the taxable amount for all miles driven halving at 18,000 company miles a year, thus incentivising drivers to exceed this mileage. In addition there was a provision for employers to pay for all fuel used both for business and private use. This benefit was also taxed but at a fixed rate, therefore giving no incentive to drive fewer miles. Over time these incentives were reduced, starting with the fuel allowance, then a reduction in the 18,000+ miles business mileage.

From 2002/03 the tax rates started to reflect more closely the emissions-band of the cars and not their size, age, or value. In addition the tax incentive for reaching a specified mileage was scrapped. These tax changes had a profound effect on the numbers of people claiming company car benefit. The biggest change was seen amongst the drivers of company cars who received free fuel. There was a 70% reduction between 1995/96 and 2009/10 in people choosing to take the free fuel, presumably as the tax

then payable on free fuel outweighed the benefit of having the free fuel. In contrast, presumably as a result of the whole package of tax changes, the number of company car drivers who had never received free fuel dropped by 16% over the same period.

These changes have led to a downward shift in the number of miles driven by company car drivers for commuting and business. Even so, in 2008 company cars were, on average, driven twice the distance (19760 miles) of privately owned cars (8130 miles) (NTS2008 Table 7.1). On average a company car driver drove 7,670 miles on business, 6,590 for commuting with a further 5,490 miles of private motoring, compared with 680 business miles, 2,440 commuting miles and 5,010 private miles for those owning their own vehicles.

In 2008 cars registered to companies comprised 8.7% of all those registered (2.44 million cars). By 2012 this had fallen to 8.3% or 2.38 million cars) (Table VEH0202 DVLA/DfT 2013). Of these over 85% were registered to fleets, which are defined as those companies having 25 or more vehicles. Company car ownership per person fell by 20% between 1995/7 and 2005/7 from 29 cars/1000 people to 23 cars per1000 people (Le Vine and Jones, 2012).

One of the effects of the changes in taxation was for employees to forgo the company car in exchange for an increase in salary with which they could purchase and run their own car for use on company business and be reimbursed for these miles at the prevailing rate (the mileage allowance payments which are not liable for tax were 45 pence per mile for the first 10,000 miles and 25p per mile thereafter for cars in 2011/12 tax year) (www.hmrc.gov.uk/rate/travel.htm). However, lump sum and mileage reimbursement rates may be significantly higher than the costs incurred by drivers, and can have the perverse effect incentivising unnecessary travel (Energy Saving Trust, 2012).

Cars owned by private individuals but used for work purposes are known as the grey fleet and are common in the public sector, where it is estimated that they account for 57% of the estimated 1.4 billion miles/year total public sector road mileage. As an example, the NHS alone is estimated to have 43,000 leased cars and 200,000 grey fleet cars, and accounts for the largest proportion of the public sector mileage. An average PCT (Primary Care Trust) had about 450 grey cars, each averaging just over 7,000 business miles a year (Knowles Associates www.greyfleet.com).

It is estimated that there are 4 million grey fleet cars (Energy Saving Trust, 2012), which is about three times more than the number of cars registered to companies. One consequence of this is that cars in the grey fleet are on average about 7 years old whilst company cars are, on average, less than 2 years old.

In addition to company cars driven by individuals, there are fleet cars, vans and HGVs registered to rental companies. For example the top 20 rental companies in 2008 had between them 201,500 cars and 164,600 vans under 3.5 tonnes (www.fleetnews.co.uk/2008./3/28/the-fleet-news-rental-20/27457/).

3.2.1.2 Light goods vehicles (four wheeled vans <3.5 tonnes)

These are light vans used for carrying goods. They have four wheels and have a gross weight under 3.5 tonnes. Since 1994 there has been a year on year increase in the number of LGVs licensed for use with 2.13m in 1994 rising to 3.28m in 2012 which corresponds to an increase from 8.4% to 9.5% of all licensed vehicles in the UK.

With the increase in these licensed vehicles has come an increase in mileage, with this class driving 41.4 billion vehicle miles in 2011 (compared with 240.7 billion for cars). LGV traffic has become influential in traffic growth with an increase of 24.6% over the period 2001 to 2011 and the DfT suggests this may be the result of a change in shopping habits toward more internet and home based delivery (Lang & Rehm, 2006; DfT, 2012).

3.2.1.3 Heavy goods vehicles (>3.5 tonnes)

In general, HGV numbers have decreased in the period of increase for cars and LGVs. There are several factors that seem likely to account for this trend. One is the licensing data shows that HGVs are now heavier than they were before (an average of 22.4 tonnes in 2001 and 27.4 tonnes in 2011), and the other is that heavier vehicles are used for transporting goods relating to retail, construction and industry, all of which have shown an economic downturn. The peak for HGVs was in 2007 when 510,000 were registered (and driving 18.2 billion vehicle miles); this has fallen to 461,000 by 2012 (15.9 billion vehicle miles).

3.2.1.4 Why does this matter?

The changes in fleets over the period matter because the number, miles driven and composition of total traffic has changed and this may be having an effect on the distribution of casualties and their severity of injury, either of those in working vehicles or those being hit by working vehicles.

In the 2009/10 tax year 970,000 UK tax payers paid tax for use of a company car compared with 1.65 million in 1995/6 (Le Vine and Jones, 2012). It was estimated by TRL in 1999 that not only were company car drivers the largest group of working drivers but even when mileage is taken into account company car drivers had an increased crash likelihood of between 30 and 50% compared with private motorists (Downs *et al.,* 1999). If it can be assumed that there still is the same elevated crash likelihood for this group the contribution to the casualty total by company car drivers will have reduced in line with their number. In particular men aged between 20 and 60 years have reduced their car use, and for those between 30 and 60 years the majority of this reduction stems from the reduction in company car mileage, especially amongst high income groups (Le Vine & Jones, 2012). For the younger drivers the reduction is due to lower levels of private car use.

Set against this will be an increase in work-related mileage of 'grey fleet' cars. A study by the University of Nottingham cited in HSE, 2001 indicated that drivers driving their own vehicles and those driving badged vehicles had a lower risk than those driving company owned cars. But other than this we know very little about the crash likelihood of those people driving their own car on work-related trips.

3.2.2 Data on reported casualties in collision by journey purpose and collision type

Since 2006 the Department for Transport has been publishing information on reported casualties in collisions by journey purpose and by collision type (Table RAS30037).

Table 2 shows the numbers of casualties of different severities who were injured in collisions involving a driver or rider driving for work. Commuting has its own category

and is not included here. This information comes from Table RAS30037 in Reported Road Casualties Great Britain 2012 (RRCGB, DfT 2012), with 2006 data added from the same table in RRCGB 2011. Over the seven years for which we have data, except for a rise in fatalities and serious injuries reported in this group in 2007, and slight rise in serious casualties in 2012, there has been a steady reduction in casualties of all severities.

Table 2: Road Casualties 'driving for work' by severity 2006-2012

	2006	2007	2008	2009	2010	2011	2012
Killed	858	890	748	592	540	559	539
Serious	6622	6673	6150	5456	5281	5197	5231
Slight	59879	58165	53525	50080	48868	47052	44819
All	67359	65728	60423	56128	54689	52808	50589

While the numbers on their own are interesting, they need to be considered against a picture of a downward trend in road casualties from all causes. Figure 1 shows the percentages of casualties by severity of injury who were killed or injured in collisions involving driver or rider driving for work. The denominator is all casualties in all collisions, which allows us to control for the background downward trend in absolute numbers of injuries in all collisions. This shows that there has been little change in this indicator over the period and just under 30% of fatalities and just over 22% of serious casualties were recorded whilst a driver or rider was driving for work.

