YOUNG AND NOVICE DRIVERS' EDUCATION, TRAINING AND LICENSING

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CONTENTS

1 INTRODUCTION

1.1 Almost all (89%) road accidents involve at least one car driver.[1] Although it is not always the driver who is at fault, they are, nevertheless, the largest single common denominator in road accidents.

1.2 Car drivers are not an homogenous group. Particular kinds of car drivers are involved in road accidents more often than others. One of the highest risk groups is novice drivers, most of whom are also young drivers[2].

1.3 Although 17 – 21 year old drivers account for about 7% of the driving population, they comprise 13% of drivers involved in accidents[3]. An 18 year-old driver is more than three times as likely to be involved in an accident as a 48 year-old. One in five new drivers are involved in an accident in their first year of driving.[4]

1.4 Across Europe, novice drivers are over-represented in road accidents.[5] In the USA, motor vehicle crashes are the leading cause of death among teenagers, accounting for 36% of all deaths of 15 to 19 year olds.[6] The fatal crash rate per million miles for 16-year-old drivers is more than seven times the rate for drivers aged 30 to 59 years.

1.5 The driver training, testing and licensing regime is the main tool used to provide drivers with the necessary knowledge, attitudes and skills to drive safely. The need to improve driving standards is recognised in the Government's road safety strategy[7], which states that measures will be introduced to:

- instil in young people the right attitudes towards road safety and safe driving;
- guide learner drivers to take a more structured approach to learning, to prepare them for their driving career, not just to pass a test
- raise the standard of tuition offered by driving instructors
- improve the driving test in the light of better understanding about what needs to be examined and effective ways to do it
- focus on the immediate post-test period for novice drivers
- enhance the status of advanced motoring qualifications.

1.6 The purpose of this paper is to:

(a) outline the number and causes of accidents involving novice drivers;

(b) outline the current driver training, testing and licensing regime, indicating where improvements could be introduced;

(c) develop RoSPA's policy positions in regard to driver training, testing and licensing.

2 DRIVER LICENSING IN GREAT BRITAIN

2.1 In order to drive a car, the driver must have a valid driver licence. In Britain, learner drivers may obtain a 'provisional' licence from the age of 17 years, which allows them to drive (except on motorways) while displaying an L Plate and being supervised by another driver who is at least 21 years old and has held a full licence for at least three years.

2.2 To gain a full driving licence, a learner driver must pass the driving test, which comprises a theory test and practical test. The theory test, which must be taken before the practical test, consists of 35 questions of which 30 must be correctly answered. The practical test is an on road driving test lasting approximately 40 minutes, although only 30 - 35 minutes are actually spent driving or doing manoeuvres on the road.

2.3 Learner drivers can take their test on their 17th birthday and are not required to take a minimum period of training or to take professional training. However, the vast majority of learners do take some lessons with an Approved Driving Instructor, as well as private practice.

2.4 The full licence is normally valid until the driver reaches their 70th birthday (unless the driver is disqualified or is required to surrender the licence for medical reasons) after which it is renewable every three years.

2.5 Drivers are disqualified from driving (for periods set by the court) if they have acquired 12 or more penalty points for driving offences on their licence. At the end of their disqualification period, drivers can apply for their licence back and once again drive. For some offences, courts order drivers to take an extended driving test, and/or meet specified medical conditions, in order to regain their licence to drive.

2.6 Since 1 June 1997, the licences of drivers who get six or more penalty points within two years of passing the driving test are revoked. The only way they can continue driving is to obtain a provisional licence, drive as a learner (display 'L' plates, etc) and pass both the theory and practical tests again. Revocation in this manner does not extinguish the penalty points, which remain valid for three years.

2.7 From 70 years of age, drivers must complete a self-certification form every three years stating that they are still safe and fit to drive on the road.

3 CAR USE

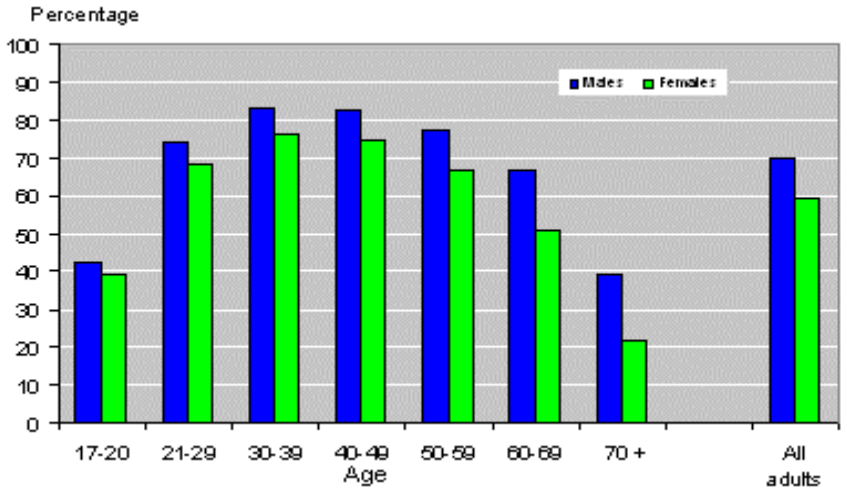
3.1 Car traffic has increased dramatically since the mid 1980s - by almost two-thirds[1]. This trend is continuing and car traffic is estimated to grow between 17% and 21% over the next twenty years[8]. Not surprisingly, the number of people licensed to drive mirrors this trend: 24.4 million people had full driving licences in 1985 and 33 million in 2000.[9] In 1985 there were 19 million motor vehicles on Britain's roads, by 2000 there were almost 29 million.[1]

3.2 National Travel Survey data[10] shows that 83% of men and women travel in a car at least once a week. Car mileage of male drivers rose 14% between 1985/86 and 1998/2000, whereas for female drivers it rose by 31% over the same period. The number of car trips by both sexes increases with age, until people reach their fifties, when it begins to fall.

3.3 In 1997/99, 82% of adult men and 59% of adult women held full car driving licences. Licence holding is still increasing rapidly for women, having doubled over the last twenty years, but the proportion of men holding licences has changed little since the late 1980's.

3.4 The peak licence holding age for men is the 40-49 years, whilst for women it is 30-39 years. The gap between men and women holding licences is closing in each age group, although young men are still much more likely to hold licences than young women. There has been a reduction in young male driving licence holders (aged 17-20), perhaps due to the introduction of the theory test in July 1996.

Table 1 Driving Licence Holders by age and sex[10]



4 ACCIDENT AND CASUALTY TRENDS[1]

4.1 By 2000, the number of car drivers killed had fallen by 16% from the average figures for 1981-1985 and the number seriously injured had fallen by 28%. However, slight injuries were 92% higher, and total casualties were 66% higher.

