Department for Transport

Seatbelt and mobile phone usage surveys: England and Scotland 2009

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Abstract

The seatbelt and mobile phone surveys are carried out each year to observe the use made of seatbelts by vehicle occupants and of mobile phones by drivers around the country.

The core seatbelt survey is based on sites around Crowthorne and Nottingham, and additional surveys were carried out in Scotland and Gloucester in 2009. Observations are made of restraint use by drivers and passengers of vehicles at light controlled junctions.

The mobile phone surveys are based on free flowing traffic across all road types. Thirty sites were visited for the core survey in the South East of England in 2009; an additional survey in the Bristol area was also carried out.

Executive summary

The Department for Transport has commissioned TRL to carry out regular seatbelt surveys since 1988 and mobile phone surveys since 2002 in order to assess the use made of seatbelts by vehicle occupants and of mobile phones by drivers.

Seatbelt surveys

In 2009 the core seatbelt survey was carried out at 32 sites around Crowthorne and Nottingham. Additional seatbelt surveys were carried out at 21 sites in Scotland, at 12 sites in Gloucester and at 12 sites near schools in London.

Observations of restraint use, age and sex of vehicle occupants, and mobile phone use by drivers, were made for stationary vehicles at light controlled junctions. All surveys were carried out during daylight hours (08:30 - 18:00), and at some sites, additional sessions observed the use of restraints in the early morning and evening (07:30 – 21:00). Little difference was observed between wearing rates during daylight hours and those over extended hours.

Seatbelt use by car drivers in the core survey remained high at 95% in 2009, dropped slightly for front seat passengers (from 96% in 2008 to 95% in 2009) and increased to 89% for rear seat passengers in 2009 (from 88% in 2008). For other vehicle drivers the wearing rate was considerably lower than car occupants, at 69% in 2009.

In Scotland, 95% of car drivers were observed to be wearing a seatbelt in the 2009 survey; this is the same as reported in the 2002 survey.

Consistently across all seatbelt surveys, females were observed to be wearing seatbelts more often than males. In the rear seat of cars, those in the youngest child age group (0-4 years) were observed to be wearing restraints more often than those in the older age groups (5-9 and 10-13 years).

Mobile phone surveys

The core mobile phone survey took place at 30 sites around the South East of England, and an additional survey took place at 30 sites around Bristol in 2009. These surveys covered all road types and surveyed free flowing traffic with the aid of an electronic mobile phone signal detector.

In December 2003, the use of a hand-held mobile phone whilst driving was banned, and the penalties were increased in February 2007. Previous survey results have shown a decrease in the proportion of drivers using a hand-held mobile phone immediately after these time points. An increase has been observed after these dips. The observed use of hand-held mobile phones by car drivers in the core survey in 2009 was 1.4%, an increase from 1.1% in 2008. A similar pattern, but higher proportion, was observed for drivers of other vehicles: hand-held use was observed to be 2.6% in 2009 (2.2% in 2008).

The use of hands free mobile phones is more difficult to detect, and so results are less accurate. In 2009 1.4% of car drivers were observed to be using a hands free mobile phone, up from 0.5% in 2008.

1. Introduction

The Department for Transport has commissioned TRL to carry out regular seatbelt surveys since 1988 and regular mobile phone surveys since 2002 in order to measure the use of seatbelts and other restraints by vehicle occupants, and of mobile phones by drivers. Previous results have been published in TRL leaflets (2006 – 2008 results TRL, 2008), and documented in project reports (2008 results: Broughton 2009).

The core seatbelt survey takes place at sites based around Nottingham and Crowthorne. In 2009, additional surveys were carried out in Gloucester, and in Scotland (where previous surveys were carried out in 1997 and 2002 for the Scottish Executive).

The seatbelt survey is carried out at light controlled junctions across a range of road types. Detailed observations are made of stationary vehicle occupants' restraint use along with demographic information such as age and sex.

The core mobile phone survey is carried out in the South East of England. In order to extend the coverage of the survey, four areas (Newcastle, Manchester, Birmingham and Bristol) are surveyed in rotation in parallel with the core survey. In 2009, this additional survey was carried out in Bristol. Electronic devices that detect the use of a mobile phone are used which enable the surveys to take place on free flowing traffic.

In this report, the results of the 2009 surveys are shown, discussed and compared with previous years' results. The appendices provide further tabulations of the data, and contain figures used to produce the charts shown in the main report.

2. Methodology

2.1 Seatbelt survey

The seatbelt surveys in 2009 followed the standard TRL methodology which has been employed since 1988.

Four seatbelt surveys were carried out in October and November 2009 covering Crowthorne and Nottingham (core survey), Gloucester, Scotland and in London close to schools.

Thirty two sites form the core survey: 20 around Crowthorne and 12 in the Nottingham area. The sites cover a range of road types, traffic flows and areas. In the majority of cases these sites were the same as in previous surveys; however some changes (detailed in the methodology report, Buttress and Walter (2010)) were made in order to provide a sample of sites that was more representative of traffic flows in England. Sites that were not included in the core survey in 2009, but had been included in previous years were also surveyed in order to assess whether any change in results was due to new sites or an actual change. This analysis is shown in Appendix B; the results are close enough to mean that in most cases differences between 2008 and 2009 figures are unlikely to be affected by the change of sites, however there are some exceptions and the effect of the changes in sites should be borne in mind in comparing 2009 results with previous years. Eight sites were re-surveyed at the weekend (four in Crowthorne and four in Nottingham).

An additional survey is carried out in a different area each year in order to inform estimates of national wearing rates for England. In 2009, 12 sites were surveyed in Gloucester, with four being revisited at the weekend.

A further survey was carried out in Scotland, on behalf of the Scottish Government; 21 sites across the country, over a mixture of road types, were surveyed during the week. Many of these sites were the same as those covered in the previous Scottish survey (Burns et al, 2002). However, as for the core survey in England, some changes were made in order to make the sites surveyed more representative of national traffic flows, and again the affect of these changes on the main results is shown in Appendix B.

For the first time in 2009, an additional survey was carried out near schools in London, in particular to assess the wearing rates of school children. Twelve sites near infant, primary and secondary schools were observed in the morning arrival period and the afternoon 'home time' period.

Surveys take place at light-controlled junctions on stationary traffic where safe and reliable observation can be taken. Each survey team collects information on drivers of cars, vans, taxis, lorries, buses and coaches as well as passengers in cars, taxis, vans and lorries. Variables collected for each occupant include the estimated age group, gender and detailed restraint information including the use of different car seats by children. For each driver, additional information on mobile phone use is recorded.

The number of vehicles that travel through the survey junction during each session is counted and recorded separately. The traffic count informs the weighting procedure described below.

The surveys are carried out during the hours of daylight (08:30 - 18:00), so that reliable observations can be made safely. In 2009 some sites were surveyed for longer periods (from 07:30 to 21:00). This extended period was only possible where conditions allowed observations to be made accurately and safely after dusk.

Once the data have been collected, they are subject to validity checks and weighted to give more representative results across the survey area. Wearing rates are calculated as the (weighted) number of vehicle occupants correctly restrained over the (weighted) number observed.

In 2009 the seatbelt surveys were carried out by Accent.

2.2 Mobile phone survey

The mobile phone survey has followed the same methodology since 2002. This means that data are collected in a consistent manner, and results from year to year are comparable.

Mobile phone surveys are carried out at 30 sites in the South East of England and at 30 sites in an additional area (Bristol in 2009). These sites cover all road types, including motorways. The surveys are carried out on moving traffic. Six sites are revisited at weekends in both survey areas. In the majority of cases, the sites were the same as those used in previous years, although some new sites were surveyed in order to make the sites more representative of national traffic flows. Appendix B shows the impact of the changes in survey sites on the main results for the 2009 survey.

Survey staff record the number of drivers of passing vehicles who are using a mobile phone, together with a count of the volume of passing traffic. Hand-held and hands free mobile phones are counted separately. The survey staff use specialist electronic equipment to assist in the detection of mobile phones in combination with visual observation to check whether phones are being used by drivers.

Weights for the mobile phone data are computed to make the data representative across different road types. These weights are based on traffic flows split by road type and rural/urban classification. Usage rates of hand-held mobile phones are calculated from the (weighted) number of drivers using a hand-held mobile phone over the total (weighted) number of drivers observed. A similar calculation is made for hands free mobile phones.

In 2009, Nationwide Data Collection were contracted to carry out the mobile phone surveys.

2.3 Further information

Further details of the methodology used for the two surveys can be found in the full methodology report (Buttress and Walter, 2010).

3. Seatbelt survey results

3.1 Core seatbelt survey results

The core seatbelt survey is based around Crowthorne and Nottingham. The numbers of vehicle occupants surveyed in 2009 are shown in Table 3.1. Results for cars include taxi occupants and other vehicle observations are collected for drivers of buses, coaches and minibuses, as well as drivers and passengers of vans and lorries. Larger numbers of observations lead to more precise estimates, so the wearing rates for passengers and other vehicle drivers are less precise than for car drivers.

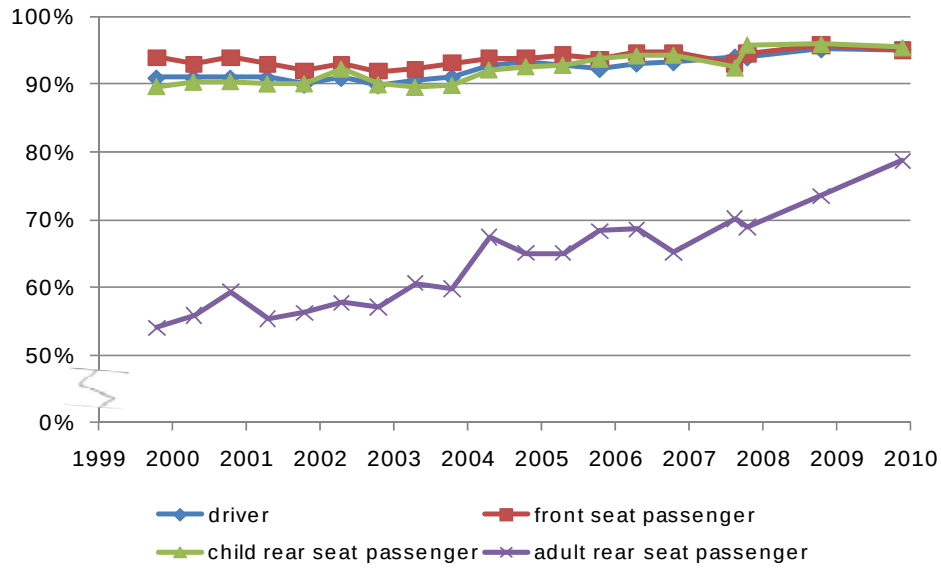
Table 3.1: Vehicle occupants observed in core seatbelt survey, weekdays (Oct-Nov 2009)

	Driver	Front seat passenger	Rear seat passenger
Car	14,601	3,744	1,452
Other vehicle[1]	3,355	624	

Car occupant wearing rates over time

The following results present seatbelt and other restraint wearing rates calculated and weighted as described in Section 2. This analysis is the same each year, and the long term trend is shown in Figure 3.1. The wearing rates of drivers, front seat passengers and child rear seat passengers has remained above 90% since 1999 and at a high level of 94-96% for the last three years, having increased steadily since 1999. The wearing rate of adult rear seat passengers is much lower, but increased to 79% in 2009.

Figure 3.1: Car occupant wearing rates by year and month of survey and seating position, weekdays



Note: points are plotted for the year and month in which the survey was carried out

[1] Includes drivers of vans, lorries, buses, coaches and minibuses, and front and rear passengers of vans and lorries

Table 3.2 shows that the overall results for car occupants have changed little since 2007. There has been a slight decrease in the wearing rate of front seat passenger (96% in 2008 to 95% in 2009), and a slight increase in the wearing rate of rear seat passengers (88% in 2008 and 89% in 2009).

Of those car occupants who were classified as unrestrained, 8% of unrestrained drivers and 9% of unrestrained passengers were wearing a seatbelt or child restraint incorrectly. Restraint use was unknown in 2% of car drivers, 6% of other vehicle drivers, 5% of car passengers and 7% of other vehicle passengers.