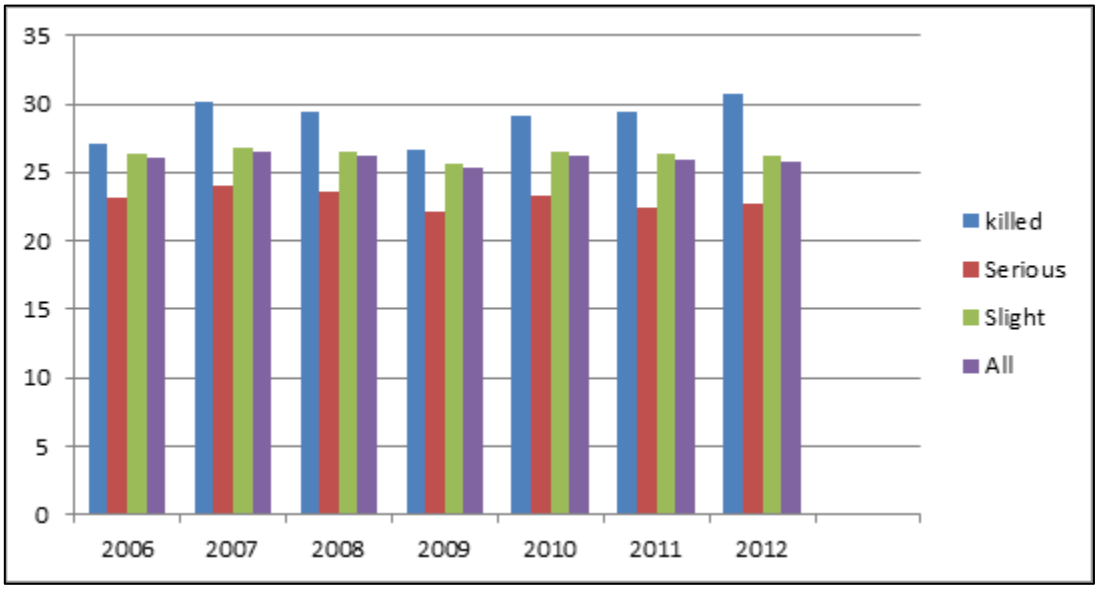


Figure 1: The percentage of casualties by injury severity that were killed or injured in collisions involving driver or rider driving for work.

Figure 2 helps disentangle whether it is the driver, their passenger or other road users not in the 'driven for work' vehicle who are killed or injured by drivers/riders driving for work. This data suggests that drivers themselves (16,270 drivers in 2012) are injured in about 30% of collisions, but it is other road users who are more often killed or injured by at work drivers (25,484 other road users in 2012). The starkest contrast is in the fatalities (87 driver and 422 other road users).

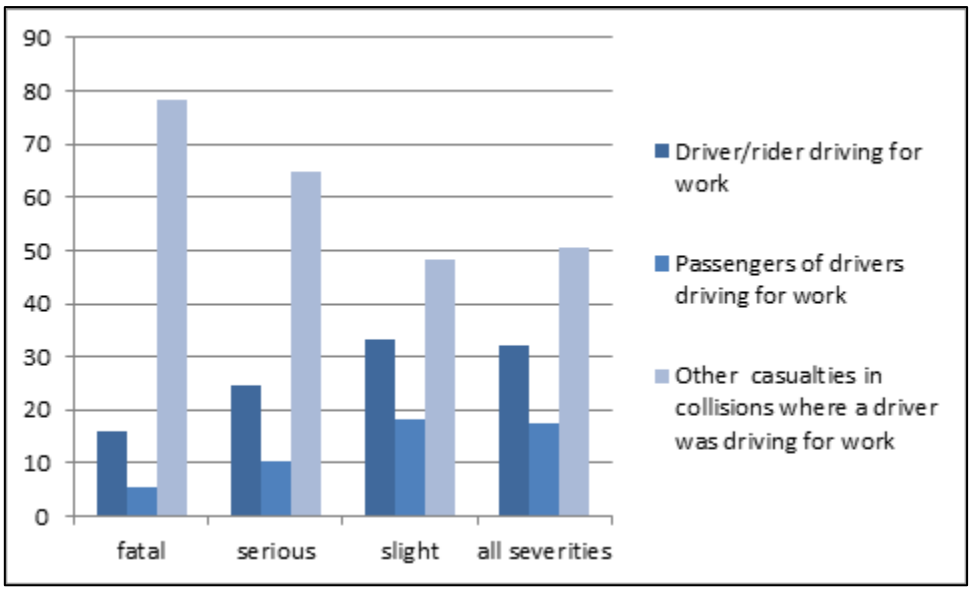


Figure 2: The percentage of drivers and riders driving for work, their passenger or other road users not in their vehicle who are killed or injured.

RRCGB also provides information on the vehicle type involved in at work collisions. Figure 3 shows the proportion of each vehicle type involved in an injury collision, for at-work driving and commuting as a comparison. All vehicle types can be used for work purposes (including bicycles and motorcycles which are often used for deliveries and by couriers). It is unusual to commute to work by HGV or bus (as a driver) but common amongst pedal cycles, motorcycles and cars. The data show that as the vehicle size increases the percentage of their collisions which are coded as 'driving for work' increases. Interestingly, from these data it appears that only around 56% of collisions involving light vans were whilst they were working or commuting. It is not clear whether this is an indication of the widespread use of such vans for personal journeys, or an indication that the data on journey purpose are not as accurate as we would like.

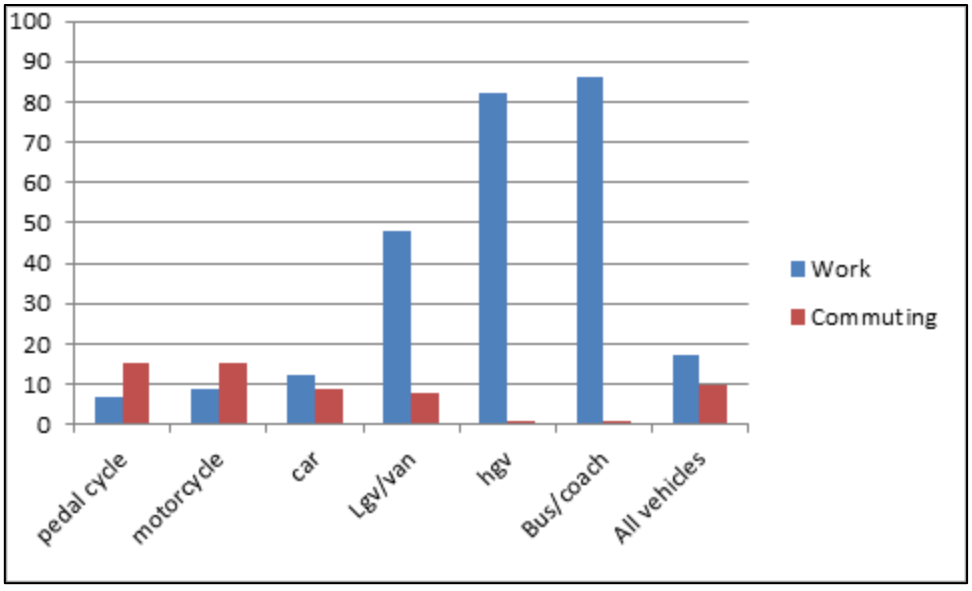


Figure 3: Percentage of vehicles involved in injury collisions that were being used for work or commuting 2012 (RAS20010)

Table 3 shows the distribution of vehicles involved in all collisions whether they were driving or riding for work or not (based on 2011 data). It is presented here to attempt to get a better picture of the distribution between vehicle types. The first column shows vehicle type, the second single vehicle non-pedestrian collisions, and the third the number of pedestrian casualties in collisions with the vehicle type in the first column. The next block shows the numbers of vehicles of a given type involved in collisions with vehicles of a given type. Fault should not be read into these as they show only vehicles involved collisions which include two or more vehicles. The most numerous collision type is car/car. However, the 'other' category in Figure 2 would include collisions by working cars with cars whose drivers are not at work.