This trend has continued in the first year of the new 2010 casualty reduction targets. Compared with the 1994-1998 average, almost 4% fewer car drivers were killed in 2000, and 14% fewer were seriously injured. Slight injuries were 7% higher. Total casualties were 5% higher in 2000.

Table 2: Car Driver Casualties, 1994/98 - 2000

Casualty Severity	**2000**	**1994-98 average**	**% Change**
Fatal	1,087	1,128	-4
Serious	12,695	14,634	-14
Slight	120,146	112,196	7
Total	133,928	127,958	5

4.2 These figures should be seen against an increase in car traffic of 62% from the mid 1980's and an increase of 10% since the late 1990's.

4.3 **Car Driver Casualties by age**

Drivers under the age of 25 years account for 25% of drivers killed or seriously injured, and 22% of car driver casualties.

Table 3: Car driver casualties by age, 2000

Age	**Killed or Seriously Injured**	**% of KSI**	**All Casualties**	**% of casualties**
<17	64	0.5	288	0.2
17 - 19	1,275	10	11,170	8
20 - 24	1,880	15	19,325	14
25 - 29	1,558	12	19,214	14
30 - 39	2,759	21	34,707	26
40 - 59	3,201	25	35,642	27
60 - 69	833	6	6,816	5
70 +	950	7	5,250	4
All ages*	**12,695**		**133,928**	

* Includes age not reported

4.4 **Gender**

the vast majority (89%) of under-17 year old driver car casualties are male as are two-thirds (65%) of 17 to 19 year old driver casualties. Male drivers account for 56% of casualties in the 20 to 24 years age group.

Table 4: Car Driver Casualties by Gender: 2000

Age	Male	% of age group	Female	% of age group
	number	%	number	%
<17	258	89	30	11
17 – 19	7,245	65	3,925	35
20 – 24	10,852	56	8,470	44
25 – 29	10,287	53	8,926	47
30 – 34	9,799	52	8,845	48
35 – 39	8,475	53	7,587	47
40 – 49	11,395	53	10,050	47
50 – 59	7,883	55	6,314	45
60 – 69	4,430	65	2,386	35
70 +	3,517	66	1,833	34
All Ages*	75,045	56	58,853	44

*Includes age not reported

4.5 **Accident Involvement**

The number of car drivers involved in road accidents rose by 21% between 1981/85 and 2000, which may well be due to the rise in the number of car drivers. In contrast, the number of drivers of other motor vehicles involved in road accidents fell by 5% over the period, and the number of motorcyclists involved in accidents fell by 56%. Between 1994/98 and 2000, the number of car drivers involved in accidents rose, but by a much smaller amount than motorcyclists.

Table 5: All Casualties, 1994/98 – 2000

User Groups	2000	94/98 average	% Change
Car Drivers	133,928	127,958	5
Other Drivers	9,307	9,037	3
TWMV	26,513	22,251	19
All drivers/riders	169,748	159,246	7

4.6 **Casualties by Type of Road**

A study[3] of accidents involving four different age groups of drivers suggests that younger drivers have fewer accidents than older ones on motorways and built-up roads, but their risk is higher on non built-up roads. Drivers aged 17-19 years have almost one third (30.5%) of their accidents on non built-up roads (speed limit above 40mph), just over two thirds (67%) on built-up roads (speed limit of 40 mph or less) and just 2.4% on motorways.[11] 20-24 year old drivers have one quarter (25.5%) of their accidents on non built-up roads, over two thirds (69.8%) on built-up roads and 4.6% on motorways. The proportions are similar for 25 to 29 year old driver (24% of accidents on non built-up roads, 70% on built-up roads and 5.4% on motorways) and for 30-39 year olds (23% on non built-up roads, 72% on built-up roads and 4.8% on motorways).

4.7 Younger drivers are more likely to have accidents on single carriageway roads. 17-19 year old drivers have 10.6% of their accidents on dual carriageways. Drivers aged 20 to 24 years have 13% of their accidents on dual carriageways. The proportion for 25 to 29 year olds is 13.8% and for 30-39 year olds, 12.9%.

4.8 **Casualties by Day of the Week**

Car user casualties peak during the week, with Fridays and Saturdays having similar levels and Sunday being slightly lower. This probably reflects greater use of cars during the week. Younger drivers, however, have a higher proportion of their accidents over the weekend than during the week.[3]

4.9 **Casualties by Time of Day**

Young male and female drivers have more accidents in the dark (especially between 8:00 pm and 2:00 am) than older drivers.[3] And a higher proportion of these accidents are single vehicle accidents in which the driver loses control and runs off the road or hits an object. This is, in part, because younger drivers do a higher proportion of their driving during the hours of darkness, especially at weekends.

4.10 **Type of Accident**

Novice drivers seem to be particular susceptible to certain types of accidents[2], [12]:

- turning right
- speeding
- overtaking
- negotiating bends
- rear end shunts
- Single vehicle – loss of control.

4.11 Perhaps surprisingly, younger drivers have a lower rate of collisions with a pedestrian than older drivers: about 11% of accidents involving 17 - 19 year old drivers involved a collision with a pedestrian compared to 14% of those involving 30 - 39 year old drivers.

4.12 Young drivers are involved in three times as many 'Active Accidents' (where they reported hitting another vehicle, road user or object) than older drivers, but only 1.3 times as many 'Passive Accidents' (where they were hit by another driver).[3, 12]

4.13 A study by West, using the TRL Cohort data[13] found that novice drivers had a higher risk of causing accidents (i.e.'Active' accidents) by hitting the rear of other vehicles and losing control of their own car. This study concluded that these accidents were related to 'motivated bad driving' involving impatience, inattentiveness, and a tendency to commit violations and drive to fast.

4.14 **Drinking and Driving**[1]

Although drink drive accidents have dropped significantly over the last two decades, the reduction appears to have levelled in recent years. The proportion of fatally injured 16 – 19 year old drivers who were over the legal blood alcohol limit rose from 13% to 22% between 1990 and 1999. (The provisional figures for 2000 show a significant drop, but provisional figures are subject to major corrections). The proportion of 20 – 29 year old drivers rose from 24% to 31%. In contrast, the proportion of 30 –39 year old drivers stayed about the same, and the proportion of drivers aged 40 years and over fell from 10% to 7%.

Table 7: Percentage of Fatally Injured Drivers over the legal blood alcohol limit

Year	16-19	20-29	30-39	Age 40+
1990	13	22	33	10
1991	11	29	24	13
1992	13	26	18	10
1993	20	28	26	10
1994	16	31	30	11
1995	18	28	26	13
1996	24	38	32	9
1997	25	23	26	12
1998	17	25	24	9
1999	22	31	31	7
2000*	13	38	35	13

*Provisional data

One study[14] found that older drivers drank more and were prepared to drink more before driving than younger drivers.