Car occupant wearing rates by age and sex

The wearing rates of car occupants by age and sex are shown in Figure 3.2 and Table 3.2. The wearing rates of males continue to be lower than those of females. For drivers and front seat passengers, there were differences of five per cent between male and female wearing rates in 2009. The difference between male and female rear seat passenger wearing rates was smaller.

Table 3.2: Car occupant wearing rates by year, position and sex, weekdays

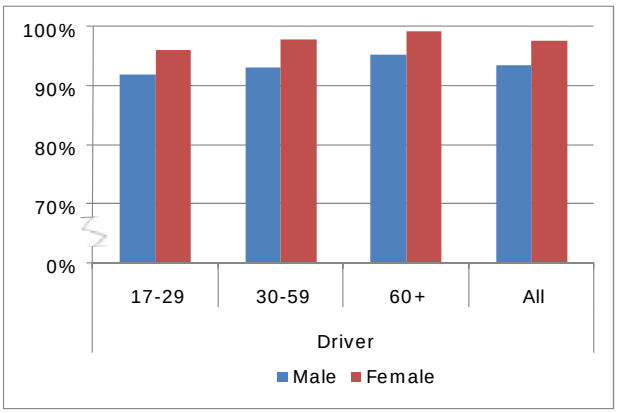
Position	Sex	October 2007 (%)	October 2008 (%)	Oct-Nov 2009 (%)	*2009 sample size*
Driver	Male	92	93	93	*8,251*
	Female	97	98	98	*6,023*
	All	94	95	95	*14,375*
Front seat passenger	Male	92	93	92	*1,136*
	Female	96	97	97	*2,317*
	All	95	96	95	*3,672*
Rear seat passenger	Male	-	88	89	*541*
	Female	-	89	90	*748*
	All	86	88	89	*1,289*

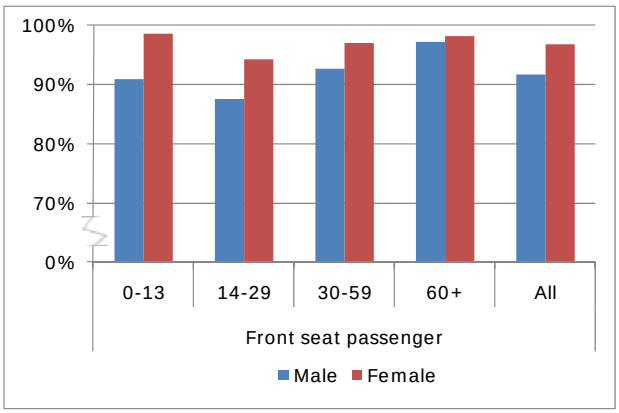
Figure 3.2 shows the same picture of male wearing rates being lower than female wearing rates for all age groups.

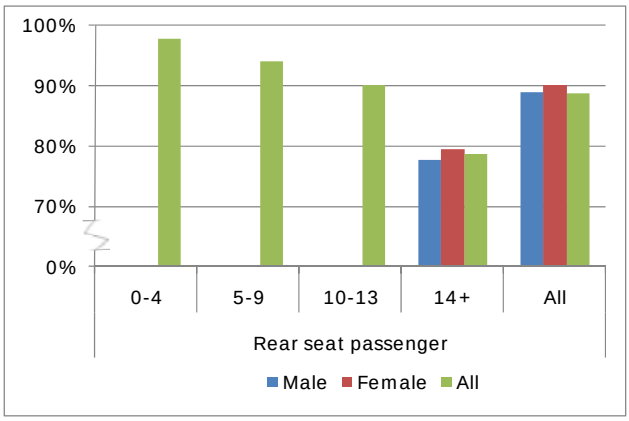
For drivers and front seat passengers, the wearing rates of adult car occupants increase as the age group increases. The wearing rate of female child front seat passengers in 2009 was higher than all front seat adult wearing rates.

For rear seat passengers the wearing rate for adults (aged 14+) was much lower than all child age groups. The wearing rate for children in the rear seat was highest for 0-4 year olds, lower for 5-9 year olds and lowest for 10-13 year olds in 2009. There were insufficient observations of child rear seat passengers to be able to produce robust wearing rates for these age groups split by sex.

Figure 3.2: Car occupant wearing rates by age, sex and position, weekdays (Oct-Nov 2009)







Child restraint use

The current legislation requires children up to 135cm in height to use the correct child restraint for their weight in the front or rear seats of cars, vans and goods vehicles with very few exceptions. Children are defined as those under 12 years of age. Restraint use by children is categorised in the survey by the use of child car seats - rear facing baby seats, forward facing child seats and booster seats and cushions. Given that observers cannot easily judge the weight of children in vehicles, they categorise children by their apparent age using the Department for Transport's[2] approximations. Those using rear facing baby seats, designed for children up to 13 kg, are considered to be in the range 0 to 9/12 months. Child seats for those 9kg to 18kg are considered to be in the range 9 months to 4 years and booster seats or cushions for those 15kg to 36kg are considered to be in the range 4 years up to 12 years or 135cm in height. Table 3.3 shows the proportion of children between 1 and 9 years old using different child car seats.

The majority (around three quarters) of 1-4 year olds were observed in child seats, although a high proportion (13% in the front seat and 10% in the rear seat) were observed using just a seatbelt.

More than half of children aged 5-9 years in the front seat were observed to be wearing a seatbelt and one fifth were using a booster seat or cushion correctly. Six per cent of front seat passengers between the age of 1 and 9 years were unrestrained.

[2] http://www.childcarseats.org.uk/law/index.htm

Two fifths of children aged 5-9 years in the rear seat were wearing a seatbelt, a quarter were restrained in a child seat and a further quarter were using a booster seat or cushion correctly. The proportion of children in the rear seat who were unrestrained was 4%.

Table 3.3: Restraint wearing rate by children in cars, by age and position, weekdays (Oct-Nov 2009)

Position	Front seat passengers		Rear seat passengers	
Child restraint	**1-4 years old (%)**	**5-9 years old (%)**	**1-4 years old (%)**	**5-9 years old (%)**
Seatbelt	13	58	10	40
Child seat	75	14	76	26
Rear facing baby seat	0	1[3]	1	1[3]
Booster seats and cushions: used properly	6	20	10	26
Booster seats and cushions: used incorrectly	0	1	0	0
Unrestrained on seats	0	5	1	5
Unrestrained on laps	6	1	2	1
Sample size	*32*	*161*	*316*	*265*

Comparing these results to 2008 (Table A.2 in Appendix A), the proportion of children aged 1-9 in child seats, booster seats or booster cushions has risen, and the proportion solely using a seatbelt decreased in 2009. However, as the number of children observed is small, these results should be treated with caution as differences may be due to random variation rather than representing real changes.

Car driver wearing rates by time of week

Eight sites were revisited at the weekend during the surveys. This was to understand the difference between wearing rates during the week and at weekends. Table 3.4 shows that at sites where a weekend survey took place, for car drivers, restraint wearing rates were observed to be two per cent higher at the weekend than during the week in 2009. A similar pattern was observed in 2008.

During the week at these sites the proportion of observed drivers who were female was 43% and this reduced to 36% at the weekend. In general the wearing rate for female drivers is higher, so this does not explain the increase in driver wearing rate at the weekend.

Table 3.4: Car driver wearing rates by year and time of week

	October 2008 (%)	**Oct-Nov 2009 (%)**	***2009 sample size***
Weekday	95	95	*4,258*
Weekend	96	97	*3,103*

[3] Rear facing baby seats are not appropriate for 5-9 year olds, so it is likely that restraint rate or age group has been wrongly classified in these cases.

Car driver wearing rates by road type

Table 3.5 shows the wearing rates of car drivers on different types of road. Major roads include single and dual carriageway A roads; minor roads include roads with a B or C number and unclassified roads. Rural and urban classifications were defined using a population based definition[4]. The wearing rate for car drivers was observed to be higher on major roads than on minor roads, and higher on rural roads than on urban roads.

Table 3.5: Car driver wearing rates by year and road type, weekdays

Area type	Road type	October 2007 (%)	October 2008 (%)	Oct-Nov 2009 (%)	*2009 sample size*
Rural	Major	-	-	97	*4,348*
	Minor	-	-	96	*2,903*
	All	95	96	97	*7,251*
Urban	Major	-	-	95	*2,147*
	Minor	-	-	93	*4,977*
	All	92	94	94	*7,124*

Car occupant wearing rates by survey area

The core seatbelt survey is based in two broad areas. Table 3.6 splits the core survey results by area and shows some small differences in wearing rates. The wearing rates were slightly higher for rear seat passengers in the Nottingham area than around Crowthorne; this contrasts with the 2008 survey where wearing rates for rear seat passengers were higher in the Crowthorne area (Broughton, 2009) and may reflect random variation in the survey results rather than a real pattern.

Table 3.6: Car occupant wearing rates by survey area and position, weekdays (Oct-Nov 2009)

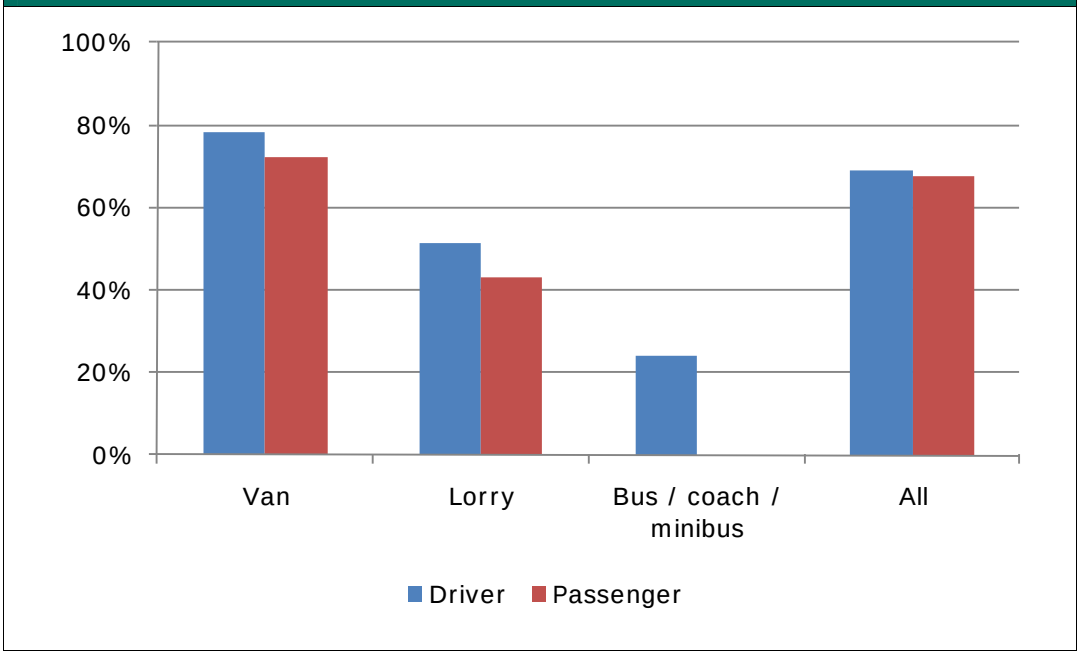
Position	Driver		Front seat passenger		Rear seat passenger	
Survey area	Crowthorne (%)	Nottingham (%)	Crowthorne (%)	Nottingham (%)	Crowthorne (%)	Nottingham (%)
Male	93	94	92	91	87	91
Female	98	97	97	97	88	91
Urban roads	94	93	94	93	82	91
Rural roads	97	97	96	96	95	91
All	95	95	95	95	88	91
Sample size	*8,929*	*5,446*	*1,960*	*1,712*	*707*	*582*

[4] Up to 2008, the rural and urban categories were defined by speed limit (built up roads with speed limits up to 40mph, and non-built up having speed limits over 40mph). For the 2009 survey, a population based definition was used with urban roads defined as those within an urban area with a population of 10 thousand or more (this is based on the 1991 Office of the Deputy Prime Minister definition of urban settlements). However for the survey sites covered this change has very little effect on the classification as urban or rural roads.

