

Night-time accidents

A scoping study

Report to The AA Motoring Trust and Rees Jeffreys Road Fund

Heather Ward⁺, Nigel Shepherd^{*}, Sandy Robertson⁺, and Mary Thomas^{*}

The  **Motoring Trust**

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EXECUTIVE SUMMARY

+ Centre for Transport Studies
University College London

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*FaberMaunsell Limited

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Executive Summary

Context

Only a quarter of all travel by car drivers is undertaken between the hours of 19.00 and 08.00, but it is in this period that 40 percent of fatal and serious injuries are sustained by drivers. This indicates that car travel at night carries a greater risk of being killed or seriously injured than does travel during the day.

The literature indicates that disproportionate numbers of young drivers, especially young men, are injured at night. But to be able to introduce measures targeted at this group more needs to be known about the purpose of their journeys, the types of roads they travel on, and how far they drive and at what times in the evening and at night.

Older drivers tend to have fewer accidents at night, but little is currently known about how much can be accounted for by exposure related to their driving patterns. People over the age of 60 years form about 20 percent of the population, yet they make up over a quarter of traffic fatalities.

These two groups of young and older drivers have been selected for study with the following aims:

- (a) to assess what information exists which relates to night-time exposure by activity and by group (young and older);
- (b) to assess what is known about exposure and risk to young and older drivers at night, in conjunction with an analysis of relevant accident data to provide a picture of the size of the potential problem areas, and gaps in current knowledge;
- (c) to identify people's concerns, attitudes and beliefs with regard to the problems of night-time driving; and
- (d) to provide the basis for decision on what measures might be brought to bear on the problem, and what further research would be needed in order to point to focused action.

This scoping study is in two parts and provides an assessment of the information available and hence the gaps in our knowledge on the nature and extent of night-time driving, and the risks involved at these times. The first part assesses the available data, and the second uses focus groups to gather the views of drivers themselves, together with their concerns, attitudes and beliefs with regard to the problems of night-time driving.

The measurement of exposure, or amount of travel by car, of drivers of different age and gender is central to the assessment of the risk of being killed or injured in a road traffic accident. In this study, the measure of exposure used is distance travelled per person per year. This has been combined with casualty

data to make preliminary assessments of risk to people of different ages and gender of driving at during the daytime and at night.

Data available

The casualty data are extensive and allow investigation of how many drivers are killed or injured in built-up or non-built up areas and on main and minor roads in these two types of area. Motorways have been excluded from the analyses. The study focuses on drivers of cars and excludes riders of powered two wheeled vehicles and drivers of heavy vehicles and buses. At present the casualty data do not record the purpose of the journey/trip being undertaken at the time of the accident. This information should start to be collected in the next two to three years.

In contrast, routinely collected exposure information is rather sparse. There is good information on the distances driven per year (as car drivers) per person of different age and gender by time of day and the average number of stage trips per year per person. It is rather more difficult to extract information on whether these trips began or finished in built-up or non built-up areas because it has only recently started to be collected in the National Travel Survey. The amount of travel on roads of different types is not collected, but it is possible to estimate distances driven for different purposes, although the samples may be too small to use except at the general level of gender and age.

In light of availability of data, analyses were carried out to give an assessment of injury occurrence and risk to the target groups of young and older drivers at night-time.

Analysis of casualty data

The main points from the analysis of casualty data on its own are:

1. On *non built-up A roads* both male and female young drivers are killed or seriously injured in large numbers relative to other age groups. One in four of all male drivers killed or seriously injured on this road type are between the ages of 17 and 25 years. About twice as many young men under 25 years as young women are killed or seriously injured. The numbers of killed or seriously injured driver casualties declines sharply with age after about 25 years.
2. On the *built-up A roads*, the number of female drivers under 25 years killed or seriously injured is about half that on the non-built-up roads and for young males it is about two-thirds.
3. On the *non built-up B, C and unclassified roads*, the interesting feature is the very high incidence of young male casualties (17-20 years) in relation to drivers of all ages and gender.
4. On the *built-up B, C and unclassified roads*, for drivers of all ages the numbers killed or seriously injured are higher than on this group of roads in non built-up areas with the exception of young females (17-20 years). For young males the number for the 17-20 year olds is almost as high as on the non

built-up A roads. Amongst the females it is the 21-25 year age group that has the highest number of casualties on these roads.