5 WHY DO NOVICE DRIVERS HAVE A HIGHER ACCIDENT RISK?

5.1 Age

5.1.1 The majority of novice drivers are young. It is difficult to separate the effects of age on accident risk from the effects of driving experience; once a young driver has passed the driving test, he or she gains driving experience as they also grow older.

5.1.2 In TRL's Cohort Study,[2] 18% of new drivers were involved in at least one accident within one year of passing their test. This fell to 13% in the second year and 10% in the third year. The study found that age does influence drivers' accident risk. 18% of drivers who were aged between 17 and 19 years when they passed their test were involved in a road accident in their first year of driving, whereas only 12% of drivers who were aged over 25 years when they passed their test had an accident in their first year of driving.

5.1.3 This study also predicted that drivers who started to drive when they were 18 years old would have 9% fewer accidents in their first year of driving than those who started to drive when they were 17 years old. Drivers who began driving when they were aged 19 years would have 8% fewer accidents in the first year than those who began when they were 18 years old. The differences decreased with age, meaning that drivers who started driving at 26 years of age were likely to have only 5% fewer accidents than those starting aged 25 years. Once drivers are into their second and third years of driving this age difference in accident liability reduces significantly.

5.1.4 The number of accidents involving drivers aged between 16 and 19 years old has fluctuated over the last decade or so, but has been increasing since 1995.[15] The accident rate per numbers of licensed drivers in this age group has also been increasing in recent years.[7]

5.1.5 A study in Finland[16] which examined the amount of driving, number of accidents and motoring offences of 28,500 novice drivers within the first 18 months of driving experience, found that younger novice drivers (aged 18 – 20 years) had more accidents and offences than older novice drivers (aged 21 – 30 and 31 – 50 years) and their accidents were more likely to occur at night.

5.1.6 Analysis of the records of over 40,000 people who obtained learner permits in Novia Scotia between 1990 and 1993[17] found that 71% obtained their licence at 16 years of age, 14% when they were aged 17 to 19 years, and 15% when they were 20 years or older. While learning to drive, they had a total of 445 crashes, whereas in the first two years of driving after passing their test, they had 6,203 crashes. The crash rate was very high in the first month after passing the driving test and dropped consistently until the seventh month, by which time it had declined by 41%. Thereafter, the crash rate continued to decline but at a more gradual rate. By the end of their second year of driving, the novices' crash rate was 60% lower than when they first passed their test. Younger novices (16 – 19 years) had a crash rate which was double that of older novice drivers (20 years plus).

5.2 Experience

5.2.1 TRL's Cohort Study[2] also examined the effects of driving experience on accident risk by calculating changes in the number of accidents in drivers' first, second and third years of driving. For 17 year old drivers, one year's driving experience reduced their accident risk by 38%, for 18 year old drivers the reduction was 35% and for 19 year old drivers the reduction was 32%. This suggests that the benefits of increased driving experience in reducing accident risk is far greater than the benefits of increasing age.

5.2.2 The effects of increased driving experience were less noticeable for older novice drivers. The accident risk of a 25 year old novice driver decreased by 20% after their first year of driving, a 30 year old novice driver's accident risk decreased by 12% and a 40 year old novice driver's accident risk by only 1% between their first and second year of driving.

5.2.3 A study[18] of 809 learner drivers under 20 years old who had taken at least five professional driving lessons, found that the most significant reduction in accident risk occurred between the first six months of driving after passing the test and the second six months, suggesting that the first six months of driving are the most crucial.

5.2.4 In reality of course, the effects of increasing age and increasing experience as a driver are combined, and together they produce even higher reductions in accident risk. Overall, the accident risk of 17 year old novice drivers reduces by 43% after their first year of driving experience. For 18 year old drivers, the reduction is 40%, for 19 years old's it is 38%. The accident risk of 25 year old novice drivers reduces by about one quarter after the first year of driving.

5.3 Attitude and Behaviour

5.3.1 Young drivers consistently rate their own performance as above average.[19] And are more likely to equate 'good' driving with the ability to master the controls of the car at higher speeds. However, vehicle control is only part of being a good, safe driver. Studies[20] by the Driver Behaviour Research Group suggest that there are three stages of learning to drive:

Technical Mastery
Learning how to control and manouevre the vehicle. Until this is achieved the learner will be unsafe.

Reading the Road
Learning to read the clues and information to anticipate the actions of other road users, and how to handle unfamiliar road situations.

Expressive Phase
The manner in which the driver drives is an expression of his or her personality, attitudes and motives.

5.3.2 The research identified three basic types of poor driving behaviour: Lapses, Errors and Violations. Lapses are minor mistakes (e.g., trying to move off in third gear) and are more common amongst female and older drivers. Errors are a failure to manage a particular action correctly (e.g., failing to see a stop sign) and seem to be equally common amongst all drivers. Violations are deliberate deviations from safe driving behaviour and may or may involve committing motoring offences (e.g., speeding) and are more common amongst young drivers, especially males, and high mileage drivers.

5.3.3 Drivers who are "Violators" are generally aware that they are driving in deliberately dangerous or risky ways, but do so anyway because they believe that there will be few consequences (i.e., they are unlikely to get caught) and the benefits to them will be high. The research concludes that these types of drivers are unlikely to be affected by further training, and that attitudes will need to be addressed by education, publicity and enforcement.

5.3.4 The TRL Cohort study[21] included a survey of the attitudes of novice drivers. They tended to regard drinking and driving as a very serious offence and cause of accidents, but attached much less importance to exceeding the speed limit. However, they also regarded 'driving too fast for the conditions' as an accident cause, suggesting that they prefer to rely on their own judgement, rather than the posted speed limit, to decide what is an unsafe speed in any given circumstance.

5.3.5 Younger novice drivers were more willing to break speed limits, drive too close, cut corners, etc than more experienced drivers.[7]

5.3.6 Another study[17] suggested that deviant attitudes towards driving stemmed from broader personal characteristics and attitudes, and general social deviancy, suggesting that trying to tackle poor driving attitudes in isolation may be ineffective. Swedish research[22] that compared the lifestyles and accident data of 1,774 young (20 year old) drivers also found links between lifestyle and accident risk.

5.3.7 **Motoring Offences**

Another indication of driver attitude can be seen in the likelihood of committing motoring offences.[2] Novice drivers who have been cautioned, issued with a fixed penalty notice or summonsed for prosecution are more likely to be involved in accidents than those who have not. In the first year of driving, 42% of those who received a fixed penalty notice or a summons were also involved in an accident compared with 18% of those who had not. The figures were 26% and 12% respectively in the second year of driving and 21% and 11% in the third year.

