

Development Department Research Programme

Seat Belt Wearing in Scotland: A Second Study of Compliance

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The Scottish Executive commissioned The Halcrow Group Ltd to undertake research to establish the current rate of compliance with seatbelt wearing legislation, and whether there has been any significant change since 1997, updating the first study of compliance carried out in 1997, by Halcrow Fox for the (then) Scottish Office. The commissioned research measured the rate of seat belt wearing by drivers of cars, vans and taxis, and front and rear seat passengers (including children) in Scotland. This study shows that current seat belt wearing rates in Scotland are 95% for drivers, 91% for front seat passengers and 78% for rear seat passengers.

Two further strands of research were added:

- to establish the current extent of use of hand held mobile telephones by drivers of cars and vans in Scotland; and
- to carry out a literature review of research into the incorrect fitting of child car seat restraints, to establish if further research is required in this area.

Main Findings

- 88.6% of all vehicle occupants were observed to be wearing an appropriate restraint, a 2.2% increase since 1997.
- Light van and taxi occupants had a substantially lower compliance rates than car occupiers.
- 95% of car drivers, 91% of front seat passengers and 78% of rear seat passengers were appropriately restrained.
- There continues to be a correspondence between the behaviour of car drivers and passengers, with a greater likelihood of passenger compliance where the driver also used a seat belt.
- Overall, little change in seat belt use was recorded. However, rear seat restraint use rose from 71% to 78%, and there was a decline in restraint usage for children under 5 years.
- 1% of drivers were observed to be using hand-held mobile telephone equipment.

Background

The wearing of seatbelts by drivers and front seat passengers was introduced in Great Britain by legislation in 1983. Further legislation in 1989 and 1991 required children and adults to use rear seat restraints. Research by TRL in England and The Halcrow Group Ltd. (as Halcrow Fox) in Scotland has found high rates of compliance with legislation for driver and front seat passengers, with lower rates for rear seat passengers.

The Scottish Executive Social Research commissioned The Halcrow Group Ltd. to undertake surveys of seat belt wearing replicating work undertaken in 1997 at a range of sites representative of Scotland in April and May 2002, with a limited follow-up survey in July 2002. The survey programme was also used to capture data regarding the extent of use of hand held mobile telephones by drivers of vehicles.

The Study

The overall aim of the research was to obtain a reliable and robust measure of the extent of use of seat belts and other restraint equipment in Scotland. More specific objectives, which were set out in the Research Specification, were as follows:

- To establish any significant differences in patterns since the 1997 survey;
- To highlight differences in the level of compliance according to whether the restraints are in the front or rear of the car;
- To establish differences between gender and age groups in level of compliance; and
- To ascertain whether compliance rates vary according to traffic conditions, road type and geographical location.

In addition to these objectives, which replicate the 1997 work, two further objectives were specified:

- To establish the extent of hand held mobile phone use in cars and vans in Scotland; and
- To carry out a separate literature review of research on the extent of incorrectly fitted child restraints in cars and establish whether there is a need for further research in this area.

Methodology

The data required to achieve the Study aim and objectives were gathered by observing behaviour at a sample of 21 sites which were representative of Scotland, in terms of road classification and vehicle kilometres travelled. The sites used were the same sites as the 1997 study, with two exceptions; two sites had received significant engineering works since 1997 making them unsuitable for surveying, therefore similar sites at alternative locations were introduced.

At each site, vehicle details and occupant characteristics and behaviour were captured between 07:00 and 19:00 on a single day in April or May 2002. Surveys at three sites were repeated in July 2002 to examine the variation of compliance with seasonal change, as undertaken in 1997.

The methodology used to collect this data involved the observation of vehicles and occupants that were stopped on the approach to one arm of a signalised junction. A Manual Classified Count of passing vehicles was undertaken at each survey location to record the total number of vehicles passing through the sampling location.

