

Factors Influencing the Behaviour of People Who Drive at Work

Catriona O'Dolan, Steve Stradling
Transport Research Institute
Napier University

Abstract

Work-related road accidents account for around 25-33% of all road fatalities in Britain and in the region of 250 serious injuries per week. Previous studies show that those who drive for work have a higher accident risk than the general driving population even when their greater exposure is factored out.

Quantitative and qualitative data was collected from Strathclyde drivers who drive as part of their work. The data show that drivers who have points on their licence or have recently received a speeding ticket are more likely to have been involved in a road traffic accident and these accidents are more likely to have occurred during work time. This confirms the theory that cameras spot crash magnets and illustrates the importance of educating those who drive as part of their work, in particular, to slow down. This paper also examines why occupational drivers are vulnerable on the roads by giving an insight into their attitudes and motives surrounding the driving task.

A greater understanding of the beliefs and behaviours of drivers who are at risk of being involved in a third of road traffic accidents should serve to inform more effective road safety policies. With the possible advent of a graduated penalty system, attitudes to the current points and fine system will be of interest in a group the security of whose livelihood is most likely to be impacted by such changes.

Introduction

Work-related road accidents account for around 25-33% of all road fatalities in Britain and in the region of 250 serious injuries per week (Health & Safety Executive 2003). These alarming statistics are echoed worldwide with road traffic accidents accounting for 39% of work-related fatalities in Australia (Harrison, Mandryk & Frommer 1993), 27% in the USA (Miller 1995, Miller & Galbraith 1995) and professional drivers having the highest injury incidence of employed people in Sweden (Bylund, Bjornstig & Larsson 1997).

A number of studies show that those who drive for work have a higher accident risk than the general driving population even when their greater exposure is factored out (Lynn & Lockwood 1998, Dimmer & Parker 1999, Chapman et al. 2000, Kweon & Kockelman 2003). This elevated risk has been attributed to the *extra motives* (Naatanen & Summala 1976) of these individuals, motives outside the driving task, such as time pressures, stress of work, fatigue and use of mobile phones (Salminen & Lahdeniemi 2002).

Research also shows a positive link between involvement in road traffic accidents and detection for speeding offences (Rajalin, 1994; Cooper, 1997; Stradling et al, 2000, 2003). Stradling et al (2000) found that those who drove some of the time as part of their work drove faster, breached the rules of the road more often and scored lower on a self-report safety scale than those who did not drive for work.

Employers undoubtedly have a responsibility to their driving work force. Following the Government's Road Safety Strategy 'Tomorrow's Roads: Safer for Everyone', an independent Work-Related Road Safety Task Group was established in collaboration with the Health & Safety Commission (The Work-related Road Safety Task Group 2001a, 2001b). The group recently published 'Driving at Work - managing work-related road safety', giving guidance for employers on managing risk on the road. In a recent report, the House of Commons Transport Select Committee supported greater enforcement of this guidance as well as better reporting of work-related road incidents.

This paper reports data collected from occupational drivers in the Strathclyde area, with the aim of gaining insight into these extra motives. Driving for work is compared to driving outside work in

terms of collisions, convictions and driving behaviour. In addition, qualitative sections of the questionnaire cover drivers' attitudes to the increasing use of safety cameras in their 'place of work' – the road - and to the current enforcement system and how this in turn influences their speed choices.

This paper concludes that a greater understanding of the behaviour and attitude of drivers who are at risk of being involved in a third of road traffic accidents should serve to inform more effective road safety policies.

Method & Results

Sample

Companies and organisations within Strathclyde were approached to take part in a survey in which their employees who drove either frequently or infrequently as part of work were asked to complete a questionnaire.

The questionnaire comprised of a number of straight answer, free text and multiple choice (rating) questions. Respondents were not required to put their name to their answers.

Demographics

201 questionnaires were completed. 58% were from the private sector. These came from a variety of companies such as construction companies, football clubs, food and drink manufacturers and pharmaceutical companies. 37% were from the public sector namely the council and health authority. 4% of questionnaires came from the voluntary sector and 1% from the self employed

The average age of respondents was 42 years (range: 18-63) comprised of 82% males and 18% females. A numbers of professions were represented, ranging from drivers, sales people and road workers, through health professionals and engineers, to managers and directors.

Participants had held a driving licence for, on average, 21 years with the majority driving between 0-9,999 miles for work and 3,000-5,999 miles outside work annually.

46% of the sample drove a company car for work, 23% their private car, 21% HGVs, and 10% were van drivers. Table 1 gives the particular vehicular combinations of at work and outside work driving in the sample.

Table 1. Total percent of sample driving each vehicle combination in and out of work

In work	HGV	Van	Company car	Private car	Total
Outside work					
HGV	-	-	-	-	-
Van	-	<1	-	-	0.5%
Company car	-	-	34	-	34%
Private car	21	9	12	23	65%
Motorbike	-	-	<1	-	0.5%
Total	21%	10%	46%	23%	

Table 2 shows that while for each vehicle type the modal value of frequency of at-work driving is 5 days per week, there is substantial variation both below and above this value within each vehicle type.