5.3.8 The level of motoring offences does not seem to fall with increasing driving experience. Overall, 5% of novice drivers received a fixed penalty notice or summons in their first year of driving, 6% in the second year and 5% in the third year. The Cohort study estimated that novice drivers who received a Police warning were 39% more likely to be involved in an accident than those who had not, and those who had received a fixed penalty notice or summons had a 65% higher accident liability than those who had not.

5.3.9 The most common offences were speeding and dis-obeying traffic signs or signals. Maycock[15] suggests that young drivers have good speed judgement when it comes to assessing the speed of other vehicles and judging gaps in traffic, but poor speed judgement when choosing their own speed.

5.4 Gender

5.4.1 In general, male drivers have a higher fatality risk and are more likely to have accidents on bends, while overtaking and in the dark, than female drivers. Female drivers are more likely to have accidents at junctions and while manoeuvring.[14]

5.4.2 Young male drivers tend to drive at higher speeds than young female drivers, to adopt shorter following distances and to overtake more dangerously. They also commit more driving violations. (AA Fnd) The accident rate of novice female drivers is about 12% less than novice male drivers during the first three years of driving.[2]

5.4.3 Young male novice drivers are much more likely to commit driving offences than females. About 80% of the drivers who were alleged to have committed an offence were young and male.[2] 10% of 17 - 19 year old male drivers were issued with a fixed penalty notice or summons in their first year of driving (11% in the second and third years) compared to just 3% of women drivers in this age group. Similarly, young male drivers were more likely than others to receive a warning from the Police about their driving, and again the level of warnings did not drop significantly as driving experience increased.

5.4.4 A USA study[23] of the driving history of 4,403 young people who gained their licences at 16 years of age found that young men were more than twice as likely as young women to have committed a serious offence and 1.5 times as likely to have had a serious crash.

5.5 Skills/Ability

5.5.1 Although young drivers have good vehicle control skills, their higher accident risk in the first six months of driving indicates that driving skill is linked to accident risk during this period.[13]

5.5.2 Although novice drivers acquire vehicle control skills quickly, it takes them much longer to develop the risk assessment skills that are required to safely interact with other road users. Compared to experienced drivers, novices detect and assess hazards more slowly. They also under-estimate the risk of a hazard resulting in an accident and over-estimate their ability to deal with hazards.[24]

5.5.3 Novice drivers also find it more difficult than experienced ones to gather relevant visual information when driving, especially as road and traffic conditions become more complex. A study which measured the eye movements of 16 experienced and 16 novice drivers during a 20 minute drive on rural, urban and dual carriageway roads, found that as the traffic situation became more complex, novice drivers tended to spend longer looking at specific items whereas experienced drivers varied their visual search patterns to gather as much information as possible.[25]

5.6 Type of Driving

5.6.1 The likelihood of being involved in an accident falls with increased mileage.[2] However, this hides the effects of the amount of driving on different types of road. Increased driving in busy town centres increases accident liability whereas increased driving on quiet rural roads decreases it.

5.6.2 The amount of miles driven increases with each successive year of driving, although women drivers drive significantly fewer miles than men, and tend to drive on long journeys and on motorways less often than men[2].

5.6.3 Several studies have shown that driving in the dark is a more dangerous activity for novice drivers, and also that novices are more likely to be involved in accidents due to driving at inappropriate speed, following too closely, overtaking inappropriately.

5.7 Type of Vehicle

5.7.1 There is little evidence about the type of cars driven by young or novice drivers. The Cohort study found no link between the size of the car engine of vehicles in which a novice driver had had an accident and accident risk - novice drivers in larger cars had about the same accident risk as those in smaller cars. There was a small (statistically insignificant) link between the age of a novice driver's car and accident risk, in that drivers of older vehicles tended to have more accidents.

5.8 Accompanied Driving

5.8.1 An observational study[14] in which young drivers were observed without their knowledge found that the presence of young (25 years or younger) male passengers was associated with more dangerous driving by both young male and female drivers. Young female passengers resulted in safer driving by young male drivers, but had no affect on young female drivers.

5.8.2 Studies[26,27] in the USA have suggested that young drivers who carry passengers have a higher risk of crashing. A recent[28] study found that the incidence of crashes in which a 16 or 17 year old driver was killed increased with the number of passengers. In contrast, drivers aged 30 to 59 years old who carried passengers had decreased death rates. Crashes were more likely to be fatal to 16 and 17 year old drivers in the presence of male passengers, teenage passengers, and passengers aged 20 to 29 years. A follow-up study[29] predicted the net effect on all types of road users in the USA of prohibiting 16 and 17 year old drivers from carrying passengers younger than 20 years old. Based on 1995 casualty data, this study predicted such a prohibition would save between 83 and 493 deaths annually.

5.8.3 The highest death rate was among drivers aged 16 years who were carrying three or more passengers. In contrast, death rates per 10 million trips for drivers aged 30 to 59 years were lower for drivers with passengers than for those without passengers. Carrying passengers dramatically increased the risks of 16 and 17 year old male drivers. Carrying passengers also significantly increased the fatal crash risks of 16 and 17 year-old female drivers, but to a lesser extent.

5.8.4 Crash-involved 16 and 17 year old (male and female) drivers with male passengers were significantly more likely to die than those with only female passengers. Driver deaths per 1000 crashes more than doubled for both male and female drivers when there were two or more male passengers and nearly doubled with one male passenger.

5.8.5 An American survey[30] of 192 high school drivers reported that dangerous driving behaviours were strongly associated with the presence of peers. A roadside observation study[14] in Britain found that young drivers with male passengers tended to drive at higher speeds and follow vehicles more closely than those without passengers or with female passengers.

5.8.6 A review[31] of previous research into the role of passengers, identified several studies that found that carrying passengers often increased the risk of young drivers being involved in accidents, but sometimes (depending on the age and sex of the passenger) decreased their risk. Among the findings of previous research are:

- 'at fault' accident frequencies were greater for drivers who were frequently accompanied by friends as passengers, especially if they were in the youngest age group.
- the accident involvement rate for 16-19 year old drivers with passengers was almost twice that for drivers in this age group who travelled alone.
- passenger increased involvement in fatal crashes for drivers aged 24 and younger, had a neutral effect for drivers aged between 25 and 29 and reduced fatal crash involvement for drivers aged 30 and older.

5.8.7 This research also observed 850 drivers in a residential 30mph area to examine the relationship between drivers' speed (speed being used as an indication of their willingness to take risks and a predictor of accident involvement) and the presence of peer passengers. Roughly half of the drivers were aged 17 – 25 years and half aged 30 to 55 years. About 25% of the vehicles contained passengers. Speed was measured with a radar gun.