Wearing rates for other vehicle types

In addition to observations of car and taxi occupants, the survey also records the wearing rates of drivers in vans, lorries, buses, coaches and minibuses, and of passengers in vans and lorries. In 2009, the wearing rate for other vehicle drivers was observed to be 69%, and the proportion of passengers wearing restraints was 68%. The wearing rates for vans were considerably higher than those for lorries, which are in turn considerably higher than the wearing rates of bus, coach and minibus drivers. In 2008, the wearing rates observed for van drivers and passengers were 72% and 61% respectively which is lower than the results seen in 2009 (78% and 72% respectively) (Table A.3 in Appendix A).

Figure 3.3: Other vehicle occupant wearing rates by vehicle type and position, weekdays (Oct-Nov 2009)



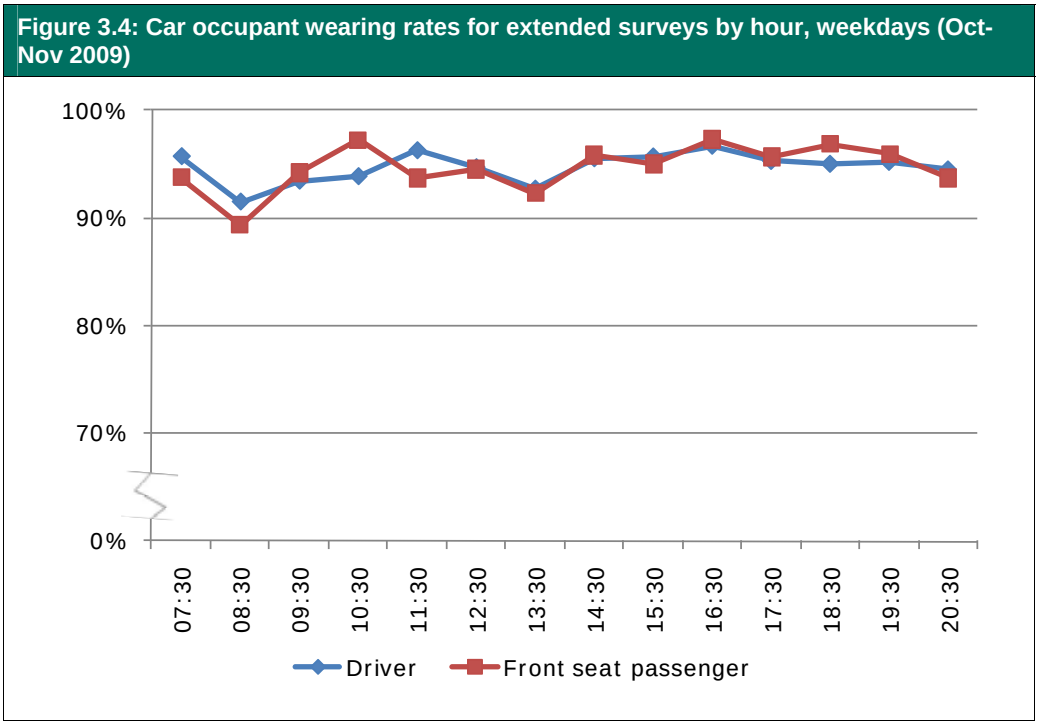
Wearing rates by time of day

In 2009, surveys at 12 sites were carried out for longer time periods in order to investigate the use of restraints later at night and earlier in the morning. Table 3.7 presents the results for those sites where extended surveys were possible, comparing results for the core survey period (08:30 - 18:00) and the extended survey period (07:30 - 08:30 and 18:00 - 21:00). Overall there was little difference between the results based on the core hours and results based on the extended period. Small differences were observed in the car rear seat passengers and other vehicle passengers; however, these results are based on small numbers and some fluctuation would be expected.

Table 3.7: Vehicle occupant wearing rates, extended survey sites, weekdays (Oct-Nov 2009)						
Vehicle	**Position**	**Sex**	**Core hours (%)**	***Sample size***	**Extended hours (%)**	***Sample size***
Car	Driver	Male	93	*3,523*	93	*6,130*
		Female	97	*2,535*	97	*4,103*
		All	95	*6,081*	95	*10,268*
	Front seat passenger		95	*1,418*	95	*2,507*
	Rear seat passenger		86	*487*	85	*752*
Other vehicle	Driver		67	*1,417*	68	*2,166*
	Passenger		70	*243*	65	*395*

Figure 3.4 shows the proportion of car drivers and front seat passengers observed wearing seatbelts by hour, at those sites where an extended survey was possible. The overall proportion varies a little during the day, in particular dropping for the second morning session (08:30 - 09:00) and the lunchtime sessions (12:30 - 13:00 and 13:30 - 14:00). Wearing rates appeared to be lower in the evening sessions (from 17:30 for drivers and 20:30 for passengers) than earlier in the afternoon.

Figure 3.4: Car occupant wearing rates for extended surveys by hour, weekdays (Oct-Nov 2009)



3.2 Scotland seatbelt survey results

Introduction and methods

In 1997, the then Scottish Office commissioned a seatbelt survey in Scotland to measure the wearing rates of car, van and taxi occupants. This survey was repeated in 2002 by Halcrow Group Ltd and the results are reported in Burns et al, 2002. Twenty one sites were selected across different regions and road types across Scotland, to represent the distribution of traffic.

In 2009, this survey was repeated to assess the current use of seatbelts by vehicle occupants in Scotland. The methodology used in the 1997 and 2002 surveys was very similar to the methodology used in the core survey for England. In 2009, the methodology was extended to include other vehicle occupants, but otherwise remained the same. However it should be noted that the previous surveys took place during the summer, whilst the 2009 survey was carried out during October. This should be borne in mind when comparing the 2009 results with earlier years.

Survey sites remained the same where possible, though some additional sites were surveyed in order to make the sites representative of traffic distributions in 2009. It should be noted that the change in survey sites has an impact on the calculation of wearing rates for some groups, in particular for rear seat passengers. Again, this should be considered when comparing results of the 2002 and 2009 surveys. Table B.2 in Appendix B shows the effect of the change in survey sites on the 2009 results.

The numbers of vehicle occupants observed in the 2009 Scotland survey are detailed in Table 3.8. Results for cars include taxi occupants and other vehicle observations are collected for drivers of buses, coaches and minibuses, as well as drivers and passengers of vans and lorries.

Table 3.8: Number of vehicle occupants observed in Scotland seatbelt survey (Oct-Nov 2009)

	Driver	Front seat passenger	Rear seat passenger
Car	9,053	2,334	575
Other vehicle[5]	2,317	497	

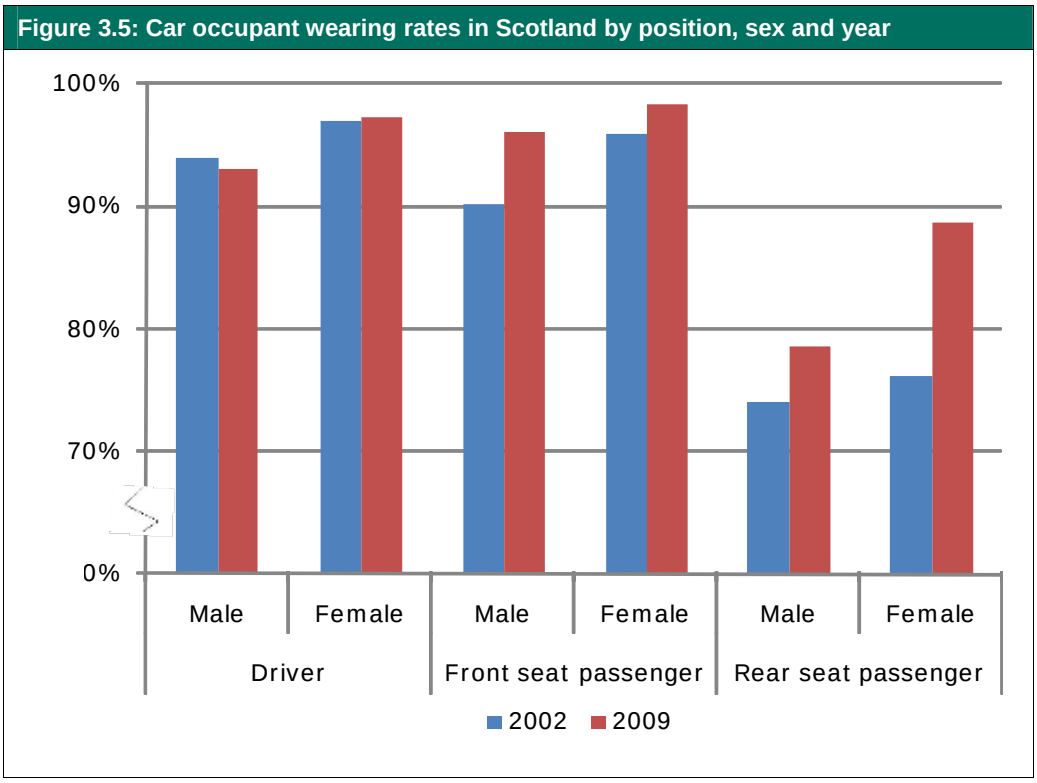
[5] Includes drivers of vans, lorries, buses, coaches and minibuses, and front and rear passengers of vans and lorries

Car occupant wearing rates: main findings

The wearing rates for drivers in Scotland were observed to be 95% in 2009, 97% for front seat passenger and 88% for rear seat passengers (Table 3.9). These are broadly similar to the rates observed in the core survey in England.

The overall results for front and rear seat passengers suggest an increase since the previous two surveys (in 1997 and 2002), but remained similar for drivers. Figure 3.5 shows the wearing rates for car occupants in Scotland were consistently higher for females than males in both the 2002 and 2009 surveys. The figures suggest there has been a drop in the wearing rate for male drivers between 2002 and 2009 - the only group where the wearing rate has decreased.

Figure 3.5: Car occupant wearing rates in Scotland by position, sex and year



Note: Comparisons between 2002 and 2009 should be made with caution as some of the observations for 2009 were collected at different survey sites to 2002 and this has an impact on the calculation of wearing rates for some groups, in particular for rear seat passengers. Table B.2 in Appendix B shows the effect of the change in survey sites on the 2009 results.

Car occupant wearing rates by age group

Figures suggest that the wearing rates of car occupants observed in the Scotland have increased for all age groups since the last survey in 2002, except 30-59 year old drivers.

Large increases have been observed in wearing rates of child passengers; child front seat passengers' wearing rates in 2009 (97%) returned to a level similar to that found in the 1997 survey (95%) after dropping to 89% in the 2002 survey, though the sample size for child passengers is relatively small.

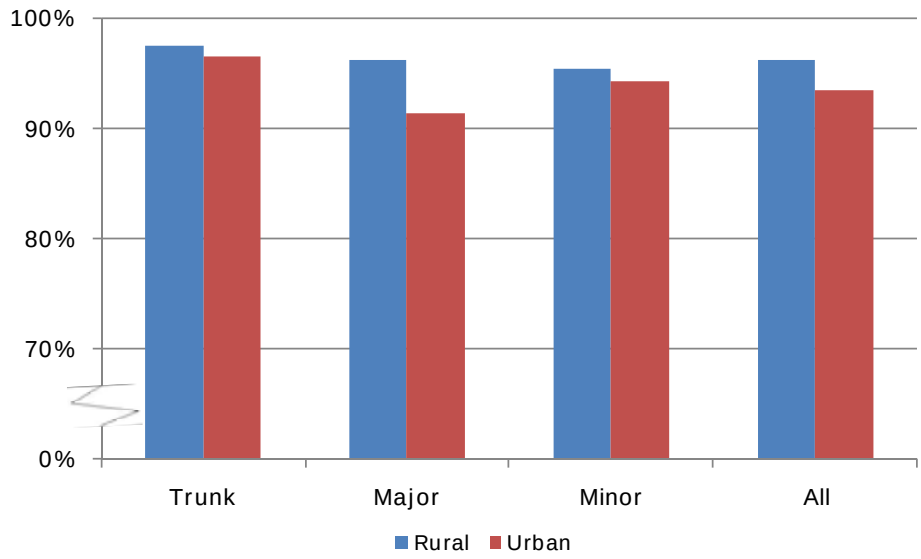
Table 3.9: Car occupant wearing rates in Scotland, by age, position and year, weekdays

Position	Age	Spring 1997 (%)	Spring 2002 (%)	October 2009 (%)	*2009 sample size*
Driver	17-29	91	94	96	*2,466*
	30-59	94	95	94	*4,637*
	60+	97	96	96	*1,590*
	All	94	95	95	*8,786*
Front seat passenger	0-13	95	89	97	*208*
	14-29	-	90	97	*734*
	30-59	-	95	98	*739*
	60+	-	97	98	*555*
	14+	92	94	98	*2,028*
	All	92	91	97	*2,295*
Rear seat passenger	0-4	95	89	98	*152*
	5-13	74	75	95	*153*
	14+	55	71	75	*202*
	All	71	78	88	*535*

Car driver wearing rates by road type

Wearing rates for car drivers varied with road type in Scotland. In particular Figure 3.6 shows that wearing rates were higher on Trunk roads[6] than on major roads (non trunk A roads), and wearing rates on urban minor roads were higher than those on urban major roads. Overall, wearing rates were higher for car drivers in Scotland on rural roads than urban roads, and this is consistent with the findings of the core survey in England.