Table 3: Collision partners involving a casualty in 2011

	single vehicle (non-pedestrian)	ped	p/c	m/c	car	bus	van	HGV	other
p/c	576	3369	86						
m/c	3552	839	329	78					
car	14843	19357	15626	12631	44539				
bus	2502	1225	421	135	2020	72			
van	489	1279	1185	1019	4936	199	260		
HGV	347	387	350	268	3374	78	276	148	
other	192	350	156	187	1405	79	97	74	63

Table 4 shows the distribution of KSI casualties amongst the vehicles involved in collisions. The table should be read similarly to Table 3 except that the first column indicates the casualty; for example no HGV drivers were killed or seriously injured in collisions with pedal cycles, but three HGV drivers were KSI casualties in collisions with motor cycles and 22 were in collisions with cars. On the other hand, 113 pedal cyclists were killed or seriously injured in collisions with HGVs and 207 in collisions with vans. For buses/coaches and HGVs the largest casualty class is single vehicle non-pedestrian. In the case of pedestrians the column indicates the number of pedestrian casualties killed or seriously injured by the vehicle class in the first column. For example, 147 pedestrians were killed or seriously injured by HGVs and 309 by vans.

Table 4: KSI casualties by collision partner

Injured road user	single vehicle (non-pedestrian)	Collision partner								
		ped	p/c	m/c	car	bus	van	HGV	other	all
p/c	239	88	27	44	2274	70	207	113	34	3192
m/c	1413	178	24	15	3052	26	256	101	60	5609
car	2998	4366	27	56	3679	81	308	360	87	9225
bus	220	280	4	1	69	0	8	1	5	333
van	93	309	1	0	102	2	20	40	3	340
HGV	84	147	0	3	22	2	5	28	9	195
other	65	87	0	1	103	3	11	10	13	223

3.2.3 Other sources of injury data

Leibling (2013) for the RAC Foundation and RoadSafe reported specially extracted and analysed data from the annual Labour Force Survey (LFS) which is a sample survey

carried out nationally by the ONS (Office of National Statistics). The HSE commissions questions in the LFS. The pertinent questions are 'have you had an accident in the past 12 months resulting in injury at work or in the course of your work' and 'was the most recent accident a road accident or some other accident?'

For the financial years 2010/11 and 2011/12 the estimate of self-reported work-related non-fatal road traffic crashes involving people when they were working were 62,000 and 73,000 respectively (the 95% confidence intervals for these estimates were 48,000 to 76,000, and 57,000 to 89,000). These estimates are somewhat higher than those reported by the DfT, bearing in mind the figures given in Table 2 include all casualties in collisions where a driver was working (that is they include other road users injured in such collisions as well as injured drivers or their working passengers). About 30% of casualties killed or injured in an accident involving an at-work driver/rider were the drivers/riders themselves (see Figure 2). There needs to be more research carried out to reconcile these two sources of data. The accuracy of the recording of journey purpose in STATS19 is not known, but it is likely to be an under- rather than an over-estimate; elsewhere it has been noted that the current rates of use) of the 'unknown/other' category (around 60-70% for journey purpose in STATS19), and that fact that we do not know how much of this is 'other' and how much is 'unknown', mean that the true proportion of injury accidents involving someone driving for work at the time may be much higher than currently believed (Helman *et al*., 2012).

It has been suggested that insurance data could be used to help refine estimates but this is difficult. Insurance companies were contacted for this project, and whilst it may be possible to estimate the numbers of vehicles insured for business use, whether or not a collision took place in the course of driving for work is not recorded.

3.2.4 Comparing industries

Just under 30% of all road deaths in Britain involve someone driving or riding for work. However, only 20% of these are the drivers/riders or their passengers. The vast majority are other road users who are not necessarily at work themselves. There were 1901 deaths on the road in Britain in 2011 and if for the purposes of this analysis we exclude pedestrian, pedal and motorcycle deaths there were 950 driver deaths giving as 13% the fatality rate for drivers/riders at work amongst all drivers.

To put this into context of deaths to people whilst at work and members of the public who are killed by work related activities, we find the pattern shown in Table 5. The HSE uses the Annual Population Survey to estimate the numbers of workers in each industry category.

We do not have a similar estimate for the numbers of people who may drive for work which means it is difficult to estimate comparable fatality rates for working drivers. The HSE have estimated the fatality rate for drivers of HGVs over 7.5 tonnes to be 4.4 per 100,000 HGV drivers (based on 12 fatalities) which is higher than the industries in Table 5 with the exception of agriculture.

Table 5: Number and rate of fatal injuries to workers by main industry and fatalities to members of the public over all these industries

Industry	Deaths 2011/12	Fatality/100,000 workers
Agriculture	35	10.3
Manufacturing	30	1.1
Waste and recycling	5	4.1
Construction	48	2.3
Services	42	0.2
All industries	171	0.6
Members of the public excluding rail trespass and suicides	148	n/a

Source: HSE. Statistics on fatal injuries in the workplace in Great Britain 2013. http://www.hse.gov.uk/statistics/

The greatest risk by workers is not to themselves but to others and this is especially true on the road. This is a strong message for the boardroom. More and better information needs to be collected so that the societal costs of driving for work can be estimated as well as the business cost. This does not in any way diminish the need to keep up and scale up the effort to improve driving for work but a shift of focus to protecting the 'others' who are damaged by this activity may be justified.

3.3 Summary

The information on crashes and casualties whilst driving for work is sparse and its accuracy is not known; the journey purpose part of STATS19 has only been available since 2006 and whilst the 'other' category has recently been separated into 'other' and 'unknown', no studies have been undertaken to assess how accurately journey purpose is recorded. In addition whether and how reporting might have changed over time (with police getting more used to recording information for this field) is unknown. Better recording by the police, and recording by the HSE, would be of great benefit in enabling the scale of the problem to be more closely specified.

Company cars and privately owned cars being used on company business form the largest group of working vehicles on the road and are involved (in absolute terms) in the most collisions which kill and injure both employees and third parties. However, the data are not collected in such a way that we can reliably assess the scale of their involvement nor track changes over time. The next most problematic issue is light vans (<3.5 tonnes), where it appears that only 56% of crashes are during work or commuting. However it appears that the van fatality rate is 3 per billion vehicle km, which is less than for all cars on all types of journey at 5.3, and the fatal or serious rate is 26 compared with cars at 63. More work is needed to understand the demographics (for example, age distribution) of light van drivers and their use of these vehicles both for work and for private purposes.

In short, better data are required for two reasons. First, we need to establish whether any changes to the fleet or to driving patterns (for example home deliveries) are having an impact on the nature and scale of the WRRS problem. Second, we need to use better data to inform policy, and to enable better evaluation of WRRS interventions and approaches at a national (and possibly at a fleet) level.

4 What do strategic stakeholders tell us?

4.1 Method

To improve understanding of how to move the MORR agenda forward, key stakeholders from the UK and Europe who have a strategic or in-depth knowledge of managing work related road risk were identified and interviewed using an open-ended qualitative method to cover three key areas:

- main opportunities and barriers to reducing occupational road risks
- perception of where there are strategic gaps
- what can be done to fill the gaps

This was done in order that their views on the main opportunities and barriers to reducing occupational road risks, and their perception of where the strategic gaps lie could be identified. Interviews were undertaken with representatives from the following organisations:

- ETSC (European Transport Safety Council)
- EU OSHA (European Agency for Safety and Health at Work)
- HSE (Health and Safety Executive)
- Roadsafe (UK)
- Police (UK)
- Danish Road Safety Council.

4.2 Findings

The following sections outline the key issues that emerged throughout the interviews.