5.8.8 Male drivers were observed to drive faster than female drivers and younger drivers to drive faster than older ones. Male and female drivers aged 17 – 25 years who were carrying a male passenger, drove significantly faster than those who were driving alone. However, male drivers with a female peer passenger were observed to drive at significantly slower speeds. Older drivers with a passenger of any type were found to travel more slowly than those driving on their own.

5.8.9 Teenage passengers can be a positive influence. A group of young people aged 14-20 years formed the Bexley Road Safety Action Group (BRAG)[32] with support from Bexley Council. The Group devised and launched the "If Only …" campaign, which illustrates the consequences of dangerous driving by young people and encourages young car passengers to overcome any feelings of embarrassment and peer pressure and to tell the driver to slow down. "If Only …" was designed by young people to show young people that death or serious injury can be averted if action is taken by the passengers (and the driver).

5.9 **Parental Influence**

Analysis of the driver records of over 155,000 young drivers (18 – 21 years old) in North Carolina[33] suggests that the driving habits and records of parents influences the driving behaviour of their children. Young drivers whose parents had three or more crashes on their records were 22% more likely to crash at least once, compared with young drivers whose parents had no crashes. Young drivers whose parents had three or more driving offences on their records were 38% more likely to have a driving offence on their own record at least once, compared with young drivers whose parents had no offences. Sons tended to have poorer driving records than daughters – they were twice as likely to have been convicted of at least one driving violation and were also more likely to be involved in crashes.

5.10 **Why Do Novice Drivers Have A Higher Accident Risk? - Conclusion**

There are a wide range of reasons why young and novice drivers have a higher accident risk, but the main factors are:

- age
- lack of driving experience
- over-confidence in their abilities
- under-estimation of risk
- poor hazard perception
- poor attitudes to driving (which are usually linked to personal characteristics and general social attitudes)
- gender
- peer pressure (from passengers)
- parental influence.

6 HOW CAN NOVICE DRIVERS ACCIDENT RISK BE REDUCED?

6.1 PRE-DRIVER EDUCATION AND TRAINING

6.1.1 In order to learn to drive in Great Britain, a person must have a provisional driving licence, which can only be obtained from 17 years of age. It is recognised that there may be benefits in providing pre-driver education at earlier ages in the hope of influencing young people's knowledge and attitudes and instilling good habits before bad ones develop later.

6.1.2 There are many pre-driver education programmes in Britain. Some are national schemes, such as the DSA Schools Programme, the BSM's Ignition and Signal Programmes and MegaDrive. Some Local Authorities also operate their own schemes.

6.1.3 The House of Commons Environment, Transport and Regional Affairs Committee[34] recently recommended that "The [National] Curriculum should include compulsory lessons which cover the physics of driving, the statistics about the number of accidents involving young people, the penalties for committing road traffic offences, and the consequences of having an accident".

6.1.4 However, concern has been expressed that pre-driver education programmes may actually increase young drivers' risk by enabling them to pass the driving test sooner than they would otherwise have been able to do so, but without actually improving their knowledge, attitudes or driving behaviour. They may even encourage young people to drive before they are legally able to do so. As younger drivers have a higher accident rate, the increase in risk caused by younger drivers on the road may outweigh the benefits of the education programme.

6.1.5 The DSA's Schools Programme was launched in 1997 and involves driving examiners giving a presentation about the theory and practical driving tests and road safety issues at schools (and other places such as Young Offenders Institutions). It does not include driving practice. An evaluation of the Programme[35] assessed 32 presentations involving 947 students (mostly aged 16 and 17 years) who completed questionnaires before and immediately after the presentation and three months later. Knowledge and attitudes about driving and the driving test improved and students tended to accept that they still had much to learn about driving after passing their test, and that novice drivers take longer to react to hazards than experienced ones.

6.1.6 When Lord Whitty, then Minister for Roads, was asked in the House of Lords[36] whether driving schools should establish pilot schemes in schools, similar to ones run in the USA, his reply was that "The problem with young drivers is not so much their technical skill as their attitude. Improving their technical skill would not necessarily improve their performance on the road and prevent casualties".

6.1.7 A Scottish study[37] assessed a sample of 451 new drivers aged 17 to 21 years, who held a provisional driving licence but had had less than two hours of professional driving instruction. They were randomly allocated into three groups: Group 1 (Control Group) acquired their driving licence in the manner that was most suitable for them. Groups 2 and 3 did the same, but Group 2 also attended a one afternoon classroom-based 'standardised' pre-driver training programme, and Group 3 also attended a one afternoon classroom-based post-test course.

6.1.8 The study concluded that new drivers had already formed their attitudes, beliefs and intentions towards the driving by the time they started learning to drive. New male learner driver were less likely than females to abide by legal and social conventions with regard to speeding and were less likely to be affected by what their parents, friends or girlfriends thought about their driving. The post-test course appeared to produced some improvements in self-reported attitudes to safe driving. However, overall, neither the pre-driver or post-test course produced any significant differences between the three groups.

6.1.9 A USA review[38] of research into pre-driver education programmes for high school pupils found no convincing evidence that high school driver education reduced motor vehicle crash involvement rates for young drivers, and might, by providing an opportunity for early licensing, increase their accident rates.

6.1.10 A report published in the Lancet[39] reviewed several research studies into the effectiveness of driver education programmes in Australia, New Zealand and the USA, and stated that the programmes (all of which involved practical driving) resulted in the participants gaining their driving licences sooner than similar young people who had not been involved in the programmes, but did not result in lower accident involvement. The authors concluded that such courses could increase accidents involving young drivers. They also suggested that this finding applies to the DSA Schools Programme, although they had not actually assessed the programme.

6.1.11 An Australian study[40] compared pre-driver programmes which included off-road driving practice with similar programmes which did not include practical driving. The programmes were delivered to students aged 15 or 16 years in rural schools. Students who completed a programme which included practical driving obtained their learner permits and probationary licences at lower average ages than those who had not. However, there was no difference between two groups in the duration that they held their learner permits or the amount of experience they obtained during this period. There was a reduction in accidents and an increase in traffic offences amongst those who received practical driving lessons, but neither was statistically significant. There was no difference between the groups on most measures of driving-related attitudes and behaviours.

6.1.12 **Pre-Driver Education and Training - Conclusion**

Pre-driver education programmes may be able to help raise young people's awareness of the risks involved in driving, and develop positive attitudes about driving style. However, there is a need to define what is meant by 'pre-driver education' and to be clear about its objectives. Courses should focus on hazard perception, risk assessment and roadcraft rather than on vehicle control skills.

6.1.13 Further research is needed to examine whether pre-driver education, especially when it involves driving practice, does improve attitudes and knowledge, or whether such courses accelerate the pace at which young people are able to pass their test without having any discernable influence on their likely driving behaviour afterwards. An assessment of the optimum format and content of such courses is also needed. Are they more effective when actual driving practice is incorporated or not? Research should also assess whether or not these types of course encourage unlicensed driving.