Table 2. Number of days per week each vehicle type is driven for work

Days per week	<1	1	2	3	4	5	6	7
HGV	-	3		5	15	38	33	8
Van	-	5	5		11	53	21	5
Company car	-	17	20	21	9	29	2	2
Private car	7	11	17	15	13	28	9	-

Total	2%	12%	14%	14%	11%	33%	12%	3%
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Likes & dislikes of driving for work

When asked what they liked and disliked about driving as part of work, responses were divided between those that enjoyed driving and those that liked nothing about the experience. A common theme among the former was the perceived freedom that driving gives both in terms of independence from the constraints of public transport and as ‘an escape from the office’. Others saw it as a welcome addition to their working time; ‘I enjoy driving to add a diversity to my work. It also allows me to think about problems and work in a beneficial way.’ (Male aged 40). Rather alarmingly many people echoed the practise of driving as a time when they could concentrate on thinking about work: ‘[It] gives me time to think about work issues without distractions.’ (Male aged 54).

However for some this additional work time can cause stress; ‘[I] don’t mind driving when it is in the course of normal working hours, however generally when driving this is tagged onto the beginning or end of working day, this is lengthening working time with no financial reward or recognition.’ (Female aged 30) These pressures undoubtedly have an impact on safety; ‘[I dislike] being in a rush because of work and conscious that as a result I am not driving as safely as I could.’ (Male aged 40)

Bad weather, road conditions and traffic hold ups were also cited as common dislikes of driving as part of work.

Driving for work versus driving outside of work

Respondents were asked to indicate on a five point scale how much they agreed or disagreed with a number of statements regarding the difference between driving for work and driving outside of work:

- When asked whether they drive faster when at work, participants were split with a majority of 62% stating they did not. However, 56% admitted to driving faster during work time if they’d been held up, compared to 45% reacting this way if they had been held up on a personal journey.
- 80% of participants did not agree that they drove less carefully when at work and 67% did not agree that they took less care when driving a vehicle they did not own.
- 61% agreed that they were often under time pressures when driving for work compared to 25 % who felt these pressures outside work.
- 35% found driving for work stressful whilst only 15% reported driving outside work stressful.
- Overall, 76% of drivers felt their driving style was the same during work time as outside work. An interesting insight is that only 21% did not agree that their driving was better than those who only drive short distances or infrequently.

Penalty points and crash history

Respondents were asked to provide information regarding their driving licences and recent road traffic accident involvement:

- 24% had been flashed by a speed camera and 16% received a ticket in the past 3 years whilst driving during work time with only 14% receiving a ticket whilst driving outside work.
- 15% of the HGV drivers, 15% of the private car drivers, 22% of the transit/large van drivers and 32% of the company car drivers had been flashed by a speed camera while driving at work in the previous 3 years.
- 7% of the HGV drivers, 9% of the private car drivers, 17% of the transit/large van drivers and 24% of the company car drivers had received a speeding ticket for driving while at work in the previous 3 years.
- 67% of respondents had no penalty points on their licence at the time of asking, but overall only 47% had never received any points.
- 21% currently have 3 points with 23% receiving 3 points in total over the life of their licence.
- 9% currently have 6 points with 12% having received 6 in total.
- 17% had received over 6 points in total with one respondent claiming 36 points in total so far!

- 40% of the sample had been involved in one or more accidents in the past 3 years. 58% of these accidents occurred whilst driving for work.

Table 3. Proportion of drivers who have ever received penalty points who have been involved in a road traffic accident as a driver in the previous three years.

Total number of points	Accident free	One or more accidents
0	77%	23%
3 or more	46%	54%

Table 3 shows that while 23% of those who had never received any penalty points in their driving history had been involved in an accident in the previous 3 years, accident involvement was elevated to 54% for those that had received 3 or more points in their driving career (Fisher's exact test $p=.000$).

Table 4. Proportion of drivers that have and have not received a speeding ticket while driving for work who have been accident involved in the previous three years while driving for work.

Number of speeding tickets	Accident free while driving as part of work	One or more accidents while driving as part of work
0	80%	20%
1 or more	38%	63%

Table 4 shows that the likelihood of accident involvement at work increases from 20% for those who have not received a speeding ticket while driving for work in the past three years to 63% for those that have (Fisher's exact test $p=.000$).

Table 5. Proportion of drivers that have and have not received a speeding ticket while driving outside work who have been accident involved in the previous three years while driving outside work.

Number of speeding tickets	Accident free while driving outside work	One or more accidents while driving outside work
0	83%	17%
1 or more	48%	52%

Table 5 shows the same pattern as previously for driving outside work, with more of the recent detected speeders also having a recent collision history (Fisher's exact test $p=.000$).