Figure 3.6: Car driver wearing rates in Scotland by road type, weekdays (Oct 2009)

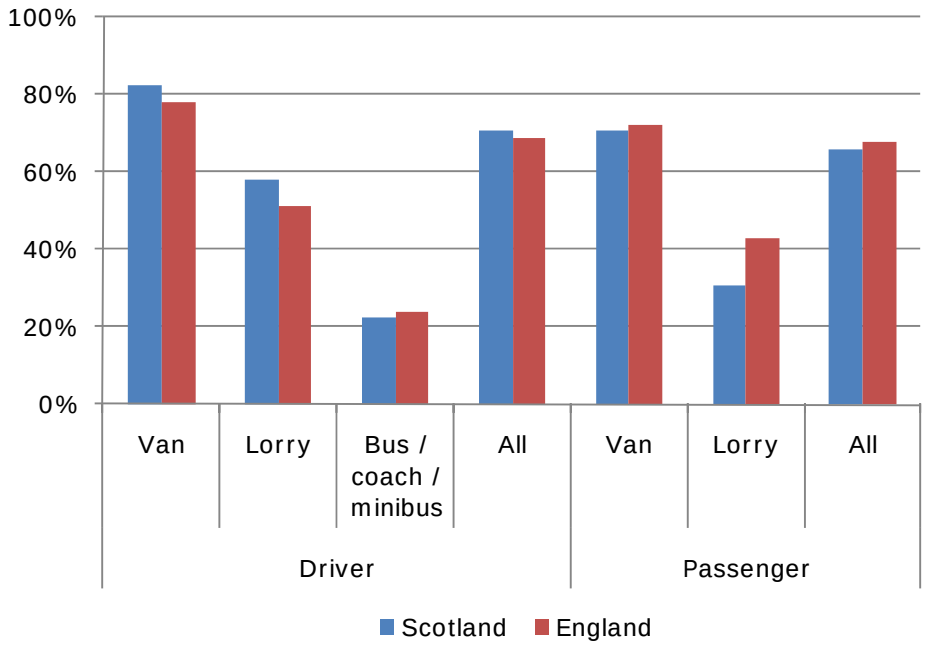


Wearing rates for other vehicle occupants

In 2009, the survey in Scotland observed the restraint use of drivers in vans, lorries, buses, coaches and minibuses, and of passengers in vans and lorries. Figure 3.7 compares these rates with the rates found in the core English survey. Overall, the wearing rates of other vehicle drivers were slightly higher in Scotland than England, and of passengers were slightly lower in Scotland than England. The wearing rate for van occupants was higher than for lorry drivers and passengers in 2009. The wearing rate of bus, coach and minibus drivers was considerably lower.

[6] Trunk roads are major roads that are managed by the Highways Agency in England and Transport Scotland in Scotland. Major roads are separated by trunk and non trunk in the Scotland survey to be consistent with previous surveys in Scotland.

Figure 3.7: Other vehicle occupant wearing rates in Scotland and English core survey by vehicle type, weekdays (Oct 2009)



Wearing rates by time of day

Surveys at 10 sites in Scotland were extended. Table 3.10 shows that at these sites, the overall results comparing the core survey hours (08:30 - 18:00) and the extended survey period (07:30 - 21:00) gave very similar results. Slight differences were observed for front seat passengers in cars (lower for the extended hours than core survey hours) and for passengers of other vehicles (higher for the extended hours than the core survey hours).

Table 3.10: Vehicle occupant wearing rates in Scotland, for extended surveys, by vehicle type and sex, weekdays (Oct 2009)

Vehicle	Position	Sex	Core hours (%)	*Sample size*	Extended hours(%)	*Sample size*
Car	Driver	Male	92	*2,312*	92	*3,525*
		Female	97	*1,567*	97	*2,371*
		All	94	*3,968*	94	*6,049*
	Front seat passenger	All	98	*1,080*	97	*1,660*
	Rear seat passenger	All	90	*256*	90	*387*
Other vehicle	Driver	All	70	*1,017*	70	*1,554*
	Passenger	All	70	*226*	71	*360*

3.3 Gloucester seatbelt survey results

Surveys in additional areas in England were carried out in the summer in 1998 to 2007. The survey in 2008 consisted only of the core survey in the Crowthorne and Nottingham areas. In 2009, an additional survey was carried out around Gloucester in parallel with the core survey. The survey observed 8,754 vehicle occupants, as shown in Table 3.11.

Table 3.11: Vehicle occupants observed in Gloucester seatbelt survey, weekdays (Oct-Nov 2009)

	Driver	Front seat passenger	Rear seat passenger
Car	5,357	1,434	421
Other vehicle[7]	1,289	253	

Car occupant wearing rates by sex: comparison with core survey

Overall, wearing rates for car occupants in Gloucester were slightly higher than those found in the core survey (Table 3.12In Gloucester, the difference between wearing rates of male and female car drivers is smaller than in the core survey, as the proportion of male drivers observed wearing restraints is higher (96%) than in the core survey (93%). For front seat passengers, the proportion of males wearing restraints is slightly higher than in the core survey. The wearing rate of females was the same. A lower wearing rate for male rear seat passengers was observed in Gloucester compared with the core survey (84% compared with 89%), although only 145 male rear seat passengers were observed in the Gloucester survey.

Table 3.12: Car occupant restraint wearing rates, in Gloucester and the core survey by sex and position, weekdays (Oct-Nov 2009)

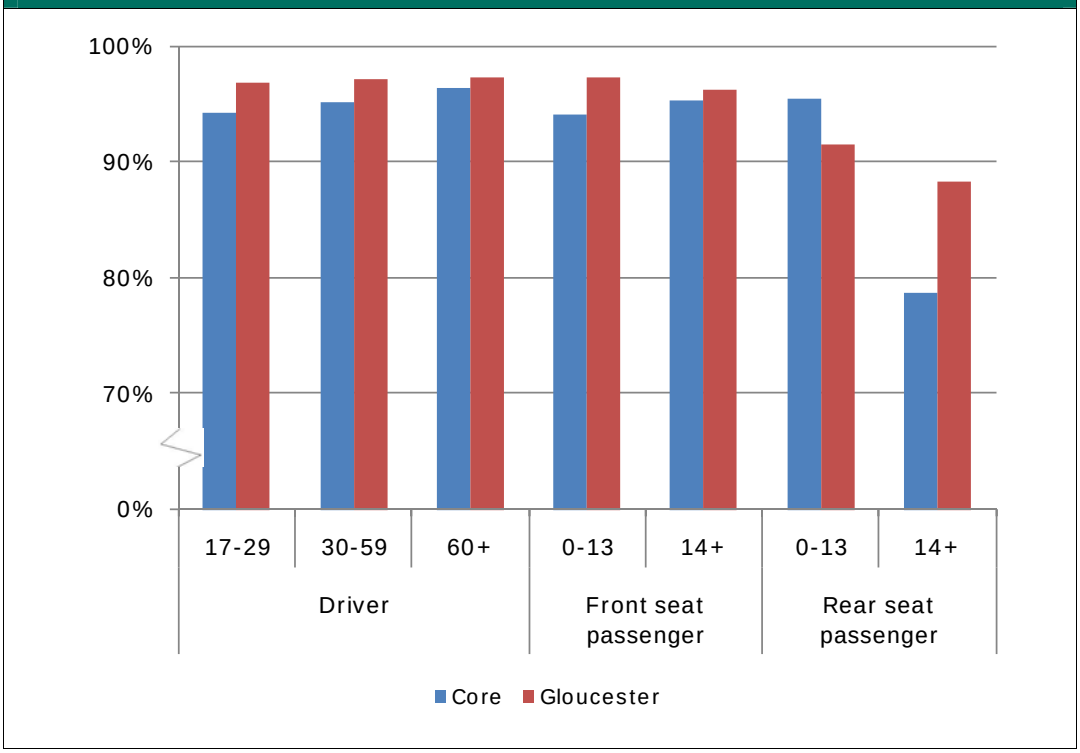
Position	Sex	Core (%)	Gloucester (%)	*Gloucester sample size*
Driver	Male	93	96	*3,032*
	Female	98	98	*2,250*
	All	95	97	*5,304*
Front seat passenger	Male	92	93	*405*
	Female	97	97	*918*
	All	95	96	*1,419*
Rear seat passenger	Male	89	84	*145*
	Female	90	94	*255*
	All	89	90	*400*

[7] Includes drivers of vans, lorries, buses, coaches and minibuses, and front and rear passengers of vans and lorries

Car occupant wearing rates by age: comparison with core survey

Figure 3.8 shows the wearing rate of car occupants in Gloucester was higher than that found in the core survey, for all age groups (except child rear seat passengers). The proportion of adult rear seat passengers wearing seatbelts in Gloucester was considerably higher than those in the core survey. The proportion of drivers wearing restraints was similar across the three age groups, varying less with age than in the core survey.

Figure 3.8: Car occupant wearing rates in Gloucester and the core survey by position and age, weekdays (Oct-Nov 2009)



Car driver wearing rates by road type: comparison with core survey

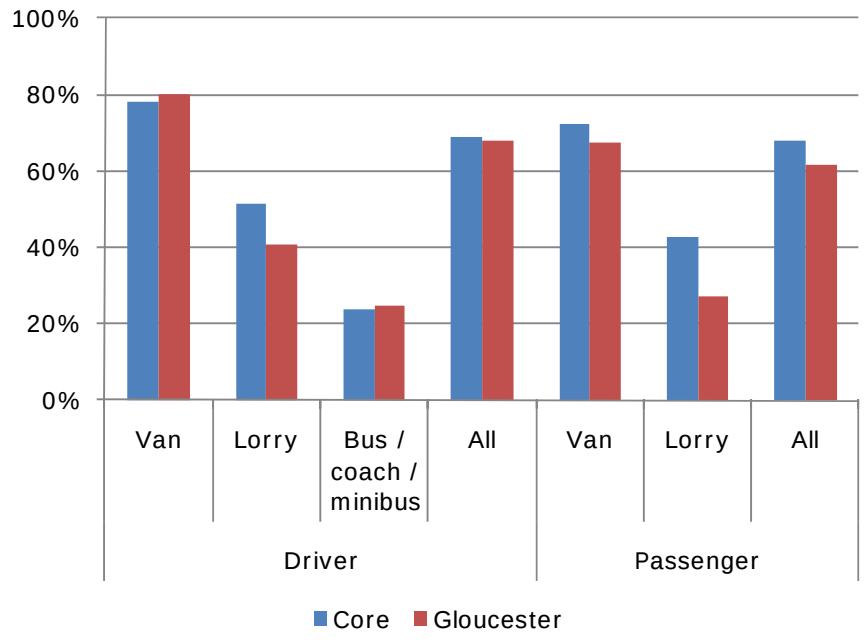
The wearing rates of car drivers by road type are shown in Figure 3.9. In Gloucester, the survey observed that proportionately more car drivers wear restraints on minor roads than on major roads. Unlike the core survey, the proportion of drivers wearing restraints on urban roads is the same as the proportion wearing restraints on rural roads (97%).