Casualty rates and risk

The addition of exposure data adds to the picture in that the casualty rate for the youngest group of males remains much higher than for other male drivers with a large increase in the early evening becoming larger again between 22.00 and 01.59. The addition of mileage driven tends to flatten out the differences between the remaining age groups except for the older males where the risk of death or serious injury is higher than might be assessed from the casualty figures alone.

Females in the oldest age group are more at risk than other age group, and especially so late at night (22.00-01.59). However, some of this effect may be due to the low mileage driven by this group together with the low numbers of casualties leading to uncertainty in the estimates. During the day, when about 68 percent of the driving is done by this age group, their casualty risk is still the highest and about twice that of men of a similar age. It is interesting to note that the difference is quite small between the 36-54, 55-64, and 65-74 age groups but the difference between these and the oldest group is very marked, except for the period 05.00 – 07.59 hours.

Other than for the oldest group discussed above, young females are more at risk than females aged 21-74 years of being killed or seriously injured at all times of day. The risk between 19.00 and 21.59 is about twice that during the day and between 22.00 and 01.59 it is about two and a half times as high.

Issues raised about driving at night by drivers of different ages

A wide range of issues were raised by the focus groups. The most striking point to come out of the discussions is how many young males like to test themselves and their cars to the limit and then joke about it afterwards when things go wrong. These young men tend to be driving older cars to which they may have made 'improvements', and they often have passengers with them at the time. The casualty figures show just how often things do go wrong for this group at night, with fatal or serious consequences. There appears to be little concept of risk yet the figures presented in this report indicate the risk is very high for this group. Some of the comments indicate that they need to get their 'fingers burned' before the message will come home to them.

However, not all young drivers, and not all young men are out to test themselves and their cars. Some hold very mature attitudes. What the differences in casualty rates are between these two groups is not known, but inexperience in driving at night when distinguishing features merge into the background is a factor that is acknowledged by many of the young drivers.

Deaths of young male drivers in drink-driving accidents is receiving increased attention as a road safety issue. The young men in our sample were cagey about admitting to drink-driving, but it became apparent by their comments that some did despite being designated drivers. It emerged that often there was little support for abstinence from passengers of the designated driver.

By contrast, none of the young women in our sample drove home from nightclubs late at night mainly because they tended to be passengers in male driven cars. Whilst initially being adamant that they do not accept lifts with drink-drivers, when pressed they admitted they did especially if they lived in rural areas to which taxis are infrequent, expensive, and queues for them long.

The main area absent from discussions with young and old alike was driving at night in built-up areas. Most of the concern centred on how difficult it was to see on unlit non built-up roads and what a relief it was to enter the town with its streetlights. Some young drivers said they tried to keep off the main roads later in the evening as this is where the police and speed cameras are. The accident risks are clearly not appreciated.

An illustration of the mismatch between perceived risk and casualty numbers is the call from many drivers for higher speed limits at night when the roads are quiet. This study indicates that this would not be a productive policy option.

Gaps in our knowledge

Older drivers

The lifestyle of older drivers indicates that they undertake most of their social and business activities during the daytime. They have all the time in the world to do what they need to do and as driving at night is difficult, and sometimes threatening, they avoid it where there is an alternative. Having said this, there are those older drivers who still enjoy driving at night, and presumably there are those whose lifestyle means they have to drive at night. The data do not exist to enable us to identify these groups.

The casualty analysis indicates that older drivers have few accidents at night compared with the day. There are more male casualties than female at night, and this reflects a difference in exposure as males tend to drive about twice as many miles per person at night than do females. On the other hand the risk of death or serious injury to older females is very marked and given the low exposure of this group in the evening and at night, there is cause for concern.

In contrast to the younger drivers where many studies have been undertaken, it has been difficult to assess the difficulties experienced by older drivers at night because of the paucity of studies that have looked at time of day effects for this group.

This study has identified the following recommendations for action in respect of filling gaps in our knowledge and practice for older drivers.

- An in-depth study of accident records would help understand where this group of drivers is most at risk of an accident at night when they do drive.
- When making a decision to purchase a new car, older drivers, especially older females who are in general more fragile than older males, should be made more aware of safety features that might help them survive an accident as well as other features of modern cars, or additions that can be made to them, that make the driving task easier. Discussions with motor manufacturers are warranted to advise them of the need to cater for in-car protection aimed more at older drivers.
- Local Authorities and motoring organisations both have a role to play in setting up schemes for older drivers where advice is given about how to drive in complex environments in a changing world. In addition, people can, on a voluntary basis, be taken on test drives with an advanced driving instructor to give guidance on how to change driving styles to cope with aspects they find difficult.
- Headlights of oncoming vehicles cause problems of glare, and whilst it is not clear how many accidents could be saved by better adjusted lights and better discipline in dipping for oncoming vehicles, these are obviously areas of concern for older drivers.
- The quality of the infrastructure is important to older drivers, especially with regard to signing and marking of the edge of carriageway. Local Authorities in their road maintenance plans should pay particular attention to roads in non built-up areas where edge of carriageway is indistinct and look for ways in which markings could be improved.