Survey Report

During the spring survey period, seat belt wearing characteristics were recorded for a total of 44,881 occupants travelling in 31,279 cars, vans or taxis, out of a total of 78,301 such vehicles passing through the sampling points. This sample proportion of 39.95% of passing vehicles compares with a sample proportion of 35.8% obtained in 1997, providing a substantial and robust dataset for comparative purposes.

The additional July surveys at three locations observed 2,748 out of 4,401 vehicles (62.44%), providing an additional 4,787 occupant records. Overall, 49,668 person records were gathered from 34,027 vehicles in the 2002 survey, while the 1997 dataset recorded 49,059 person records from 33,354 vehicles. The number of vehicles passing through the sampling points was less in 2002 than in 1997, with 82,702 cars, vans and taxis recorded, compared to 88,134 such vehicles in 1997.

Results

Vehicle Type

Across all sites 88.6% of vehicle occupants were observed to be using an appropriate restraint. This figure varied considerably by site between 78.5%, for Site 4 (Edinburgh Road, Glasgow), to 94.0% for Site 1 (Great Western Road, Glasgow).

In total about 86% of the vehicles sampled were cars, 3% taxis and 11% light vans. Figure 1 shows that the level of compliance has increased from the 1997 results and that restraint usage amongst light van and taxi occupants remains relatively low.

Seating Position

Analysis of restraint in cars by seating position showed that restraints were used by 95% of drivers, 91% of front seat passengers and 78% of rear seat passengers.

Age, Gender and Seating Position

Figure 2 shows that children under 13 years of age have compliance rates which are low compared to other age groups and that the compliance rate for children under five has reduced from 95% in 1997 to 87% in 2002.