Attitudes to speed enforcement

Participants were asked to respond to questions regarding their attitude to speed cameras:

- 91% of drivers drove on roads with safety cameras every day or most days but only 30% felt the spread of safety cameras had made driving for work safer.
- 40% felt that driving for work had become more stressful since the spread of speed cameras and 37% felt it had added to the stress of driving outside of work.
- A majority, 57%, of drivers admitted to slowing down when driving on roads with safety cameras but then speeding up for the rest of the journey. 30% said that they always stick to the speed limit and 9% slow down for the whole journey.
- On unfamiliar roads with safety camera signage, 36% only slow down when they see a camera, 27% slow down for the whole stretch where the signs are, 8% slow down for the whole journey, 28% are always obeying the limit and 1% do not slow down at all.
- When asked if they could choose between receiving just penalty points or just a fine if caught speeding, 87% opted for the fine with the most common reason given as 'I can afford a fine but I can not afford to lose my licence.'

Corporate responsibility

A number of questions were posed to ascertain the attitude of employers towards their drivers and safety practices in place:

- The majority, 62%, of respondents stated that employers were understanding if journeys took them longer than expected although 55% agreed that their employer would expect the same amount of work to be done despite such delays.
- 65% of respondents had received no guidelines on the number of hours you should be on the road when driving for work, with 73% receiving no training with regard to road safety.

Conclusions

People who drive as part of work are more at risk of being involved in a road traffic accident than those who don't, partly due to extra motives such as time pressure, stress and thinking about work. Such motives are less pronounced in these individuals when driving in their own time.

It is alarming to find that many respondents view the complex physical and mental task of driving as a time when they can think without distractions. It is likely that this escape from a stressful office environment impacts on driving. Studies show that work-related stress is related to involvement in accidents for all drivers (Cartwright, Cooper & Barron 1996). Those that are on the road during working hours are therefore not only affected by the stress of driving itself but by the work they leave behind and /or take with them. Interestingly, the new Mercedes 'A' Class is being marketed as 'A Space to Think' depicting the car as a safe and peaceful haven from the hustle bustle of the office and city life. Panou et al (2005) characterise the driving task as involving (at least) eight levels of strategic and tactical tasks:

- Strategic levels: activity choice, mode and departure time choice. Discern route alternatives and travel time.
- Navigation tasks: find and follow chosen or changed route; identify and use landmarks and other cues.
- Road tasks: choose and keep correct position on road.
- Traffic tasks: maintain mobility ('making progress') while avoiding collisions.
- Rule tasks: obey rules, regulations, signs and signals.
- Handling tasks: use in-car controls correctly and appropriately.
- Secondary tasks: use in-car equipment such as cruise control, climate control, radio and mobile telephone without distracting from performance on primary tasks.
- Speed task: maintain a speed appropriate to the conditions.

It would be of interest to examine the extent to which these tasks vary as between at-work and out-of-work driving, and the extent to which these driving tasks are interfered with by the additional demands and stresses of at-work driving.

Compared to their driving style outside work subjects claimed not to drive any faster or less carefully when driving for work, but were under greater time pressures and found driving more stressful. 61% agreed that they were often under time pressures when driving for work compared to 25% who felt these pressures outside work. This is consistent with a study by Adams-Guppy & Guppy (1995) who cited time pressures as the most likely influence for over half of company car drivers in Britain exceeding motorway speed limits by at least 10mph.

24% of the sample had been flashed by a speed camera and 16% received a ticket in the past 3 years whilst driving for work and 14% had received a ticket whilst driving during leisure time. Those that had received tickets were more likely to have been accident involved in the past 3 years. This is consistent with research by Stradling et al (2002) which showed that both males and females who had reported recent collision involvement were statistically more likely to be detected speeders. In this sample, the effect was more pronounced in those that had been caught speeding whilst at work. In other words, those who speed at work are more likely to be accident involved than other drivers. It is therefore especially important to slow these drivers down.

We know that 'cameras spot crash magnets' (Stradling 2002) and it would appear from this study that in particular 'cameras spot working crash magnets'. However, with 40% of subjects feeling

that the spread of speed cameras had made driving for work more stressful and 57% only slowing down for cameras and speeding up for the rest of the journey, this message is not getting through to the population of drivers who need it most. Not surprisingly, subjects would rather not be penalised by their licence being endorsed with penalty points with the prospect of an accumulation leading to loss of licence and livelihood, but it is questionable whether this prospect is enough to slow drivers down. With the possible advent of a graduated penalty system, attitudes to the current points and fine system is important in assessing the deterrent effect of such a system.

It is clear from the fact that 73% of respondents had not received any training with regard to road safety that work-related road safety is not considered a high priority by all companies and organisations. In 2004, the Department for Transport recommended a major change in management strategy regarding work-related driving accidents, alongside implementation of 'accident monitoring' to ascertain the true extent of the problem and convert insurance claims data into risk management information. Where this is essential for improving safety on our roads, the individuals who are doing the driving also need to take responsibility for their actions and those of their colleagues i.e. maintain a safe work ethic; 'Work habits accepted by one's co-workers and the need to vary actions are extra motives in work life' (Hakkinen, 1978, quoted in Cooper, 2002). Education concerning road safety therefore needs to be directed both at a corporate and individual level and, probably most importantly of all, the attitudes of those who use our roads the most needs to be challenged.

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