4.2.1 Cross-border issues

Some participants felt that a major barrier is the large gap that needs to be filled between what happens at national level and at the workplace. It was discussed that an opportunity could be a Road Safety Performance Index on work-related road safety as a policy instrument to help EU Member States improve road safety "By comparing Member States' performance, it serves to identify and promote Best Practice in Europe and bring about the kind of political leadership that is needed to create what citizens deserve - a road transport system that offers a maximum of safety" (ETSC, 2013). However, it was acknowledged that the creation of PINs depends on good quality, consistent data across European countries which is currently only available for a small minority.

Another potential opportunity to address cross-border driving safety is new legislation (planned in 2015) to provide police across Europe with powers to give on-the-spot fines to drivers for eight offences related to issues such as drugs, speed, and seat belts. However, this has proved difficult to negotiate with member states, and the UK has not yet opted in.

Other cross-border issues identified were the need to provide awareness of different speed limits across Europe and the need to provide adequate rest areas. It was suggested that the current economic climate was encouraging employers to put pressure on drivers, thus increasing risk. An example was given of the emergence of a social

movement among truck drivers (http://international.sp.nl/bericht/112769/130702-brussels_must_not_leave_truck_drivers_out_in_the_cold.html) to stop employers putting unreasonable demands on them, forcing them to break rules and jeopardising their health and safety. Participants felt that the situation was not helped by tachographs that are difficult to read and easy to abuse. It was felt that it was difficult to know the extent of tachograph fraud and also, how difficult it is to enforce appropriate use.

4.2.2 Information on risks

The participant from the police felt that there are opportunities to understand more about data related to occupational road risk from the ACPO's National Roads Policing Intelligence Forum (ACPO/NPIA, 2007) which helps to identify emerging trends. The participant from the police identified that one emerging trend was the proliferation of sprinter vans (restricted to a maximum of 3.5 tonnes) and a move away from HGVs. It was felt that this may be because 'sprinter' vans are cheaper, quicker, and less heavily regulated than HGVs (for example they are not required to have tachographs), but can still carry significant loads. The police participant also felt that the police could provide some qualitative information about emerging risks such as the increasing incidence of long distance HGVs stopping on slip roads and in the hard shoulder causing a potential hazard to other drivers and possibly symptomatic of fatigue issues and inadequate rest areas

4.2.3 Political leadership

UK participants felt that a major barrier to reducing occupational road risk in the UK was the apparent lack of interest in MORR from the DfT. Participants felt that there was a need to mobilise DfT to provide a unified approach to the management of occupational road risk. It was felt that government needed to take a stronger role because despite the efforts of intermediaries such as RoSPA, it still remains difficult to reach the workplace level.

Other EU countries are identifying occupational road risk as a key issue and are consolidating their approach across sectors. For example, France has established an inter-ministerial committee to provide good quality data and to facilitate trend analysis. The committee has established a four year road safety charter to develop actions with employers and the national social insurance system to embed employer's social obligations regarding the application of Directive 89/391, which aims to provide a framework for the introduction of measures to encourage improvements in the safety and health of workers at work (EEC, 1989).

Other countries have developed funding models which include partnership from government and business to support the MORR agenda. For example, in 2013 the Danish Road Traffic Directorate analysed road fatalities as a result of driving for work to provide baseline data. The intention is that it will then commission four pilot projects to explore the impact of intervention approaches. Projects are planned across different sectors including public transport (Arriva), distribution of goods (Carlsberg) and energy.

The concept for the pilot projects is that they will:

- have scene-setting workshops with senior management
- carry out 360 degree audit
- identify where there is need for change

- write a position paper on action and develop an action plan with KPIs e.g. to focus on key risk factors such as distraction and fatigue.

The Danish Insurance Board and government have provided core funding over 5 years (the equivalent of £600k for staff) for a 'private-public model' including strategic partners such as the association of industries, employers (transport) and labour unions. Tactical partners include road safety management involved in education, marketing and communications. The concept of funding for road safety is that most of the funding comes from the private sector (a sum of £16m) whereas the state provides less than 5%, but in return funds 15 different projects. In return the private sector has high visibility and an enhanced corporate image through TV and sponsorship. Governance of the project is provided by a steering group with representatives from business and the police to support enforcement.

4.2.4 The role of the regulators

In terms of regulatory involvement it was felt that the UK lagged behind Europe, especially given that the HSE does not recognise occupational road casualties as a reportable injury at work. Generally, it was felt that work-related road injuries should be included within RIDDOR to signal that they should be managed as part of occupational safety and health risks. This finding mirrors recommendations that have been made by practitioners in the WRRS literature for many years.

One participant mentioned that in other countries, such as Germany and France, governments are taking a leading role in trying to reduce work-related road risk and that regulation is supported by appropriate data, leaving the current stance of HSE on RIDDOR as 'out of step' with European counterparts.

The HSE standpoint is that they have had a longstanding role in producing guidance on the management of occupational road risk and are currently reviewing guidance since they published their report "Driving for work" over 10 years ago. This review will form part of a submission to an EU commission working party group developing a suite of good practice guidance. The guidance focuses on three key themes. These are driving, workplace transport, and working on or near a road; it aims to streamline information to reduce what is perceived as the current perception that there are '1000 different pieces of guidance'. The HSE also produces an 'operational minute' aimed at HSE inspectors that explains how and when HSE gets involved in road casualties. This emphasises that the issue is mostly dealt with by the police. The HSE participant in this project felt that the key challenges were getting through to small businesses, and that whilst the HSE can provide guidance it was up to the employer to use this guidance to manage the risk

The HSE believes its role is to provide simple guidance, and to address the risks faced by small businesses by encouraging employers and employees to have an open dialogue to discuss near-misses, learn from them, and put in place measures to address risks. The participant from HSE was convinced that open conversation between employers and employees was a more useful way of understanding risks than using in-vehicle data recorders (also known as telematics or 'black boxes') that measure aspects of driving such as speed, braking, and time spent driving.

4.2.5 Insurance: partnership and technology

It was felt that another key gap is the stance of the UK insurance market, with European governments being perceived as being more actively engaged with insurance companies in awareness raising programmes to reduce occupational road risk. It was felt that private insurance companies in the UK could be more involved in MORR; an example is in Germany where media campaigns are delivered in partnership with insurance companies. Participants commented that telematics could be the way forward for very small business, as it takes away the administration burden and can incentivise the management of occupational road risk via reduction in insurance premiums.

4.2.6 Procurement

Participants commented that one way of raising the importance of WRRS was to make sure that service commissioners ensured that suppliers throughout the supply chain resolve to manage WRRS. However, it was recognised that this would need cooperation and coordination between health and safety representatives at different parts of the supply chain, and may meet opposition if it could be thought to increase delivery times. The authors note that good examples of this are the Crossrail agreements on health and safety (Crossrail, 2013).

4.2.7 Licensing and training of drivers

In discussion with a couple of participants the role of the licensing authorities (DVSA) and driving schools was mentioned with a view that they could take a more proactive role on driving for work. This could take the form of a driving for work module in the training framework, which could potentially raise awareness of issues such as fatigue, distraction and exposure.

4.3 Summary

The findings reported here are from a diverse range of participants' views about the management of occupational road risk. The messages from this exercise were that facilitators for the MORR agenda were viewed to be good data, government leadership, partnership with business and management of risk through the supply chain. The barriers were seen to be the difficulties businesses (especially SME's) experience in monitoring risk and weak political leadership, regulation and enforcement practice.

5 What do small businesses tell us?

5.1 Method

5.1.1 Approach

Semi-structured telephone interviews were conducted or online surveys were completed. Topic guides were developed to enable standardised semi-structured interviews (see Appendix A). The interviews lasted approximately 30 minutes each. The online questionnaire was an online version of the topic guide so that participants had the opportunity to take part in the research in their own time.