Young drivers

Good information on both accidents and exposure is needed to enable policy makers to assess different options for improving the safety of young drivers at all times of day but especially at night when the accident risk is high. This information is also needed to enable young people themselves to be better informed as to the risks.

The greater numbers of people injured (all severities) on built-up roads can perhaps be partly explained by the attraction of towns with their clubs and nightlife. This focus for leisure activities results in the concentration of trip ends in town in the early evening and trip beginnings in the later evening.

The rural lanes hold a particular attraction for some young men to drive along, as they consider them a good test of their skills. They are often in smaller, older cars that are carrying the maximum number of passengers, sometimes more, which affects the handling. They also believe that if they cannot see headlights then nothing is coming, and they make mistakes.

This study has identified the following recommendations for action in respect of filling gaps in our knowledge and practice for younger drivers.

- Policies to increase the amount of experience a young driver accumulates before being allowed to drive alone have been demonstrated to increase the safety of this high accident involved group. The use of the learner driver log-book should be made mandatory as soon as possible. This should allow for a realistic level of experience to be gained driving at night-time which in turn will help increase the understanding and support of parents and young people for the need to gain experience in such a high risk driving environment. In general, improving driver education and training is seen as the way forward to safer driving by young people.
- A feature of driver training that needs more consideration is the risk of driving at night. Central and local government in partnership with the motoring organisations and insurance industry should give priority to developing risk awareness programmes that involve and are acceptable to young people.
- One way to reduce the numbers of young people being injured at night would be to reduce their exposure during the critical hours. Reducing exposure is usually not an option. In view of the high risks to the youngest groups of drivers, it is time to consider such a system for Britain, but the possible benefits in accident reduction would need to be fully assessed alongside the effects of such a restriction on employment and mobility of young people (Baughan and Simpson, 2002).
- Studies have shown that young drivers often carry several passengers and there is an association between passengers and accidents, especially late at night. Baughan and Simpson suggest that passenger restrictions for drivers when they first begin driving alone merit serious consideration. Their assessment of the possible unintended social effects include the possibility of young drivers transferring to less safe forms of transport and making more car journeys as drivers rather than as passengers.

Finally, young drivers do not have much money for motoring given the need to tax and insure a vehicle as well as run it. They tend to buy or inherit smaller older cars that do not have the up to date crash protection or handling of newer models - two of the things needed by inexperienced young drivers with a tendency to carry passengers. In time the newer cars of today will be the old cars of tomorrow and the safety benefits will flow down in that way. However, given that cars will continue to improve, this young group is always going to be left behind. This highlights the need for extra driver education, training and practice before being permitted to drive solo, especially at night.

Data needed to fill gaps in our knowledge

This study has shown that there are unanswered questions about the travel patterns of drivers at night-time. The Table below outlines the main areas

where data are lacking. Filling these gaps will allow the recommendations given above to be assessed and decisions made about which may be possible to take forward and implement.

Gap in our knowledge	Why it is important to fill
1. Km driven during night-time hours on major and minor roads in built-up and non built-up areas	Accident occurrence differs between area types. Interventions will differ for major and minor roads and by area type.
2. Km driven during night-time hours by males and females of different ages on major and minor roads in built-up and non built-up areas	Accident occurrence on major and minor roads differs between males and females and between people of different ages. Information will help to target interventions at particular groups, eg. more supervised driving at night on non built-up roads. Data needed for tracking changes in exposure for these groups over time and in response to policy interventions
3. Journey purpose by time of day, including night-time, and day of week for males and females of different ages	Need to know how many accidents are work or leisure related to assist development and targeting of interventions and for determining which categories of drivers are in high risk groups
4. Reporting rates in non-built up areas by age and road type	The accident risk of young drivers in particular may be under-estimated using STATS19 data alone. Do not have data on reporting rates on non built-up roads
5. Twilight (dawn/dusk)	Little is known about these times of day
6. Differences in exposure between light and dark evenings	STATS19 data allows casualty numbers to be calculated by time of day and light and dark. Need exposure data to calculate differences in risk between light and dark for a given time of day