Figure 3.9: Car driver wearing rates in Gloucester and the core survey by road type, weekdays (Oct-Nov 2009)

Wearing rates for other vehicle types: comparison with core survey

Car occupant wearing rates were slightly higher in Gloucester than in the core survey, but in contrast, the wearing rates for other vehicle occupants were slightly lower. In particular, the proportion of lorry drivers and passengers wearing restraints was much lower in Gloucester than in the core survey (Figure 3.10). The variation by vehicle type that was observed in Gloucester was similar to the variation in the core survey and Scotland survey.

Figure 3.10: Other vehicle occupant wearing rates in Gloucester and the core survey by vehicle type, weekdays (Oct-Nov 2009)



3.4 Estimated national wearing rates

The core survey based around Crowthorne and Nottingham provides comparable annual results to investigate trends in seatbelt wearing rates. These results are not necessarily nationally representative so need to be combined with results from other parts of the country to estimate national wearing rates across England. The surveys in additional areas across England (Gloucester in 2009) between 1998 and 2009 allow an adjustment to the baseline rate (from the core survey) to be made, assuming that relative rates between the additional areas and the core survey remain constant. The method is presented in detail in Broughton, 2008.

Table 3.13 shows the results from the core survey for car occupants, and the adjustment due to the difference between the core survey results and the respective additional DfT survey results since 1988. The adjusted rate is the result that would be expected if the survey was nationally representative[8].

For drivers, the overall rate in the core survey underestimates the national rate by 0.5%. Urban wearing rates were underestimated by 1.4%. For front seat passengers, the overall rate is underestimated by 0.5%, with the biggest change being in urban roads where the underestimate was just less than one per cent. For rear seat passengers, the majority of core survey results overestimated the national wearing rates. In particular, the national wearing rate of child rear seat passengers was overestimated by 2.7% in the core survey; however the national wearing rate of adult rear seat passengers was underestimated by 4.2%.

Table 3.13: Estimated national wearing rates (Oct-Nov 2009)

Position	Wearing rate	Overall	Male (%)	Female (%)	Urban (%)	Rural (%)	Age 0-13 (%)	Age 14+ (%)
Driver	Baseline	95.2	93.5	97.6	93.5	96.8		
	Adjustment	0.5	0.9	0.1	1.4	-0.5		
	Adjusted	95.6	94.3	97.6	94.9	96.3		
Front seat passenger	Baseline	95.0	91.6	96.8	93.7	96.4		
	Adjustment	0.5	0.6	0.4	0.9	0.2		
	Adjusted	95.5	92.1	97.2	94.6	96.5		
Rear seat passenger	Baseline	89.1	88.5	89.5	85.9	93.2	95.6	78.7
	Adjustment	-0.4	-0.6	-0.3	-0.1	-1.0	-2.7	4.2
	Adjusted	88.7	87.9	89.2	85.8	92.2	92.9	82.9

[8] It should be noted that London rates are not included in this calculation and the seatbelt wearing rates in London are significantly lower than elsewhere in England (Narine et al, 2009).

3.5 School seatbelt survey results

In 2009 a further additional survey was carried out at 12 sites near schools in London. Junctions near four infant, four primary and four secondary schools were surveyed for two periods on a weekday. Surveys were undertaken in the morning, before school started, and in the afternoon, at 'home time'. Sample sizes were considerably smaller for this survey than for the other seatbelt surveys due to shorter survey periods, which means that results are less precise. The methodology used to carry out this survey was the same as the core survey, although survey teams concentrated on car occupants. As surveys have to be carried out at suitable junctions to get robust results, not all of the cars surveyed were likely to have been travelling to or from school.

Wearing rates in London are lower than the national wearing rates (Narine et al, 2009), so these results are not comparable with the other survey results. Overall wearing rates were observed to be 76% for drivers, 74% for front seat passengers and 68% for rear seat passengers. The wearing rates for male drivers and front seat passengers were considerably lower than for female drivers and front seat passengers (Table 3.14).

Figure 3.11 shows the wearing rates for car drivers, front seat passengers, child rear seat passengers (aged 0-13 years) and adult rear seat passengers (aged 14+) near the three types of school surveyed. Consistent with the other surveys, drivers, front seat passengers and child rear seat passengers have similar wearing rates, and adult rear seat wearing rates are considerably lower.

Of interest are the differences between the wearing rates near infant and secondary schools compared with primary schools. In particular the wearing rate of children in the rear seat was observed to be much lower at sites near primary schools than the other two types of schools. As the sample sizes are small and the junctions surveyed were not all very close to the schools, it was not possible to be sure whether this difference was due to the type of school or site specific factors such as road type or area of London.

Figure 3.11: Car occupant wearing rates near schools in London, weekdays (Nov 2009)

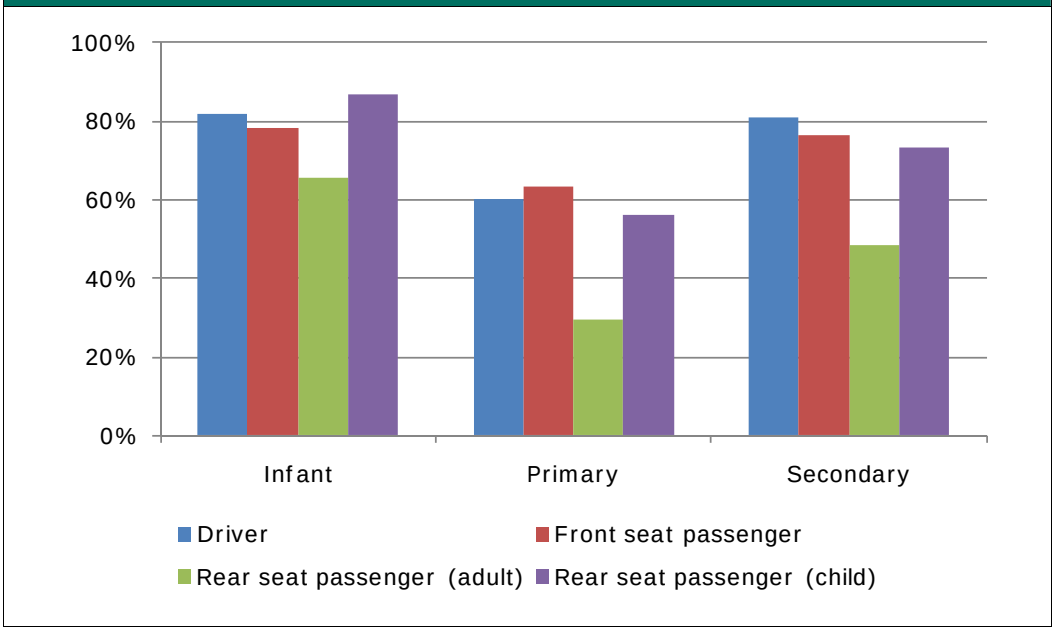


Table 3.14: Car occupant restraint wearing rates, near schools in London by sex and position, weekdays (Nov 2009)						
Sex	**Driver (%)**	***Sample size***	**Front seat passenger (%)**	***Sample size***	**Rear seat passenger (%)**	***Sample size***
Male	69	*3,377*	64	*503*	69	*166*
Female	91	*1,528*	85	*451*	67	*228*
All	76	*4,931*	74	*1,021*	68	*513*

4. Mobile phone survey results

4.1 Core mobile phone survey results

The core mobile phone survey, recording hand-held and hands free mobile phone use by drivers, has been repeated each year since 2002. The 2009 survey was carried out in October, and 41,056 car drivers and 9,085 van and lorry drivers were surveyed in moving traffic on a sample of different road types across the South East of England. It is not possible to observe hands free mobile phone use accurately on high speed roads, so hands free usage rates on motorways are not available.

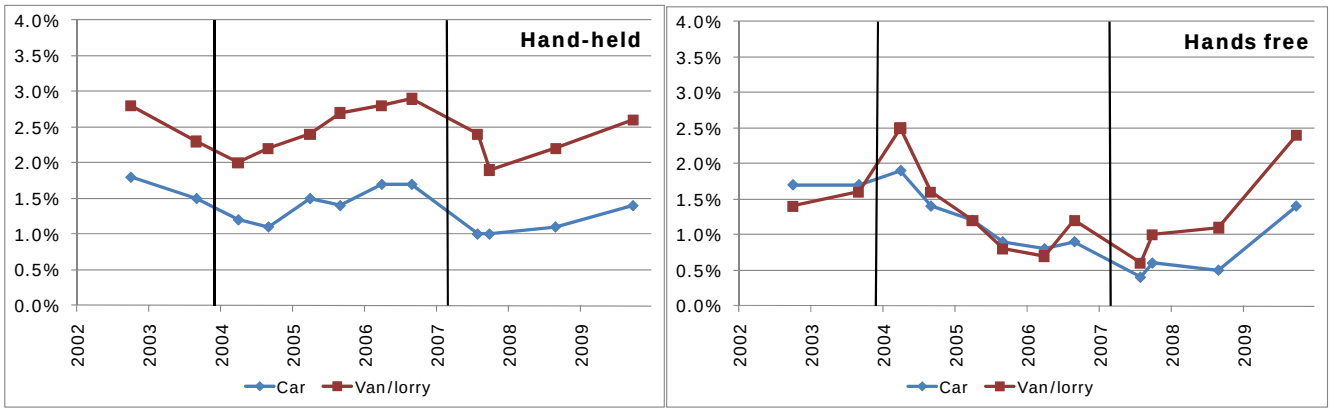
Table 4.1: Number of vehicle drivers observed in core mobile phone survey (Oct 2009)

Vehicle type	All roads	Excluding motorways
Car	41,056	35,305
Other vehicle (van/lorry)	9,085	7,497

Driver mobile phone use over time

The trend in hand-held mobile phone use has responded to changes in legislation on the use of hand-held mobile phones whilst driving. In December 2003, the use of a hand-held mobile phone whilst driving was banned, and the penalties were increased in February 2007. Surveys immediately after these changes show a decrease in hand-held mobile phone use. After these time points, the proportion of drivers using a hand-held mobile phone has increased. The use of hands free mobile phones appears to have decreased as hand-held use has increased, and vice versa, except in the last three years where an increase has been observed for both types of phone.

Figure 4.1: Trend in vehicle driver hand-held (left) and hands free (right) mobile phone use, by vehicle type, weekdays.



Note: Vertical lines indicate legislative changes (December 2003 and February 2007). Points are shown for the year and the month in which the survey was carried out.

Driver mobile phone use by vehicle and road type

The overall proportion of car (Table 4.2) and van and lorry (Table 4.3) drivers using a hand-held or hands free mobile phone was observed to be higher for all road types in 2009 than in 2007 and 2008. The use of hands free mobile phones was observed to have increased substantially from 0.5% in 2008 to 1.4% in 2009 overall and, in particular, from 0.2% in 2008 to 1.8% in 2009 on rural roads, and 0.4% to 1.6% on minor roads.

This change is likely to have been affected by random variation given the difficulty in observing hands free mobile phone use (see Table 4.5), but also indicates some increase in the proportion of drivers using hands free phones.