6.2 LEARNER DRIVER TRAINING

6.2.1 In Britain**,** anyone aged 17 years and over wishing to learn to drive can obtain a provisional driving licence, which allows them to drive a car on public roads, except motorways, while under the supervision of a qualified driver who is at least 21 years old and has held a full driving licence for at least three years.

6.2.2 **Minimum Driving Age**
There have been calls to raise the minimum driving age in Britain from 17 to 18 years, on the grounds that younger drivers have more accidents and so raising the driving age would reduce accidents. Most European countries have a minimum age of 18 years before taking the driving test, although several allow accompanied driving from 17 years. Many States in America have a minimum age of 15 or 16 years, and some allow 14 year olds to drive.

6.2.3 TRL's Cohort Study[2] found that 18% of drivers who were 17 to 19 years old when they passed their test were involved in a road accident in their first year of driving. Only 12% of drivers who were aged over 25 years when they passed their test had an accident in their first year of driving. The study suggested that drivers who start to drive when they were 18 years old would have 9% fewer accidents in their first year of driving than those who started to drive when they were 17 years old. Drivers who began driving when they were aged 19 years would have 8% fewer accidents in the first year than those who began when they were 18 years old. The differences decreased with age so that drivers who started driving at 26 years were likely to have only 5% fewer accidents than those starting aged 25 years. Once drivers are into their second and third years of driving this age difference in accident liability reduces significantly.

6.2.4 Sweden lowered the age at which people can start learning to drive to 16 years. Subsequent evaluation indicated that this increased the amount of time learners spent on driving practice, but did not increase their accident rate while learning and, in fact, resulted in a lower accident rate in the first two years after getting a licence.[41] This may be because although learners could start driving earlier, they could not take their test until they were 18 years old or gain full licence until they reached their 20th birthday.

6.2.5 However, Norway reduced the age limit for learning to drive from 17 to 16 years in the mid 1990s (the minimum age for taking the driving test remained at 18 years) along with other measures to encourage learners to take more supervised driving practice. This has been effective in increasing the amount of supervised driving by learners, but there have also been increases in self-reported crashes and in the crash rate per kilometre driven, possibly due to the increased exposure as a result of more driving practice.[42]

6.2.6 Age increases the risk of being involved in accidents, although it only seems to be a short-term influence. The level of driving experience has a much greater effect. Delaying the age at which people can begin to gain driving experience might have some effect in reducing accident risk. However, there are other social issues (such as access to employment) that would need to be considered before the minimum driving age could be raised.

6.2.7 **Minimum Learning Period**

Another frequent suggestion is that learners should be required to gain a minimum amount of driving practice (which could be professional lessons and/or private supervised practice). In March 2002, the Government published a consultation document[43] seeking views on several options for improving novice driver safety, including introducing a minimum learning period. The document states that about 25,000 drivers a year pass their test within six months of obtaining their provisional licence. The Government estimates that a 12 month minimum learning period could reduce road deaths and serious injuries by 800 to 1,000 and all casualties by 6,000 to 7,000. It is estimated that a six month minimum learning period would save 120 deaths and serious injuries and about 900 casualties.

6.2.8 TRL's Cohort Study[44] found that male drivers who took longer to learn had significantly fewer accidents than those who completed their training in a short time. The same was true for women drivers, although the effect was not statistically significant. It is certainly logical that learners who spend more time learning and who cover more mileage gain more supervised driving experience.

6.2.9 **Log Books**

One way of helping to ensure that learners acquire a minimum amount of driving experience would be to implement a Logbook system where the amount, and type of, driving undertaken by the learner is recorded. The Driving Standards Agency has been operating a voluntary logbook scheme for some years, and the Government's consultation on novice drivers[43] includes an option to introduce a mandatory logbook scheme.

6.2.10 A trial of the voluntary Logbook scheme[45] found that the slightly more of the ADIs involved were in favour than against it, and the pupils were strongly in favour. The overall first time pass rate of Logbook users, most of whom were 17 years old, was 79%, which was significantly higher than the national rate. The sample was too small to show whether there were any differences in the pattern of driving faults between the Trial pupils and normal Test candidates nationally, but the major driving faults, i.e. 'use of gears' and 'use of mirrors', were the same in both groups.

6.2.11 The Log Book Scheme offers the possibility of removing some parts of the Driving Test, for example, the reversing manoeuvre, from the test and requiring an Instructor or superviser to certify that the learner has reached the requisite standard for each manoeuvre. This would then allow more of the time in the test for general driving on different types of road. This would, however, require a mandatory Log Book Scheme, and research to show whether learners would still acquire the necessary manoeuvring skills and that the re-allocation of time in the driving test was useful.

6.2.12 **Learner and Novice Driver Mentoring**
While there is on-going research aimed at improving the standard of ADI training (see paragraphs 6.29 – 6.34) little is available to help parents and others, who help learner drivers gain driving experience by supervising them during private practice. There is no evidence about current practice to indicate the variety, prevalence, distribution and effectiveness of current approaches to adult mentoring of young novice drivers.

6.2.13 In the USA there are many examples of 'contracts' between parents and novice drivers, where both agree to certain conditions about when, where and how the young driver will use the parents' car. They are often designed to enable parents to initially impose strict limitations on their children's driving in high-risk driving conditions (e.g., at night and with teen passengers) and to gradually increase driving privileges over time as their children demonstrate responsible driving behaviour.[46]

6.2.14 In a pilot study in Connecticut, 47 families with teenage age children who were learning to drive used the 'Checkpoints Parent-Teen Driving Agreement'. Most families (38 of 47) used and liked the agreement. In addition, most parents set the recommended strict initial limits on their children's driving by restricting driving unsupervised at night, with teen passengers, and on high-speed roads. Some parents set stricter limits than they originally intended.

6.2.15 Another USA study[47] assessed whether parents delaying the point at which their children obtained a licence and setting driving restrictions, resulted in less risky driving by their teenage children. 275 teenagers with a learner's permit and parents were interviewed about driving attitudes and teenage behaviour. One year later, 161 of them had obtained a provisional license and were re-interviewed. The results indicated that parents delayed their children obtaining their provisional licence until they felt they were "ready". They also limited their driving in terms of journey and risk conditions. Those teenagers who obtained their provisional licence at a younger age, and who had fewer initial restrictions on their driving, reported higher levels of risky driving behaviour. Overall, the results suggested that a combination of being older when licenced and restricting driving under high-risk conditions may be an effective way to limit teens' risky driving behaviour.