The work focused on interviewing those individuals who were responsible for managing their organisations' small fleets. The following areas were examined:

- participants' perceptions of the issue of WRRS
- awareness of advice and guidance about WRRS
- current practice and management of WRRS
- perceived control
- attitudes towards future initiatives.

In addition, a comparison was drawn between themes extracted from the interviews in this study and those undertaken in a previous study of best-practice companies (Helman *et al*., 2012). The comparison focused on:

- reasons for introducing a formal system
- barriers identified in the development and implementation of the system
- what had been gained from implementing the systems.

5.1.2 Participants

5.1.2.1 Participant recruitment procedure

TRL's previous experience of research with fleet and transport managers has shown that they tend to be difficult to recruit for research purposes as they are typically busy and need to see clear benefits to agree to participation in research. The recruitment process for this task was equally challenging. The following approaches were taken in order to reach as many fleet or transport managers as possible:

- adverts and articles were placed on relevant websites e.g. ACFO NewsFeed and Transport Engineer
- personal fleet contacts from TRL staff we approached
- social networking sites were used to advertise the research.

In order to encourage participation, participants were entered into a prize draw with two prizes (a £100 gift voucher/charity donation, and a PressurePro tyre pressure monitoring system). In total, 21 people (from a wide recruitment programme) consented to take part in the interviews (18 via telephone and three online). The participants' roles, organisation types, organisation size and fleet sizes are shown in Table 6.

5.1.3 Analysis

The interviews were analysed using two techniques: firstly the strategies used (and their sub-components) were arranged into broad categories in terms of the theoretical work that underpins their use. Secondly the interview responses were analysed using thematic content analysis (e.g. Neuendorff, 2002). This type of analysis involves condensing raw data into categories and themes.

The output from the thematic analyses was used to assess the degree of match between strategies currently being used in the management of work-related road risk, and the advice and guidance offered to organisations. The aim was to identify the gaps between what is being offered through the MORR agenda, and what is perceived as being needed in the WRRS field.

Table 6. Interview participants

No.	Sector	Participant role	No. of employees	Total fleet size
20	Transportation/communications/ electric/gas/sanitary service	Logistics Manager	1,100	400
7	Healthcare equipment/services supplier	Regional Operations Manager	450 (over 13 sites)	130 (<20 per site)
17	Local authority	General Manager & Team Leader	>20,000	150
19	Construction	Transport Manager	230	106
13	Healthcare/NHS	Fleet Manager	10,000	65
21	Water and sewage works	Chairman	70	64
14	Transport/courier	Managing Director	49	53
2	Public sector	H&S Advisor	735	20
8	Transport research/consultancy	Safety, Health & Environment Manager	350	20
1	Transport	Managing Director	50	15
4	Charity (residential/nursing homes)	Finance/admin Manager	243	15
12	Retail	Retail Director	78	14
9	Funeral services	Partner	11	13
10	Building and distribution	Branch Manager	37 (at site in question)	12
15	Charity (on behalf of central gvmt)	Fleet Consultant	200	12 (excl. grey fleet)
16	Publishing	Office Manager	57	12
3	Entertainment lighting	Transport Manager	160 (+freelance)	11
11	Funeral services	Director	6	8
6	Commercial cleaning	Business Development Manager	<20	7
5	Marketing services	Managing Director	50	1
18	Fleet management	Fleet Manager	not provided	1-15

5.2 Findings

5.2.1 Perception of road safety as an issue

5.2.1.1 The extent of the issue

Participants described to what extent road safety was an issue for their organisation. There was a general sense that it was important; however, this was not representative of all participants. For example one stated that it is "not a huge issue" as they do not have many drivers (although this participant was working to improve their accident management service). Another stated that they "tend not to think about it", and another revealed that the practicalities of fleet management are important but the safety aspect of it was not as much of a consideration. However the issue was more commonly described as "paramount", "massive", and "very important".

In terms of participants' personal feelings of concern about road risk, there was again a degree of variation, with around a quarter stating that it was not a great concern, while the majority felt that work-related road risk is always a concern and something over which it is difficult to exert full control.

Level of control over issues

Participants were asked whether their driving workforce engage in certain activities and the extent to which they can control these activities.

Driving between 2am and 6am

Fifteen participants stated that their drivers engage in early-morning driving, although most of these said this was an infrequent occurrence. It was generally reported that reducing driving between 2am and 6am would be difficult, as it is often driven by "customer requirements", "keeping customers happy", or "the nature of the work". One participant admitted that they would minimise costs by leaving at 4am for a meeting, rather than staying in a hotel.

Driving between 2pm and 4pm

Participants were asked whether they were aware of the increased risk to drivers when driving between 2pm and 4pm (the 'post-lunch dip'). Of the 21 participants, six were not aware of this. They were asked to what extent they could reduce this incidence of 'post-lunch' driving. It was felt that it was generally difficult or impossible to reduce, although a couple of participants said that they would consider highlighting it as a potential safety issue or changing the shift times.

Driving when distracted

When participants were asked the extent to which they felt that distracted driving (e.g. driving whilst using a mobile phone) could be reduced, it was generally reported that driver policies and training included this. However one participant admitted that they were "not too stupid to think it doesn't happen".

Driving under pressure

Around half of the participants reported that their drivers were not required to drive under pressure (for example to meet deadlines). Others stated that it is difficult to avoid, for example driving through heavy traffic to make an appointment with a customer, or making timed deliveries.

Using telematics to reduce risk

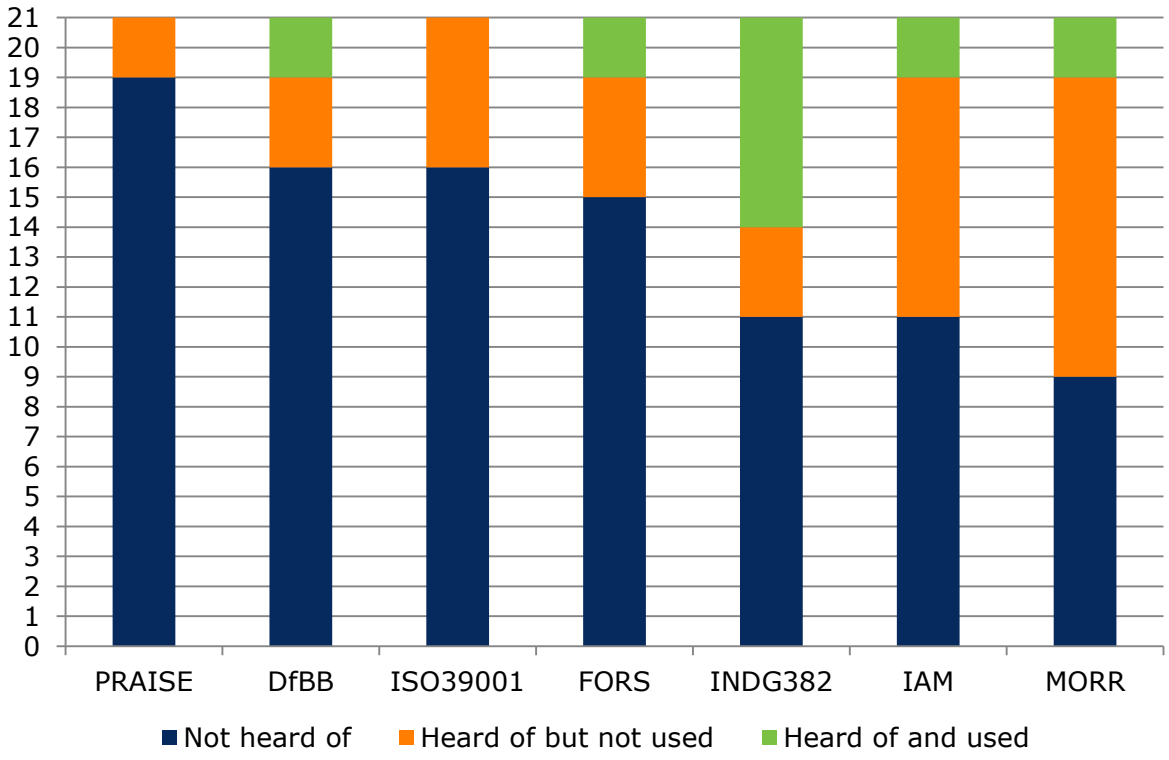
When asked whether telematics could be used to reduce road risk, the key concern was that drivers would perceive the introduction of in-vehicle data recorders as "big brother", and the secondary concern was the initial cost. However a number of participants reported that they understood the benefit of such systems, even if they did not make use of them within their fleet.