Figure 1: Use of Restraint by Vehicle Type

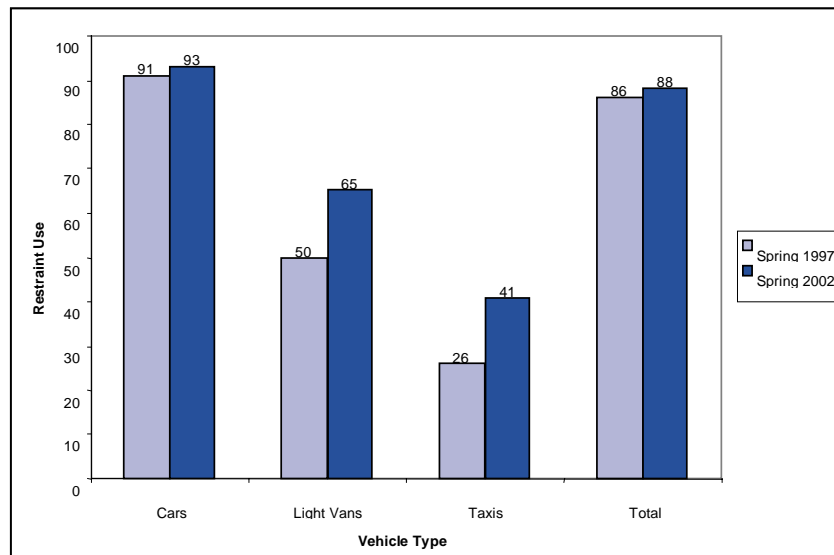


Figure 2: Use of Restraint by Age of Car Occupant

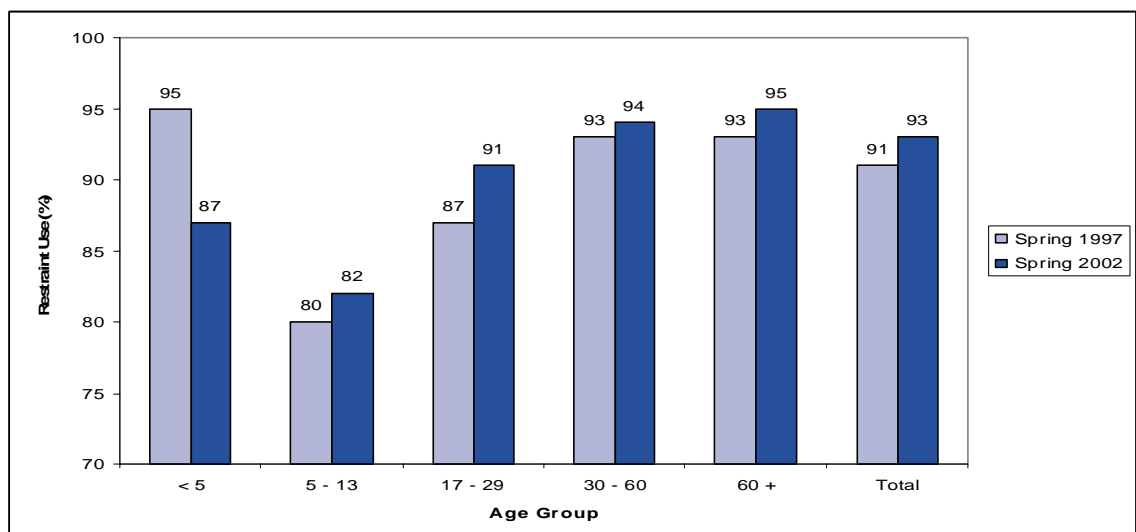


Figure 3: Restraint Use by Position in Car

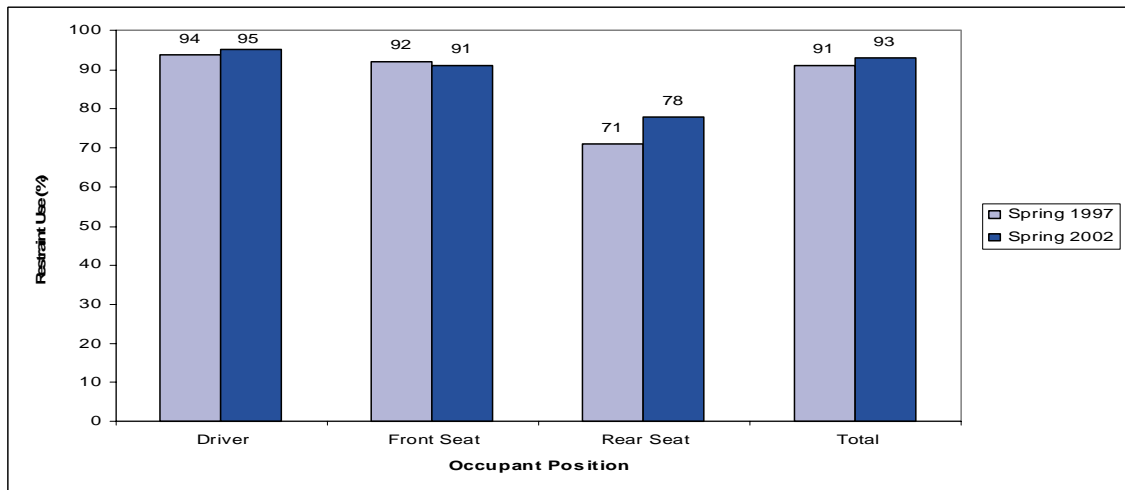


Figure 4: Use of Restraint by Gender and Position in Car

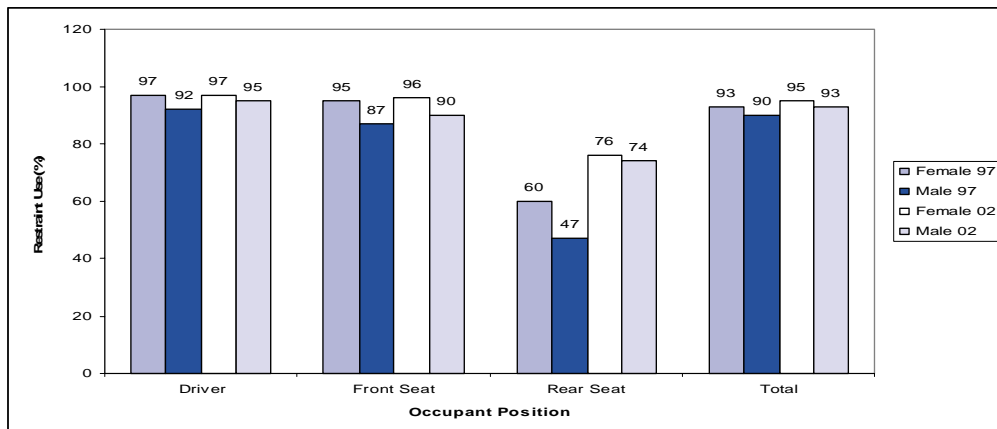


Figure 3 illustrates the 1997 and 2002 results for seat belt compliance for occupant position. This again highlights that the overall rates have increased, this is due to the increase in rear seat compliance rates.

Figure 4 combines the 1997 and 2002 results on gender and seating position, there remains to be a small overall difference between male (93%) and female (95%) compliance rates. The diagram shows for all seating positions female compliance rates exceed those for males. This difference is 2% for drivers, 6% for front seat passengers and 2% for rear seat passengers.

A detailed analysis of compliance rates by age, gender and seating position showed that the following had the lowest rates:

- all male and female rear seat passengers aged 14 and over, whose restraint percentages range between 57.1% and 81.1%;
- front seat male passengers in the 14 to 60 age range (between 85.2% and 91.8%); and
- male drivers in the 17 to 29 age range (91.2% of occupants appropriately restrained).

Driver and Passenger Restraint

The results show that in cars where the driver used a seat belt, 92.6% of passengers were properly restrained. This contrasts with the remaining cars where only 38% of passengers were properly restrained, a difference of almost 55%. This evidence, which is in line with the 1997 findings, suggests a correspondence between driver and passenger behaviour. Intuitively it seems likely that passenger behaviour is influenced by driver attitude to seat belt wearing.

Regional Differences

The results show a significant difference between (former local authority) regions in the percentage of car occupants using appropriate restraints. In the central belt, approximately 92% of car occupants used an appropriate form of restraint. The percentages for the rest of Scotland were higher, and ranged between 93.4% and 95.5%. These differences do not appear to be explained by differences in gender and age across sites.