Table 4.2: Car driver mobile phone use, by road type, weekdays

Mobile type	Hand-held			Hands free			*Sample size*
Road type	**October 2007 (%)**	**September 2008 (%)**	**October 2009 (%)**	**October 2007 (%)**	**September 2008 (%)**	**October 2009 (%)**	***2009***
Overall	1.0	1.1	1.4	0.6	0.5	1.4	*41,056*
Motorway	0.7	0.8	1.4	-	-	-	*5,751*
A dual carriageway	1.0	0.9	1.6	0.5	0.5	1.0	*7,869*
A single carriageway	1.3	1.3	1.4	0.7	0.7	1.4	*11,470*
Minor	1.0	1.0	1.4	0.4	0.4	1.6	*15,966*
Rural	1.0	1.1	1.4	0.4	0.2	1.8	*18,779*
Urban	0.9	1.0	1.5	0.7	0.7	1.0	*16,526*

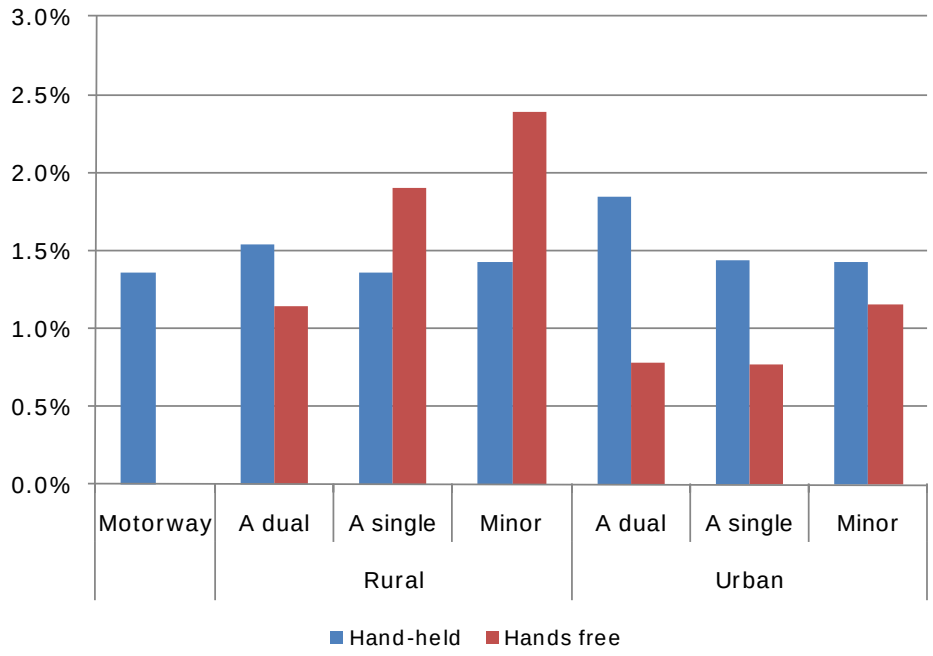
The proportion of van and lorry drivers using hand-held and hands free mobile phones increased in 2009. Overall, hands free use was observed to double in 2009 compared with 2008 overall (from 1.1% to 2.4%), on single carriageway A roads (from 0.9% to 2.3%) and on minor roads (from 1.4% to 3.1%). A large increase similar to that seen for car drivers on rural roads was also observed (from 0.4% in 2008 to 2.3% in 2009).

Table 4.3: Other vehicle driver mobile phone use, by road type, weekdays

Mobile type	Hand-held			Hands free			*Sample size*
Road type	**October 2007 (%)**	**September 2008 (%)**	**October 2009 (%)**	**October 2007 (%)**	**September 2008 (%)**	**October 2009 (%)**	***2009***
Overall	1.9	2.2	2.6	1.0	1.1	2.4	*9,085*
Motorway	1.3	1.7	2.0	-	-	-	*1,588*
A dual carriageway	2.2	2.1	2.9	1.3	1.2	1.4	*2,414*
A single carriageway	2.5	2.2	3.1	1.1	0.9	2.3	*2,426*
Minor	1.6	2.7	2.6	0.8	1.4	3.1	*2,657*
Rural	1.7	2.1	2.5	0.6	0.4	2.3	*3,796*
Urban	2.3	2.4	2.8	1.8	1.7	2.5	*3,701*

Figure 4.2 combines road type and area type and shows that the difference in hand-held usage rates for car drivers on rural and urban roads is mostly due to the difference between rural and urban dual carriageway A roads (1.5% on rural and 1.8% on urban A dual carriageways). For hands free mobiles, the usage rates on all types of urban roads were considerably lower than on rural roads. The usage rate of hand-held phones on motorways is similar to that on rural and urban single carriageway A roads.

Figure 4.2: Car driver mobile phone use, by road type and area type, weekdays (Oct 2009)



Driver mobile phone use by time of day and week

Figure 4.3 shows the mobile phone usage rates of car drivers observed on all road types across the day (excluding motorways for hands free). There is a clear drop in the proportion of drivers observed using hand-held and hands free mobile phones in the late morning period (11:30-12:00) after an increase from the early morning session (07:30 - 08:00). There were no observations from 12:30 to 13:00.

Six sites were revisited at the weekend to see whether mobile phone usage differed from usage during the week. Table 4.4 shows the usage rates at the weekend and during the week at sites where weekend surveys were carried out. The 2009 results show that usage rates of hand-held and hands free mobile phones were observed to be higher during the week for car drivers and van and lorry drivers; this pattern was the same in 2008. In particular, the proportion of car drivers using hand-held mobile phones was considerably higher during the week (2.1%) than at the weekend (0.9%) in 2009.

Figure 4.3: Car driver mobile phone use, by time of day, weekdays (Oct 2009)

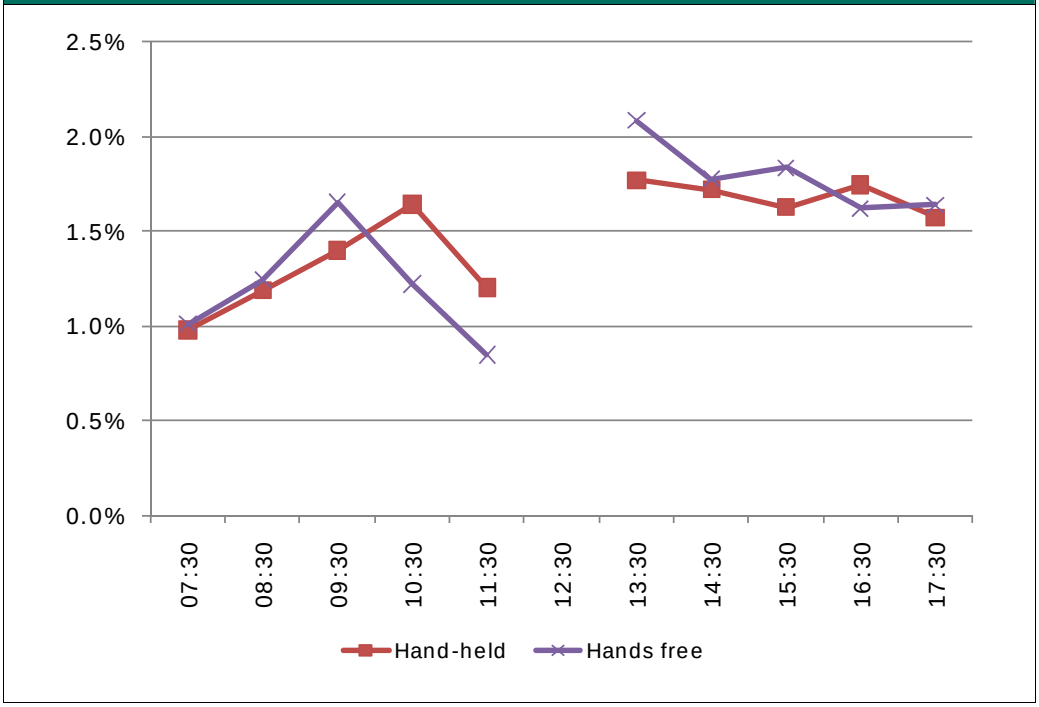


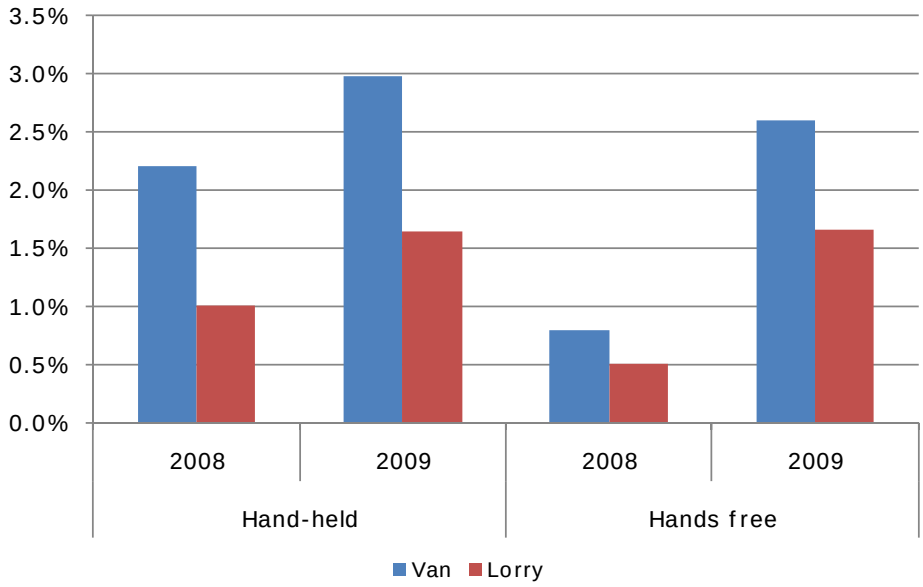
Table 4.4: Vehicle driver mobile phone use, by time of week and vehicle type (6 sites where weekend survey carried out)

	Mobile	Hand-held		Hands free		*Sample size*
Vehicle	**Time of week**	**September 2008 (%)**	**October 2009 (%)**	**September 2008 (%)**	**October 2009 (%)**	***2009***
Car	Weekday	0.9	2.1	0.5	1.5	*9,630*
	Weekend	0.6	0.9	0.1	1.0	*9,047*
Van & lorry	Weekday	2.1	3.7	0.6	2.9	*1,884*
	Weekend	2.6	3.0	0.5	1.2	*931*

Driver mobile phone use: van and lorry drivers

Figure 4.4 shows the usage rates of van and lorry drivers separately. The hand-held mobile phone rate for van drivers (3.0% in 2009) was approximately double that of lorry drivers (1.6% in 2009), and a similar pattern was found in 2008. Use of hands free phones was also considerably lower for lorry drivers than van drivers in 2008 and 2009.

Figure 4.4: Other vehicle driver mobile phone use, by vehicle type, weekdays



Comparing mobile phone results from the mobile phone survey and seatbelt survey

The core seatbelt survey (described on page 9) also collects information about the drivers' use of mobile phones. This survey is based on stationary traffic on A roads and minor roads. The mobile phone survey includes moving traffic on all road types. For the purposes of this comparison, results from motorways have been excluded.

The two surveys are not directly comparable due to the difference in sites and methodologies. Drivers' phone use whilst stationary at a junction may not be representative of their general use; however, it is expected that the patterns should be broadly similar, and if not, this suggests the sort of random variation that should be taken into account when interpreting the mobile phone results.

Table 4.5 compares the usage rates of mobile phones by car drivers in the two different surveys. In 2009, the use of hand-held and hands free mobile phones was observed to be higher for all road types in the mobile phone survey than the seatbelt survey. The difference in the use of hand-held rates is small, with less than 0.5% difference overall and for most road types. This is similar to 2008, although the rates in the seatbelt survey were slightly higher than the rates in the mobile phone survey.

This may be due to the different sites surveyed or due to the mobile phone survey team having the additional help of an electronic device to alert them to mobile phone use. Although the survey teams were given the same training and methodologies to follow in 2008 and 2009, it is possible that these differences are due to differences in survey techniques, for example in the use and interpretation of the electronic device.

The use of hands free mobile phones reported in the seatbelt survey was lower than the mobile phone results in 2009, but the opposite was true in 2008. In particular, the usage rates of hands free mobile phones on rural roads were observed to be 1.8% in the mobile phone survey and 0.3% in the seatbelt survey in 2009. In 2008, the proportion of car drivers observed using a hands free mobile phone was 0.2% in the mobile phone survey and 1.2% in the seatbelt survey. There is no known particular reason for these differences other than those discussed above, which illustrates the care that should be taken in interpreting small changes year by year in mobile phone usage rates.