The role of insurance companies in reducing risk

Participants were asked whether they felt insurance companies could help to reduce road risk. There was a mixed response; around a third of participants did not feel that insurance companies had a role to play in reducing their fleet's road risk, while others felt that they did have a "definite role" to play, for example by sharing good practice or encouraging fleets to install in-vehicle data recorders.

5.2.2 Information and advice about WRRS

Participants were asked whether they had heard of and used various pieces of advice and guidance that are available. Figure 4 shows the overall number of participants who had heard of and used each piece of guidance, as well as a breakdown by participant. It is clear that levels of knowledge and (especially) use were low, particularly for the PRAISE project, Driving for Better Business (DfBB), the international standard (ISO39001) and the Fleet Operator Recognition Scheme (FORS). Five of the participants had not heard of *any* of the advice or guidance, and a further four participants had not used any of it. INDG382 (HSE's guidance document on driving at work and managing work-related road safety) was used more than any of the other sources, although over half of participants had not heard of it at all. The item most participants had heard of was the RoSPA MORR product, although again usage was low.



	Participant number																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
PRAISE																					
DfBB																					
ISO39001																					
FORS																					
INDG382																					
IAM																					
MORR																					

Figure 4. Knowledge and use of road safety guidance

It is worth considering that knowledge may be low because the advice and guidance may be location-specific (as with FORS which is targeted at organisations based in London), new (as with ISO39001 which was launched in late 2012), or not marketed as road safety guidance for organisations (as with PRAISE).

Participants reported that other sources of advice and guidance had been used, for example SAFED, FTA, FleetNews, VOSA, Brake and the Energy Savings Trust.

5.2.3 Strategies used to manage work-related road safety

In order to assess the level of MORR, participants were asked if they knew how many road accidents their drivers are involved in. It was found that very few formalised strategies were employed, although some processes were in place to lower risk.

5.2.3.1 Knowledge of accidents and offences

All participants stated that accidents are reported and that they have up-to-date figures, although one acknowledged that although they would expect their drivers to report any incidents, there is nothing in their contract to stipulate this. The accident data was used

in various ways; some store it for insurance purposes, some analyse the circumstances of the accident and check whether certain staff members are over-represented in accident involvement, some take the figures to meetings with senior staff members, and two participants said that whilst they collected the data, they did not use it in any way.

Participants were also asked if they were aware of how many road offences were being committed by their drivers. In general, participants tended to use driver licence checks (annually or, for some, bi-annually) to check whether the drivers had accumulated any points. Some reported that in addition, drivers are expected to report any changes to their licence. Any information regarding road offences is used to keep insurance companies updated or as a basis for disciplinary action if required, for example with multiple offenders). One participant reported that any drivers caught speeding will lose their bonus, and another said that the information will go on the employee's record, but did not know how that information would be used, if at all.

5.2.3.2 Processes to lower risk

Participants were asked whether they have any processes in place to lower road risk in their company. This was deliberately a very open question, designed to explore the processes that participants considered could lower road risk.

Around a third of participants mentioned driving licence checks as a 'risk-lowering process'. One felt that "a clean licence is a good indication of previous care being taken". Licence checks were typically carried out in combination with other processes, but one participant stated that they did not have any other processes in place.

Driving-related risk assessments were mentioned by three participants, with one stating that although they have a risk assessment form, it is "unusable" and "antiquated". Driver policies and procedures were also discussed by a few participants (one participant described how their policies encouraged staff to avoid driving).

In a couple of the smaller organisations with around 10 vehicles in the fleet, participants stated that they have regular contact and good relationships with the drivers and they will deal with any issues by talking them through.

Other processes mentioned include training, journey planning and safety alerts/bulletins (e.g. on winter driving).

5.2.3.3 Where to go for advice

When asked where they would go for advice on road risk, a range of organisations were mentioned, including IAM, RoSPA, VOSA, DfT/the Think! website, TRL, FTA, HSE, DfBB, Brake, and local police. However the most common response was 'Google'.

5.2.3.4 Asked by customers about WRRS?

Only three of the participants said that they had ever been asked about their road risk by a customer. This was reported to be at the tender stage, or as a general inquiry. One participant who had never been asked about WRRS stated that "considering the number of public contracts we take part in, this is surprising". Other participants reported that they had been asked about general health and safety performance, but that this had never extended to WRRS.

5.2.3.5 *Aware that road risk is managed in the same way as general H&S?*

Participants were asked whether they were aware that health and safety law requires them to manage road risk associated with their business in the same way that they manage their general health and safety risks. All bar one reported that they were aware of this requirement.

5.3 Comparison with 'good practice'

In a study by Helman *et al*. (2011) which explored the potential for a national standard for road safety and whether there were roles that the police could play in the area of work-related road safety, interviews were undertaken with fleet stakeholders. The fleet stakeholders interviewed in that study were managers of fleets who were highly engaged with the issue of managing work-related road risk, and many of whom were Driving for Better Business champions. This section presents a comparison between the respondents interviewed in the present study (who tended to be less engaged with work-related road risk) and their champion counterparts.

5.3.1 Reasons for introducing a formal system

The DfBB champions cited a number of reasons for introducing a formal system for the management of their work-related road risk. The key reason was that it helped them to formalise the systems that they already had in place and helped them to increase employee awareness about the importance of work-related road safety.

> *"We are trying to increase the profile of work-related road safety, and to change peoples' opinions of it."*

Respondents also made comparisons between the level of commitment regarding adherence to general health and safety regulations and work-related road safety requirements. It was felt that more emphasis and importance was placed on general health and safety requirements than on road safety requirements, suggesting that there is considerable room for improvement in the management of work-related road risk.

The findings from the current interviews suggest that some smaller fleet managers we spoke to hold a similar view; there was an understanding of the issue being important in some fleets, but not across all.

5.3.2 Barriers identified in the development and implementation of the system

Fleet stakeholders interviewed in the earlier project acknowledged that time and resource constraints were likely to be barriers for some organisations in developing and implementing a work-related road safety system. They felt that this was likely to be particularly pertinent to smaller organisations. However, it was felt that the benefits gained from introducing systems were greater than the resource requirements to develop and implement them.

The findings from the current interviews suggest that it may be useful to further extend the outreach of good-practice companies to smaller fleets to help them get over these perceived barriers.

5.3.3 What they had gained from implementing the systems

In terms of the benefits associated with implementing work-related road safety systems, respondents in the earlier study suggested that formalised systems helped them to:

- formalise their existing processes;
- assess driver risk – this was deemed to be helpful in the identification of potentially higher risk drivers - for both existing employees as well as informing the employment decision for new recruits;
- monitor incidents and penalty points – this enabled them to address issues as they arose and provide sufficient training opportunities and other mitigation strategies where applicable;
- use licence checks to determine drivers' legal statuses and offence histories, using the number of points they hold and the types of offences committed as a proxy indicator of the drivers' likelihoods of becoming involved in further incidents;
- define vehicle procurement processes.