6.2.16 It is clear that parents are a key influence on their children's initial driving behaviour. Research is needed to examine common approaches, mentoring styles and skills to help parents provide effective supervision and guidance to their children, firstly as they learn to drive and then within the high-risk period after passing their test. There appears to be considerable scope for the development of good practice guidance and resources to help mentors to improve the safety performance of young learner drivers. The DSA Log Book Scheme offers a useful opportunity for developing the role of parents in helping their children become safe drivers.

6.2.17 **Mandatory Professional Instruction**

It is often suggested that learner drivers should be required to take a minimum number of driving lessons with a professional instructor. The Cohort Study[48] examined the effects of professional driving tuition and practice with family and friends. Of the 29,500 learner drivers involved, 98% had taken some professional instruction. Female learners generally took more professional lessons than males, and older learners also took more lessons. 65% of the learners also practised with family members or friends.

6.2.18 Of the few who took no professional instruction, 59% passed their test. This compared poorly with the 74% pass rate for those who took between 1 and 5 hours of professional instruction. The pass rate for those who took between 6 and 10 hours of instruction was 77% and 72% for those who took between 11 and 15 hours. However, the pass rate fell steadily for those who took more than 15 hours of instruction, possibly because they were poorer drivers, or had the most difficulty in mastering the ability to drive – which is why they needed more tuition.

6.2.19 A different pattern was found for learners who practiced with family or friends. The pass rate for those who did not practice between professional lessons was 49%. Those who had between 1 and 5 hours of practice had a 59% pass rate, those who had between 6 and 10 hours of practice had a pass rate of 60% and those who had practiced for between 11 and 15 hours had a 63% pass rate. Unlike, professional instruction, the pass rate increased as the amount of practice increased.

6.2.20 The best pass rates in the Cohort study were achieved by learners who had relatively small amounts of professional instruction, supported by private practice. The results also suggested that it may be better to have more professional tuition in the early stages of learning to drive, but more private practice in the later stages, as the driving test approaches.

6.2.21 A study[17] of 809 learner drivers also found that both instruction and practice are important in developing driving skills and ability. Instructors reported that those who practiced between lessons were better drivers and more responsive to tuition. Another study[49] of 46 learner drivers, who completed a diary every time they drove and were assessed five times before their test and once soon afterwards, found that the learners made fewer errors as they gained real driving experience. Pupils whose main teacher was a parent and those whose main teacher was a professional instructor had similar initial levels of driving skill and seemed to learn at the same rates. Practice with family and friends appeared to be more effective than professional instruction in helping learners acquire driving skills, but both were essential to passing the test. Training was of more benefit to learners with lower initial ability.

6.2.22 Almost all learner drivers take some professional lessons, and the best learning method seems to be a combination of private practice and professional tuition. However, the optimum number of professional lessons is unclear and would vary between individuals. A disadvantage of requiring a minimum number of lessons may be that learners who would normally take more than the minimum number, may feel that they only need to take the minimum and so take fewer lessons than they would otherwise have done.

6.2.23 **Content of Driver Training**

A recent study[50] followed twenty learner drivers as they had lessons with professional instructors. The learners had about 30 hours of tuition (but no extra practice between lessons) before taking their first driving test. During their training, they carried out around 2,000 manoeuvres, although the number of times certain manoeuvres were performed (e.g. overtaking, roundabouts) was probably lower than necessary to establish consistently high levels of performance. The study suggested that at least 50 hours of lessons would be needed for learners to be fully and consistently competent to conduct manoeuvres well in all the traffic situations they are likely to meet.

6.2.24 The amount of instruction given on each manoeuvre reduced as the course proceeded. The instructors tended to relate their instruction to the situation at hand, and place little focus on aspects of the driving task which the pupil was not actually carrying out. The vast majority of instructions related to the use of car controls and road positioning. The instruction reduced in frequency over the course of lessons, and changed in character, becoming shorter and less dominated by car control issues. This may be because once pupils have acquired the necessary control skills, other difficulties (e.g., distance and gap judgement) became more apparent.

6.2.25 The study concluded that lessons need to include as many manoeuvres as possible and as many separate lessons should be given as possible. Individual lessons should be reasonably long, but double length lessons are less effective than normal length lessons of about 50 minutes of driving. Ideally the course should cover a long time span, rather than be concentrated into a brief period of time.

6.2.26 The authors also suggested that skills such as understanding risks and anticipating the actions of other road users do not currently receive explicit tuition, and seem unlikely to become established through the current mode of formal instruction to a degree sufficient to serve drivers reliably in their later driving career.

6.2.27 One study[17] suggests that high risk drivers can be identified during training, which would allow training to be tailored to the aspects of driving that are increasing their risk. Although the learners, especially males, were confident and rated themselves highly as drivers, they were also able to identify which aspects of their driving might make them unsafe drivers. Instructors' ability to judge which learners will fail their test, and which will have a high accident risk seem to be accurate, which again could be used as a basis for identifying higher risk novice drivers.

6.2.28 A new framework for driver training has been proposed[51] which would place much more focus on the motivational and psychological aspects of driver behaviour. A driver's accident risk is determined by his or her ability to control and manoeuvre their vehicle and to cope with traffic situations. But just as importantly, by their driving style, which is influenced by their attitudes to, and reasons for, driving. This, in turn, is related to their personal characteristics, lifestyle and attitudes. Driver training and education needs to address all these issues, and to enable drivers to evaluate the things about themselves, and about different driving situations, which increase their accident risk.

6.2.29 **Approved Driving Instructors (ADI)**
The Road Traffic Act 1988 requires that anyone who provides paid car driving instruction must be on the Register of Approved Instructors (or hold a Trainee Licence), which is administered by the Driving Standards Agency. To be register as an ADI, candidates must have held a clean driving licence for four of the past six years, provide two character references and pass a three-part qualification process: -

- A computer-administered theory test (touch screen, multiple choice)
- A practical test of the individual's driving ability
- A practical test of the individual's ability to instruct

6.2.30 The three parts must be taken in order. A candidate can have unlimited attempts at the first part but then once they have passed Part I must complete the remaining two parts within two years. A maximum of three attempts at Parts II and III are allowed within each two year qualification period. If Parts II and III are not completed within the two year period the applicant has to start the whole process again.

6.2.31 Once qualified, the ADI is registered for four years and is usually subject to at least one 'Check Test' during this time, during which their performance is graded. Grade 1 is the lowest and Grade 6 the best, with only Grade 4 and above being considered satisfactory. If the ADI achieves Grade 3 or lower a further Check Test must be taken. A maximum of three is allowed after which an ADI will generally be removed from the Register.