Table 4.5: Car driver mobile phone use, by survey type and road type, weekdays (exc. motorways)

	Survey	**2008**		**2009**		***2009 sample size***	
Mobile	**Road type**	**SB survey (%)**	**MP survey (%)**	**SB survey (%)**	**MP survey (%)**	***SB survey (%)***	***MP survey (%)***
Hand-held	Overall	1.3	1.1	1.0	1.5	*14,601*	*35,305*
	Major	1.2	1.1	1.0	1.5	*6,564*	*19,339*
	Minor	1.4	1.0	1.1	1.4	*8,037*	*15,966*
	Rural	1.0	1.1	0.8	1.4	*7,411*	*18,779*
	Urban	1.7	1.0	1.3	1.5	*7,190*	*16,526*
Hands free	Overall	1.0	0.5	0.5	1.4	*14,601*	*35,305*
	Major	1.2	0.6	0.5	1.3	*6,564*	*19,339*
	Minor	0.7	0.4	0.4	1.6	*8,037*	*15,966*
	Rural	1.2	0.2	0.3	1.8	*7,411*	*18,779*
	Urban	0.8	0.7	0.6	1.0	*7,190*	*16,526*

4.2 Bristol mobile phone survey results

A second mobile phone survey is carried out in an additional area in order to capture some of the variation in mobile phone use across England. In 2009, 64,821 cars and 15,062 other vehicles were surveyed across a wide area centred on Bristol.

Car driver mobile phone use by road type: comparison with core survey

Table 4.6 compares the overall results by road type for Bristol with the results from the core survey. Overall the use of hand-held and hands free phones was observed to be lower in Bristol than in the core survey. The overall level of hands free use was observed to be 0.8% of car drivers in Bristol, and 1.4% in the core survey. For all road types, and areas (rural and urban) the use of hand-held phones was observed to be approximately 0.5% lower in Bristol than in the core survey in 2009.

Table 4.6: Car driver mobile phone use, in Bristol by road type, weekdays (Oct 2009)

Mobile	**Hand-held**		**Hands free**		***Sample size***
Road type	**Bristol (%)**	**Core (%)**	**Bristol (%)**	**Core (%)**	***Bristol***
Overall	0.9	1.4	0.8	1.4	*64,821*
Motorway	0.9	1.4	-	-	*14,875*
A dual carriageway	1.2	1.6	1.3	1.0	*8,545*
A single carriageway	0.8	1.4	0.7	1.4	*25,283*
Minor	0.8	1.4	0.6	1.6	*16,118*
Rural	1.0	1.4	0.9	1.8	*32,296*
Urban	0.7	1.5	0.7	1.0	*17,650*

Car driver mobile phone use by time of week: comparison with core survey

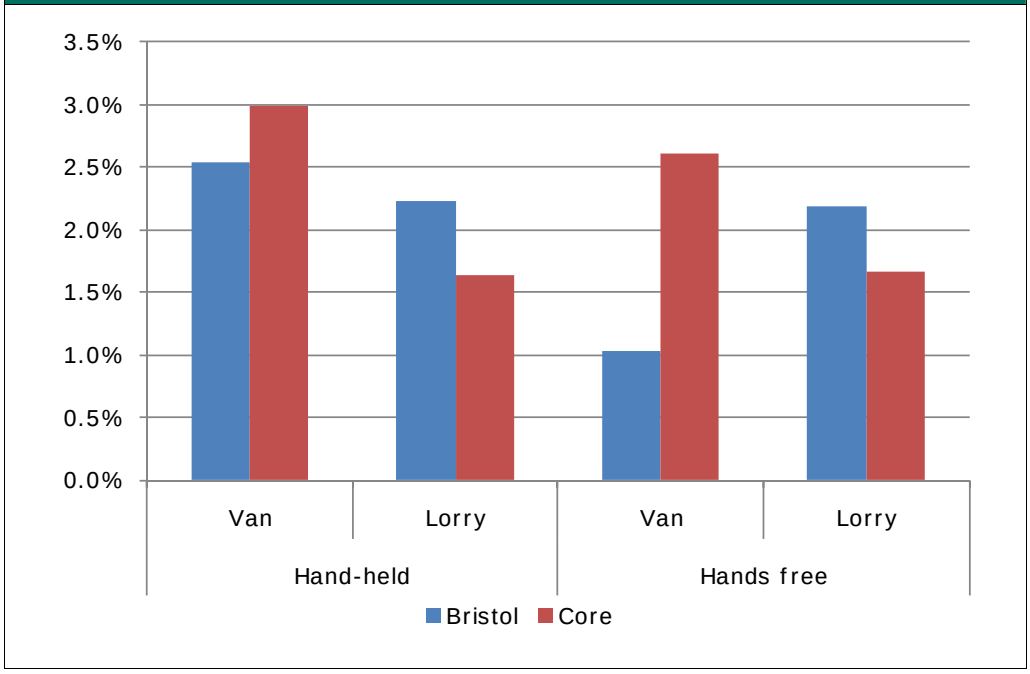
In Bristol, at sites where there was a weekend survey, the level of use of a hand-held mobile phone did not differ at the weekend from the level during the week (0.8%). A higher proportion of car drivers were observed using a hands free mobile phone during the week (0.9%) than at the weekend (0.5%), a pattern which is similar to that seen in the core survey.

Table 4.7: Car driver mobile phone use, in Bristol by time of week for sites where a weekend survey was carried out (Oct 2009)					
Mobile	**Hand-held**		**Hands free**		***Sample size***
Time of week	**Bristol (%)**	**Core (%)**	**Bristol (%)**	**Core (%)**	***Bristol***
Weekday	0.8	2.1	0.9	1.5	*24,497*
Weekend	0.8	0.9	0.5	1.0	*10,112*

Driver mobile phone use by van and lorry drivers: comparison with core survey

The pattern of mobile phone use by van and lorry drivers in Bristol was different. Proportionately more van drivers were observed using a hand-held (2.5%) than a hands free mobile phone (1.0%). The mobile phone rate by lorry drivers was observed to be the same for hand-held and hands free mobile phones (2.2%). This is similar to the pattern of other vehicle drivers' use in the core survey.

Figure 4.5: Other vehicle driver mobile phone use in Bristol, by vehicle type, weekdays (Oct 2009)



5. Conclusions

5.1 Seatbelt surveys

Core English seatbelt survey

The core seatbelt survey is based at sites around Crowthorne and Nottingham. Results in 2009 were based on observations of 14,601 car drivers, 3,744 front seat and 1,452 rear seat passengers in cars, 3,355 other vehicle drivers (including vans, lorries, buses and coaches) and 624 passengers in vans and lorries.

The long term trend shows that wearing rates have remained at 90% and above for at least 10 years for drivers, front and child rear seat passengers in cars, and over 94% for these groups in the last three years. The wearing rate of adult rear seat passengers is much lower, at 79% in 2009, but has increased steadily and from 73% in 2008.

Car driver wearing rates have consistently been approximately five per cent higher for females than males since 2007, highest for older drivers (60+ years) and lowest for young drivers (17-29 years). Car drivers driving on major roads (96%) and rural roads (97%) were observed to have higher wearing rates than those observed on minor (94%) and urban roads (94%) in 2009, similar to patterns observed in 2007 and 2008.

The wearing rates of front and rear seat car passengers were also higher for females than males (97% compared with 92% in the front seat and 90% compared with 89% in the rear seat). Rear seat passengers aged 0-4 years had the highest wearing rate of all rear seat passengers (98%) followed by 5-9 year olds (94%), 10-13 year olds (90%) and adults (79%).

The survey teams record detailed information about child car seat use in order to track the use of appropriate car seats by children. Despite legislation introduced in 2007 to ensure children are using an appropriate car seat, 58% of 5-9 year old front seat passengers, and 40% of 5-9 year old rear seat passengers were observed using a seatbelt and no car seat. Three quarters of 1-4 year olds were observed in a child seat, and around 3% were observed unrestrained. The proportion using just a seatbelt was lower in 2009 than in 2008, and the proportion of 1-4 year olds using a child seat and the proportion of 5-9 year olds using a child seat or booster seat or cushion increased.

Compared with car occupant wearing rates, other vehicle drivers and passengers were observed to be wearing seatbelts less often. In 2009, 78% of van drivers, 51% of lorry drivers and 24% of bus, coach or minibus drivers were correctly restrained.

Comparing surveys during core hours (08:30 - 18:00) and surveys over the extended period (07:30 - 21:00) has shown little difference, suggesting that wearing rates do not change substantially in the evening or early morning. Comparing the results from the new, more representative, selection of sites with the set of sites visited in previous years also shows very little difference, suggesting that the results obtained in 2008 and 2009 are comparable despite a change of some of the sites.

Scotland seatbelt survey

The Scotland survey results are based on observations of 9,053 car drivers, 2,334 front and 575 rear seat passengers, 2,317 other vehicle drivers and 497 van and lorry passengers.

Wearing rates for car drivers have remained at the level observed in the previous survey in 2002 (95%), although wearing rates for male drivers have dropped from 95% in 2002 to 93% in 2009. In 2009, car drivers in the middle age group (30-59 years) had the lowest wearing rate (94% compared with the other age groups at 96%). Across road types, the lowest rates were observed on urban major roads (91%), the highest were observed on rural trunk roads (97%).

Proportionately more car front seat passengers were observed to be wearing seatbelts in 2009 (97%) than 2002 (91%). In the rear seat, child car occupants were observed to have a much higher wearing rate in 2009 than in 2002 (89% to 98% for 0-4 year olds and 75% to 95% for 5 - 13 year olds).

Rates for other drivers were lower than car drivers: van drivers were observed to be wearing a seatbelt in 82% of cases, lorry drivers in 58% of cases and bus, coach and minibus drivers in 23% of cases (similar to those in the core survey in England). Results for van and lorry drivers were marginally higher in Scotland than England in 2009.

The surveys covering extended hours in Scotland showed similar results to those conducted over only the core hours.

National wearing rates

An additional seatbelt survey based around a separate area is carried out each year to enable nationally representative results to be estimated from surveys around England. To estimate national wearing rates, the baseline wearing rates are taken from the core survey results based around Crowthorne and Nottingham, and adjustments are made based on results of the surveys in the additional areas. In 2009, sites around Gloucester were surveyed, and showed that wearing rates in the Gloucester area were consistently higher than reported in the core survey. These results, and those of previous years at additional sites, have been used to estimate the overall national wearing rates. Adjustments of around ±0.5% have been made to the core survey results.

The national wearing rates for car drivers have been estimated as being 96% overall, comprising of 94% for male drivers and 98% for female drivers, 95% on urban roads and 96% on rural roads. National wearing rates of front seat passengers were estimated to be 96% overall (92% for males and 97% for females). For rear seat passengers, the national wearing rate was estimated to be 89% overall, with 88% of males and 89% of females wearing restraints nationally. In the rear seats of cars it was estimated that 93% of 0-13 year olds were wearing a restraint and 83% of adults were wearing a seatbelt.

School seatbelt survey

The seatbelt survey carried out near 12 schools in London showed that restraint wearing rates were consistently higher at the sites near infant and secondary schools than those near primary schools. Further surveys are required to determine whether this is an effect of the schools' locations, or whether car occupants travelling near primary schools really are less likely to be wearing a restraint.

5.2 Mobile phone surveys

Core mobile phone survey results

The core mobile phone survey has been based on 30 sites in the South East of England since 2002. The drivers of 41,056 cars and 9,085 other vehicles were observed in 2009, in moving traffic, at selected sites covering all road types. The use of hand-held phones by drivers responded temporarily to the legislative changes in December 2003 and February 2007; results from the surveys carried out immediately after these changes showed a dip in usage, but the rates subsequently rose again. As the proportions of drivers using hand-held and hands free mobile phones are relatively small, it is important not to interpret small changes without taking into account random fluctuation in the data. Nevertheless, it is likely that the survey has identified the trend in mobile phone use with reasonable accuracy.

In 2009, 1.4% of car drivers were observed to be using a hand-held mobile phone, which is an increase since 2008 (1.1%). This increase was observed on all road types, in particular on motorways, where the observed rate in 2008 increased by 0.8% to 1.4% in 2009.

There was a bigger increase in the proportion of car drivers observed using hands free mobile phones in 2009 (1.4% overall) compared with 2008 (0.5% overall). On most road types, the rates have doubled in a year. These results from the mobile phone survey have been compared with the results of mobile phone use by drivers collected as part of the seatbelt survey. For hand-held devices the results from the mobile survey are slightly higher than those seen in the seatbelt survey, but the difference for most road types is 0.5% or less, and this may reflect differences between phone use at junctions and in moving traffic. However, for hands free phone use the results from the seatbelt survey are considerably lower than those found in the mobile phone survey. The opposite was true in 2008. The reason for these differences is unclear, which illustrates the need to interpret the hands free usage rates with care.