In cases where MORR systems were discussed in the current study, similar issues to those above were raised. However the variation in responses was greater among the sample in this study than among DfBB champions. Again it seems likely that some communication of advantages from the good-practice companies to the wider WRRS field might help to bring more businesses on board with the MORR agenda.

5.4 Summary

The interviews carried out as part of the current research generally confirmed work done in other recent projects. Among the smaller fleets sampled in this study, there was evidence that MORR and the issue of WRRS is clearly lagging behind general health and safety as an issue of pressing importance in the day to day attention of those responsible for its management. Although there are clearly pockets of good practice in MORR (exemplified best by the DfBB programme), this is variable. Although the issue is generally perceived as 'important' even in the small fleets examined here, there is large variability in how pressing the issue is perceived to be, and businesses tend to report that many of the risk factors are outside of their control.

The other key finding is that in the businesses we spoke to, awareness of some of the key WRRS advice documents, toolkits and products was low. Usage was even lower. If the rate of use is reflective of small companies as a whole, then it would appear that the current strategy of having WRRS in this country addressed through guidance (rather than strong regulation) has failed to achieve the 'mainstream' status desired.

In short, there has been a great deal of effort put into promoting WRRS in the last 15 years; however when we examine what is happening 'on the ground', and especially in small fleets such as those involved in the current research, we see no evidence that MORR is being accorded the priority it deserves.

6 Stakeholder event

The key findings outlined in previous sections of this report were presented to stakeholders at an event hosted by PACTS (Parliamentary Advisory Council for Transport Safety). The event was run on 12/09/13. The questions asked at the event to guide discussion are shown in Appendix B. The questions focused on the needs identified in the report:

- The need for raising awareness about MORR
- The need for better delivery at a local level
- The need for better monitoring and evaluation

The stakeholders involved in the discussions included 18 representatives from a range of organisations:

- CTC (Cyclist Touring Club)
- Guild of Experienced Motorists (GEM)
- Health and Safety Executive (HSE)
- Independent transport consultant
- Interactive Driving Systems
- Institute of Traffic Accident Investigators (ITAI)
- Nottingham Trent University
- Road Safety Analysis
- Royal Society for the prevention of Accidents (RoSPA)
- Road Safety GB (RSGB)
- Transport for London (TfL)
- The Gifford Partnership (facilitator)
- Transport Research Laboratory (research team)
- UCL (research team)
- University of Leeds
- Zurich (Insurance)

The following sections outline the key themes that arose throughout the discussions.

6.1 Leadership is required at the national level as well as in organisations

It was generally agreed that leadership is lacking at the national level, especially from DfT and HSE. This was seen as the single most important action required for raising awareness, and for helping to elevate the importance of MORR in business practice. DfT and HSE are seen as the key organisations that can set the agenda for MORR going forward.

A specific point made was that the original recommendations made in the Work-related Road Safety Task Group (by the then HSC) need to be revisited to establish whether

they have been successfully implemented, and if not, whether they might form the basis of revitalising the topic of MORR in the future.

6.2 The insurance industry can play an important role

Insurers are seen as having a unique perspective and level of influence on businesses, especially small businesses. One route for raising awareness of MORR is through insurers. The point was made that for larger businesses, insurers themselves usually have good relationships and influence which can be utilised; however since it is believed that most of the risk is presented by smaller fleets, insurance brokers might be suggested as a key group to persuade regarding the spreading of the message about the importance of MORR. A code of practice from the ABI or DfT was suggested as one possible aid to this route of influence.

6.3 Time possibly a bigger barrier than money

It was noted that, especially for smaller companies, time to implement MORR may be a bigger barrier than money. In particular, within companies, it was suggested that line managers are often the ones who need help; it is possible to have buy-in from senior management, but no time or effective mechanisms by which to help line managers implement changes required to increase safety.

6.4 Legislation

There was general agreement that some legislative framework is required in order to support the management of risk in WRRS. Although there is support also for 'carrots as well as sticks', stakeholders all agreed that some level of legislation is required to break down barriers to implementation. More substantial fines for large fleets that have insufficient management of WRRS were seen as a good thing, so long as they can be public enough to prompt other companies to engage with the issue.

6.5 Reinvestment of enforcement money

One example was given of a police force that had been using money gathered from enforcement activities (remedial courses for speeding motorists, for example) to feed back into companies in the local area offering training and awareness interventions in those situations when multiple employees for a given company were caught breaking traffic law. The link between enforcement (especially certainty of detection) and company policy was perceived as being very important in supporting a legislative framework in which MORR is seen as mainstream and essential.

6.6 Integrated data are required

It was agreed that better data are required, and that this is more than making improvements to national casualty statistics (STATS19). It was suggested that multiple sources of data could be used to understand the scope of the issue, including STATS19, the Labour Force Survey, RIDDOR, local Accident and Emergency statistics, and information from insurers. There was support for work examining how to harness these data sources for the good of MORR.

6.7 Telematics

Telematics are seen as essential tools in bringing about fleet-level data (possibly in combination with some of the data sources mentioned above). However it was noted that for small fleets, data management may be a step too far given time and cost constraints. It was suggested that telematics service providers might be engaged to assess whether there is anything that can be done to improve access to and analysis of data on behalf of smaller fleets.

7 What do we need to do next?

The key message from this review is that WRRS is not managed in the same way as general health and safety to the extent that it should be. All too frequently – and particularly in smaller organisations – MORR is perceived as being a marginal activity in a fleet management programme rather than an activity that should be embedded strategically at board level as part of the occupational health and safety governance structure.

Several factors have been identified that contribute to this situation, such as weak political leadership, regulation and enforcement practices that impede the perception that MORR is of strategic importance to businesses, a lack of good quality risk monitoring data at a local and national level, and a lack of good quality evaluation of different approaches.

To address the issues identified in this review, we have identified several recommendations for action in the following keys areas:

- A better understanding of the problem
- Policy and advocacy
- Raising awareness and embedding good practice
- Monitoring and Evaluation

These areas are discussed in the following sub-sections.

A better understanding of the problem

- Good data are essential to a better understanding of the problem. Previous research had identified excess risk for drivers of company cars. However, there has been a large reduction in company car use, a decrease in the number of HGVs and the rise in the number of vans used for deliveries and by the self-employed. The DfT has included journey purpose in STATS19 but further work is needed to assess how accurate this variable is, and whether it has changed in its use over time.
- The HSE has been clear that it should not be duplicating the police recording of traffic collisions reported by the DfT in RRCGB. However the HSE has included a question in the Labour Force Survey (LFS) to assist estimating the level of injury at work that is related to road traffic collisions (it covers 44,000 households each quarter) and these estimates are very much higher than those appearing in STATS19. About 23% of LFS respondents are back at work the same day, a further 12% the next day.
- The HSE is now required by way of Regulation (EC) No 1338/2008 of the European Parliament and of the Council on Community Statistics on public health and health and safety at work, to provide information on those workers injured on the roads (at sea, in the air and on the railway). The only source of road data being used by the HSE is the Labour Force Survey and it is to be submitted in 2015 using 2013 data. This is a start but a systematic reporting system by employers through an enhanced RIDDOR may be a better way forward.
- The weakness in the data emanating from the LFS is that it fails to help the HSE identify and address the problem of those killed and injured by 'at work' drivers

where 70% of the deaths in STATS 19 for journeys involving someone driving for work are to other parties, compared with about 15% for the at work drivers themselves.