Spring and Summer Compliance Rates

There was a measurable increase in the use of restraint at two of the three sites and the major factors affecting this change were the increase in the proportion of cars making up the traffic flow, and the increase in compliance rates for car occupants.

Summer 1997 and Summer 2002 Compliance Rates

In summary there was a modest increase in the use of restraint on all three sites of about 4% for two sites and 11% for the third, as mentioned above the major factors affecting this change were the increase in the proportion of cars making up the traffic flow, and the increase in compliance rates for car occupants.

Mobile Phone Use

Just under 1% of drivers were observed to be using hand-held mobile telephone equipment, although the true number may be higher, due to the presence of survey staff wearing high-visibility jackets. A sample validation survey recorded a usage rate of 1.6%.

Child Restraint Equipment

In addition to the survey work reported above, a Literature Review was undertaken to establish the extent of incorrectly fitted child restraints in cars, and to establish whether there is a need for further research in this topic area.

Conclusion

The following groups should be considered for targeting in future road safety campaigns:

- taxi and light van occupants;
- rear seat passengers;
- front seat male passengers in the 14 – 60 age range;
- male drivers in the 17 to 29 age range; and
- children aged under 13.

There is evidence of a relationship between driver and passenger behaviour and this should be further investigated to determine whether there is a causal link between these two groups of car occupants.

The limited spring and summer comparison suggested greater compliance levels in the summer. Further research should be considered into compliance rates according to journey purpose and day of travel.

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