The drivers of vans and lorries were observed to be using hand-held phones proportionately more in 2009 (2.6%) than in 2008 (2.2%). The largest increase was observed on single carriageway A roads where the usage rate increased from 2.2% to 3.1%. Similarly to cars, the use of hands free phones by other vehicle drivers increased substantially to 2.4% in 2009 from 1.1% in 2008.

Rates across the day for car drivers varied a little, with a morning peak between 10:30 - 11:00 (1.6%) being higher than the usage levels (1.0%) in the early morning session (07:30 - 08:00). Use of hand-held and hands free phones was observed to be higher during the week than at the weekend for car, van and lorry drivers, and overall, considerably higher for van drivers (3.0% hand-held) than lorry drivers (1.6% hand-held).

Results based on the sites used in 2008 were similar to those found when using the new selection of sites, suggesting that the results from 2009 are comparable with 2008.

Bristol mobile phone survey

At the additional mobile phone survey in Bristol in 2009, the usage rates of hand-held mobile phones by car drivers were lower (at 0.9%) than observed in the core survey (at 1.4%). For most road types the proportion of car drivers observed using a hands free mobile phone (0.8%) was around half of that seen in the core survey (1.4%).

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Appendix A: Further tables

The tables in Appendix A contain comparison data referred to in the text, and the numbers behind the charts throughout the report.

A.1 Core seatbelt survey

Table A.1: Car occupant restraint wearing rates by age and position, weekdays (2009) (Figure 3.2)							
Position	**Age**	**Male (%)**	**Female (%)**	**All (%)**	***M sample size***	***F sample size***	***Total sample size***
Driver	17-29	92	96	94	*1,003*	*1,402*	*2,424*
	30-59	93	98	95	*5,006*	*3,660*	*8,727*
	60+	95	99	96	*2,136*	*887*	*3,041*
	All	93	98	95	*8,251*	*6,023*	*14,375*
Front seat passenger	0-13	91	99	94	*103*	*91*	*369*
	14-29	88	94	91	*350*	*460*	*825*
	30-59	93	97	96	*443*	*877*	*1,336*
	60+	97	98	98	*222*	*821*	*1,052*
	All	92	97	95	*1,136*	*2,317*	*3,672*
Rear seat passenger	0-4			98			*420*
	5-9			94			*265*
	10-13			90			*119*
	14+	78	79	79	*159*	*268*	*441*
	All	89	90	89	*541*	*748*	*1,289*

Table A.2: Child restraint wearing rates by position and age, weekdays (2008) (Table 3.3)				
	Front seat passengers		Rear seat passengers	
	1-4 years old (%)	5-9 years old (%)	1-4 years old (%)	5-9 years old (%)
Seatbelt worn	20	71	5	51
Child seat used	53	0	75	6
Rear facing child seat used	0	0	1	0
Booster seats and cushions used: properly	21	28	18	37
wrongly	0	0	0	0
Unrestrained: on seats	5	1	1	6
on passenger's lap	1	0	1	0
Sample size	*66*	*225*	*842*	*479*

Table A.3: Other vehicle occupant wearing rates by vehicle type and position, weekdays (Figure 3.3)					
Position	**Vehicle type**	**2007 (%)**	**2008 (%)**	**2009 (%)**	***2009 sample size***
Driver	Van	72	72	78	*2,375*
	Lorries			51	*512*
	Bus / coach / minibus			24	*273*
	All			69	*3,160*
Passenger	Van	62	61	72	*494*
	Lorry			43	*81*
	All			68	*575*

Table A.4: Car occupant wearing rates by session time, weekdays (2009) (Figure 3.4)			
Survey start time	**Driver wearing rate (%)**	***Sample size***	**Front seat passenger wearing rate (%)**
07:30	96	*796*	94
08:30	91	*780*	89
09:30	93	*631*	94
10:30	94	*554*	97
11:30	96	*687*	94
12:30	95	*681*	95
13:30	93	*678*	92
14:30	96	*765*	96
15:30	96	*810*	95
16:30	97	*971*	97
17:30	95	*883*	96
18:30	95	*898*	97
19:30	95	*621*	96
20:30	94	*513*	94

A.2 Scotland seatbelt survey

Table A.5: Car occupant wearing rates by position, sex and year (Figure 3.5)				
Position	**Sex**	**2002 (%)**	**2009 (%)**	***2009 sample size***
Driver	Male	94	93	*4,883*
	Female	97	97	*3,809*
Front seat passenger	Male	90	96	*677*
	Female	96	98	*1,525*
Rear seat passenger	Male	74	79	*145*
	Female	76	89	*208*

Table A.6: Car driver wearing rates by road type (2009) (Figure 3.6)			
Area type	**Road type**	**Wearing rate (%)**	***Sample size***
Rural	Trunk	97	*477*
	Major	96	*1,665*
	Minor	95	*1,028*
	All	96	*3,175*
Urban	Trunk	96	*482*
	Major	91	*1,722*
	Minor	94	*3,412*
	All	93	*5,616*

Table A.7: Other vehicle occupant wearing rates by vehicle type (2009) (Figure 3.7)			
Position	**Vehicle type**	**Wearing rate (%)**	***Sample size***
Driver	Van	82	*1,518*
	Lorries	58	*431*
	Bus/coach/minibus	23	*269*
	All	71	*2,218*
Passenger	Van	71	*410*
	Lorry	31	*65*
	All	66	*475*

A.3 Gloucester seatbelt survey

Table A.8: Car occupant wearing rates by position and age, weekdays (2009) (Figure 3.8)

Position	Age	Core (%)	Gloucester (%)	*Gloucester sample size*
Driver	17-29	94	97	*1,207*
	30-59	95	97	*2,844*
	60+	96	97	*1,199*
Front seat passenger	0-13	94	97	*135*
	14+	95	96	*1,267*
Rear seat passenger	0-13	96	91	*238*
	14+	79	88	*156*

Table A.9: Car driver wearing rates by road type, weekdays (2009) (Figure 3.9)

Area type	Road type	Core (%)	Gloucester (%)	*Gloucester sample size*
Rural	Major	97	97	*1,525*
	Minor	96	98	*833*
	All	97	97	*2,358*
Urban	Major	95	95	*1,718*
	Minor	93	97	*1,228*
	All	94	97	*2,946*

Table A.10: Other vehicle occupant restraint wearing rates by vehicle type, weekdays (2009) (Figure 3.10)

Position	Vehicle type	Core (%)	Gloucester (%)	*Gloucester sample size*
Driver	Van	78	80	*884*
	Lorries	51	41	*247*
	Bus /coach /minibus	24	25	*87*
	All	69	68	*1,218*
Passenger	Van	72	68	*197*
	Lorry	43	27	*38*
	All	68	62	*242*

A.4 School seatbelt survey

Table A.11: Car occupant wearing rates by school type, weekdays (2009) (Figure 3.11)						
	Wearing rates			***Sample sizes***		
	Infant (%)	**Primary (%)**	**Secondary (%)**	***Infant (%)***	***Primary (%)***	***Secondary (%)***
Driver	82	60	81	*1237*	*637*	*1692*
Front seat passenger	78	63	76	*305*	*139*	*368*
Rear seat passenger (adult)	65	30	48	*64*	*26*	*69*
Rear seat passenger (child)	87	65	73	*160*	*42*	*175*

A.5 Core mobile phone survey

Table A.12: Car driver mobile phone use, by road type and area, weekdays (2009) (Figure 4.1)				
Area type	**Road type**	**Hand-held (%)**	**Hands free (%)**	***Sample size***
	Motorway	1.4	-	*5,751*
Rural	A dual carriageway	1.5	1.1	*5,324*
	A single carriageway	1.4	1.9	*6,261*
	Minor	1.4	2.4	*7,194*
	All	1.4	1.8	*18,779*
Urban	A dual carriageway	1.8	0.8	*2,545*
	A single carriageway	1.4	0.8	*5,209*
	Minor	1.4	1.2	*8,772*
	All	1.5	1.0	*16,526*

Table A.13: Car driver mobile phone use, by time of day, weekdays (Figure 4.3)					
	Hand-held (%)		Hands free (%)		*Sample size*
Hour	**2008**	**2009**	**2008**	**2009**	***2009***
07:30	0.6	1.0	0.0	1.0	*5,905*
08:30	0.7	1.2	0.4	1.2	*5,240*
09:30	0.8	1.4	0.4	1.7	*3,959*
10:30	1.1	1.6	0.4	1.2	*3,666*
11:30	1.1	1.2	0.4	0.8	*3,944*
13:30	1.0	1.8	0.5	2.1	*2,579*
14:30	1.0	1.7	0.9	1.8	*3,176*
15:30	1.2	1.6	1.0	1.8	*3,778*
16:30	1.1	1.7	0.6	1.6	*4,073*
17:30	1.0	1.6	0.7	1.6	*4,736*

Table A.14: Other vehicle driver mobile phone use, by vehicle type, weekdays (Figure 4.4)					
Vehicle type	**Hand-held (%)**		**Hands free (%)**		***Sample size***
	2008	**2009**	**2008**	**2009**	***2009***
Van	2.2	3.0	0.8	2.6	*6,772*
Lorry	1.0	1.6	0.5	1.7	*2,313*
All	2.2	2.6	1.1	2.4	*9,085*

A.6 Bristol mobile phone survey

Table A.15: Other vehicle driver mobile phone use, by vehicle type, weekdays (2009) (Figure 4.5)					
Vehicle type	**Hand-held (%)**		**Hands free (%)**		***Sample size***
	Bristol (%)	**Core (%)**	**Bristol (%)**	**Core (%)**	***Bristol***
Van	2.5	3.0	1.0	2.6	*10,678*
Lorry	2.2	1.6	2.2	1.7	*4,384*
All	2.5	2.6	1.3	2.4	*15,062*

Appendix B: Results for old and new core sites

In 2009 some additional sites were added to the surveys in order to make the sites more representative of the traffic distribution across the country. All sites that were surveyed in 2008 were also surveyed, however the results presented in this report are based on the representative sample of sites which contains the new sites and some of the old sites. Sites that were surveyed in 2008 are defined as old core sites, and sites that make up the new set of representative sites are called new core sites. In many cases sites are defined as old and new core sites. More details about this change is documented in Buttress and Walter (2010).

The tables in Appendix B compare results from two sets of sites.

Table B.1: Car occupant wearing rates in core survey, by old and new core sites (2009)

Position	Sex	New core sites (%)	Old core sites (%)
Driver	Male	93.5%	93.6%
	Female	97.6%	97.6%
	All	95.2%	95.3%
Front seat passenger	Male	91.6%	91.5%
	Female	96.8%	96.7%
	All	95.0%	95.0%
Rear seat passenger	Male	88.5%	90.6%
	Female	89.5%	90.3%
	All	89.1%	90.4%

Table B.2: Car occupant wearing rates in Scotland by old and new core sites (2009)			
Position	**Sex**	**New core sites (%)**	**Old core sites (%)**
Driver	Male	93.0%	92.4%
	Female	97.2%	96.9%
	All	94.9%	94.3%
Front seat passenger	Male	96.0%	97.1%
	Female	98.3%	98.3%
	All	97.5%	97.6%
Rear seat passenger	Male	78.7%	90.0%
	Female	88.7%	91.8%
	All	87.9%	91.1%

Table B.3: Car driver mobile phone use in core survey, by old and new sites (2009)				
	Hand-held (%)		**Hands free (%)**	
Road type	**New core sites**	**Old core sites**	**New core sites**	**Old core sites**
Overall	1.4%	1.6%	1.4%	1.2%
Motorway	1.4%	1.4%	-	-
A dual carriageway	1.6%	1.8%	1.0%	0.9%
A single carriageway	1.4%	1.4%	1.4%	1.4%
Minor	1.4%	1.5%	1.6%	1.2%
Rural	1.4%	1.5%	1.8%	1.4%
Urban	1.5%	1.7%	1.0%	1.0%