- Our analysis of data in Section 3 has thrown up two questions which require more thought.
    - Is the risk of a collision by at work drivers higher than or about the same as those driving for non-work purposes? Although a 'Fleet driver effect' for injury collisions has been identified in previous work (Broughton et al., 2003) this question is important to answer using more recent research because of changes in the age profile of working drivers, the vehicles they now use, and other potential changes such as the speeds at which they drive, the controls on drivers hours for certain classes of vehicle, and the mileage they drive in a year
    - Why is the percentage of other road users killed or injured by at work drivers apparently so high?
- DfT needs to lead on convening a working group to enhance the data on work related road safety including multiple data sources such as STATS19, the Labour Force Survey, RIDDOR, local Accident and Emergency statistics, and information from insurers and from the ACPO's National Roads Policing Intelligence Forum (NRPIF). This should include a periodic review of serious and fatal collisions in order to understand the circumstances in which vulnerable road users are injured in collisions with those who drive for work.
- There needs to be a better understanding of risk in terms of the different groups of drivers such as those involved in deliveries by HGVs and light vans, public transport and construction drivers.

Policy and advocacy

- We recommend that the HSC/E considers changing its policy so that employers have to report on the RIDDOR database when someone has been injured on the roads whilst driving for work, or when someone driving for work injures a member of the public.
- An indicator for driving for work should be part of a national road safety strategy.
- There should be stronger regulation to create more substantial fines for large fleets that have insufficient management of WRRS.
- The European Transport Safety Council should publish a Road Safety Performance Index (PIN) for work related road safety and this should be supported by PACTS and identified as a theme within its working groups. This will depend on establishing a harmonised dataset across Europe. (It has just been agreed that a PIN Flash on WRRS will be conducted in Autumn 2015).

Raising awareness and embedding good practice

- We recommend that the DfT works with DVSA and businesses to support the development of a new module in the learning to drive syllabus on driving for work

(targeting those risk factors that appear to be especially important such as fatigue, time pressure and distraction).

- That there is a national THINK! Campaign to raise awareness about risk factors of driving for work and that the DfT and forms a partnership with the insurance industry to co-fund such campaigns, as has been achieved in other countries.
- A revived occupational road safety alliance is formed and supported by DfT and that there are annual conferences to raise awareness supported by business.
- The DfT, in partnership with the insurance industry, should develop a code of practice for managing occupational road risk.
- Through enforcement the police can establish whether a driver is driving as part of work and liaise with their companies to improve the management of risk. This work could be funded from revenue from speed awareness courses.

Monitoring and Evaluation

- Insurance based telematics service providers should work with insurance companies to improve access to and analysis of data on behalf of individuals and smaller fleets to enable them to monitor and evaluate their performance with respect to occupational road risk.
- The research community needs to work with insurers and businesses to develop and apply formative, process and outcome evaluation methods to enhance the evidence base.

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Appendix A Phone interview topic guide

Introduction

In this project, we are talking to businesses such as yours about fleet management. For your interview, we would like to focus on one aspect of risk management – the management of occupational road risk.

In order that we can analyse the data more efficiently, we would like to record the interview with your permission. We will not identify you in any reporting, and it will not be possible for a reader of our report to trace anything you say back to you as an individual.

Are you ok with us recording the interview?

Do you have any questions before we start?

I need to gain your consent to actually take part. I will read through the consent form and check that you are happy.

		Yes or no
1.	I confirm that I have been provided with information for the study and have had the opportunity to ask questions	☐
2.	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason	☐
3.	I agree to the interview being audio recorded	☐
4.	I agree to the use of anonymised quotes in publications	☐
5.	I agree to take part in the above study	☐

_____ _____ _____

Name of Researcher Date Signature

Thank you – the interview will now begin

Background information:

Your job title:_____

Sector/type of work your organisation is involved in: _____

Number of employees:_____

Number of vehicles in fleet: Total _____ Breakdown:

Cars_____ Vans_____ HGVs_____ Other (specify)_____

Perception of the issue	
To what extent is road safety an issue for your company?	
Do you feel concerned about road risk?	

Awareness of advice and guidance					
Have you heard of or used any of the following? *(Only provide extra info if they think they have heard of it but aren't sure)*	**Heard of**		**Used**		**Comments**
	Y	**N**	**Y**	**N**	
Driving for better business *(raises awareness of the importance of WRRS in the business community and public sector by using advocates drawn from these communities to promote the business benefits of managing WRRS effectively)*	☐	☐	☐	☐	
RoSPA MORR *(Royal Society for the Prevention of Accidents Management of Occupational Road Risk – encourages organisations to adopt a proactive risk management approach to reducing the risks associated with 'at work' vehicle use, tackling the issue within the existing framework for H&S management)*	☐	☐	☐	☐	
PRAISE project *(Preventing Road Accidents and Injuries for the Safety of Employees – European project launched by ETSC (European Transport Safety Council) addressing all safety aspects of driving at and to work, praising best practices and raising WRRS standards through a series of evidence reports and seminars)*	☐	☐	☐	☐	
INDG382 - Driving at work: Managing work-related road safety *(HSE guidance on driving at work, which applies to any employer, manager or supervisor with staff who drive or ride*	☐	☐	☐	☐	

a motorcycle/bicycle at work, particularly those with responsibility for fleet management)			
ISO39001 *(international standard for road safety management, which outlines the requirements for a road traffic safety management system including policies, reporting, planning, guidance, and legal compliance)*	☐ ☐	☐ ☐	
FORS *(Fleet Operator Recognition Scheme – a London-based voluntary certification scheme which aims to ensure fleet operators work lawfully and to best practice)*	☐ ☐	☐ ☐	
IAM drive and survive *(Institute of Advanced Motorists product – dedicated to improving driver safety at work through driver risk management)*	☐ ☐	☐ ☐	
Are there any other sources of advice/guidance you have used? If yes, what?			
Actions taken/current practice			
Do you know how many road accidents your drivers are having? *(After yes/no response but record any extra info)*			
(If yes) How do you use this information?			
Do you know how many road offences such as speeding you drivers are committing? *(After yes/no response but record any extra info)*			
(If yes) How do you use this information?			
Do you have any processes in place to lower road risk in your company? If so, what? How have you found it in terms of managing costs/resources? If not, why not? (Prompts = licence checks, plan-do-check-act, training, education, risk assessment etc.)			
Do you know where to go for advice on road risk? (If no, where would be your first			

port of call?)	
Have you been asked by any of your customers about your road risk?	

Perceived control	
Does your workforce drive between the hours of 2am and 6am (which is a period of increased risk for fatigue- and sleepiness-related crashes)?	
(If yes) To what extent do you feel you can reduce your drivers driving between these hours?	
Are you aware that drivers are also at increased risk for fatigue- and sleepiness-related crashes between the hours of 2pm and 4pm?	
(If yes) To what extent do you feel you could reduce your drivers driving during this period?	
To what extent do you feel you can reduce your drivers driving when distracted, particularly by using mobile devices such as phones?	
Do your drivers ever drive under pressure to meet a deadline? If so, to what extent do you feel you can reduce this?	
To what extent do you feel you can use route planning to reduce road risk?	

Attitudes towards future initiatives	
Do you feel that vehicle data recorders	

and telematics could help your business reduce its road risk?	
Do you feel that insurance companies could help to reduce road risk? e.g. providing information, reducing insurance cost for successfully implementing certain policies, providing black boxes	

And finally…	
Are you aware that health and safety law requires you to manage the road risk associated with your business in the same way that you manage your general health and safety risks?	

Appendix B Questions asked at stakeholder event

1. What actions need to be undertaken and by whom at a **national level** to **raise awareness** of the need to manage occupational road risk?

   Things to consider:

   - Roles of government (e.g. DfT/DSA/ACPO/HSE) and business (e.g. CBI/ABI)?
   - Barriers and facilitators?

2. How can we ensure that MORR is delivered at a **local level**?

   Things to consider:

   - Role of employers?
   - Role of service commissioners?
   - Role of technology i.e. telematics?
   - Role of regulation and enforcement?

3. How can we **monitor and evaluate** progress to inform policy?

   Things to consider:

   - What data do we need, from whom?
   - Who will fund monitoring and evaluation?
   - How should good practice be disseminated?

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