6.2.32 The effectiveness of any training depends, to a large extent, on the ability of the people providing it. A review of the Training and Qualifications of ADIs [52] included a telephone survey of a random selection of 2,000 ADIs. On the basis of the survey, the authors concluded that the 'typical' ADI could be described as: -

'*Working by himself, middle aged, has no further qualifications and has had no further training in the past five years….and teaches learner drivers for 25 hours per week.'* [1]

6.2.33 The study recommended improvements to ADI training, including requiring Part III candidates to maintain a training record logbook and that legislation be introduced to ensure only trainers and establishments licensed and inspected by an appointed body be permitted to train ADIs for reward. The study also recommended that the ADI grading system be retained, but that ADI grades be published. Improvements to the system of Check tests of ADIs were recommended, along with ways of encouraging ADIs to take further Continuous Professional Development to maintain and improve their standards.

6.2.34 **The Trainee Licence**
ADIs can obtain a Trainee Licence (TL) before passing the Part III test, which lasts for 6 months. Some TL holders never pass the Part III exam but generally charge the same fees as a fully qualified ADI for instruction. The study recommended the abolition of the Trainee Licence and its replacement with a Probationary Licence, granted on passing Part III, for 12 months. It would then, subject to meeting pre-set criteria, be converted to a full ADI Certificate.

6.2.35 **Learner Driver Training – Conclusion**
Driver training is clearly crucial, but should not focus simply on developing the knowledge and skills required to pass the driving test. Driver training courses should focus on risk assessment, hazard perception, and personal and social characteristics that increase accident risk and affect the way learners are likely to drive once they have passed their test.

6.2.36 Both professional tuition and private practice are important when learning to drive, although the optimum mix of these two methods is unclear. Since almost all (98%) learners take lessons with a professional instructor, it is unlikely that introducing a regulation to make this mandatory would have very much effect in improving the standard of training for learners or reducing novice driver accident risk. On the other hand, such a regulation would seem to have few dis-advantages.

6.2.37 Age is a factor that increases the risk of being involved in accidents, although it only seems to be a short-term influence, and is not as important as driving experience. Raising the minimum driving age to 18 years might have some effect in reducing accident risk. However, there are other social issues (such as access to employment) that would need to be considered before the minimum driving age could be raised. There is some evidence that reducing the age at people can learn to drive, may have positive results if linked to a graduated system where they are not allowed to take a driving test until 18 years.

6.2.38 The Logbook Scheme has the potential to improve the structure of driver training, and ultimately, play a role in the testing process. It should be a mandatory part of learning to drive.

6.2.39 Greater publicity about the training requirements for ADIs would allow learner drivers to make a more informed decision about their training provider. ADIs should be required to publish their Grade, or whether they only hold a Trainee Licence. The recommendations from "Raising the Standards of Approved Driving Instructors" should be implemented.

6.2.40 Research should be conducted to assess how parents and other mentors help learner drivers gain driving experience by supervising them during private practice. Good practice guidance and resources should be developed to help mentors to improve the safety performance of young learner drivers.

6.3 THE DRIVING TEST

6.3.1 The driving test in Great Britain consists of:

Theory Test
The Theory test was introduced in 1996, firstly as a written test, but then in 2000 as a screen-based computer test. Candidates must answer 35 multiple-choice questions chosen randomly from a bank of 400, and in order to pass must answer 30 correctly. The questions cover driver attitude and awareness; traffic signs and regulations; the effects of alcohol, drugs and tiredness on drivers' behaviour; and safety and environmental aspects of vehicles. Learners must pass the Theory Test before they can take the practical test.

Practical Test
The Practical Test lasts about 40 minutes and is designed to see if the candidate can drive their vehicle safely on the road; carry out set manoeuvres such as reverse parking and a turn in the road; and know the Highway Code. The Examiner chooses one of several set routes and continuously monitors the driver for pre-set errors, which may be marked as minor, serious or dangerous.

6.3.2 As a road safety measure, the Driving Test has a number of functions:

i. Ensure that learner drivers have sufficient training and practice
ii. Influence the content of the training they receive
iii. Prevent drivers who are not yet sufficiently safe from qualifying.

6.3.3 Since most drivers who fail the test, retake it until they finally pass, it is argued that the main purpose of the Test is to influence the level and content of driver training.[53]

6.3.4 As with all tests, the driving test does not show how an individual will actually behave in real life. During the test, candidates will be on their best behaviour and trying very hard to drive in a way which will mean that the Examiner will pass them. Thereafter, the driver can then choose to drive how they wish. There are also indications of variations in the driving test results. A study[54] in which 366 candidates took their driving test as normal, but were not told the result, and then took a second test a few days later found that only 64% of the candidates received the same results (pass or fail) in both tests.

6.3.5 As discussed in section 5.3, underlying attitudes, and intended behaviour, are crucial, and the driving test currently has no means of assessing these attitudes. There are ways of assessing attitudes and intended behaviour, but how they could be incorporated into the driving test is unclear. A Review of the Practical Driving Test[53] suggested that it would be possible for test candidates to fake the attitudes necessary to pass, although there may be some benefit in using attitude measurements to stress the importance of 'bad attitudes' and rule breaking behaviour as things which increase risk, rather than to try to identify and fail people who have such attitudes.

6.3.6 **Hazard Perception Test**

Research[55] has shown that poor hazard perception is one of the reasons why inexperienced drivers have a higher accident risk, and that drivers with better hazard perception skills have lower accident rates. The Driving Standards Agency will introduce a Hazard Perception Test, as part of the Theory Test in Autumn 2002. Test candidates will view a range of video clips of road situations and need to show that they can anticipate and react appropriately to changing traffic situations.

6.3.7 It has also been shown that hazard perception skills can be taught to novice drivers in order to help to reduce their accident liability. A trial[55] of a hazard perception test using video clips to evaluate the potential for including such a test in the theory test involved one hundred novice drivers (half male, half female) who had less than 2 years driving experience and one hundred experienced drivers (again, half male, half female) with ten or more years of driving experience. Subjects had to press a button as soon as they identified a hazard, and were scored accordingly. The results showed a statistically significant difference between experienced and novice subjects. Also, higher hazard perception scores were associated with lower accident liability, although this association was not statistically significant. However, it did suggest that increasing driver's hazard perception scores would reduce their accidents.

6.3.8 A second trial[55] involving 150 learner drivers, 150 novice drivers and 150 experienced drivers. Again, the subjects were scored according to their first response times from when a hazard could have been spotted until it became a fully developed hazard. The results showed that older drivers and those with a higher annual mileage had higher hazard perception scores. Self-reported accident data showed a significant difference between the average accident liabilities of novice and experienced drivers.

6.3.9 Another trial of a Hazard Perception training package involved candidates who were taking their theory test. They were divided into three groups, all of whom took a Hazard Perception Test immediately and another one about eight weeks later. The control group received no training, the second group received an hour of basic training between the tests, and the third group received one hour of basic training plus two separate hour-long sessions using more advanced training modules. The results showed that learner driver test scores increased with the level of training received. The conclusion was that hazard perception skills can be trained in learner drivers.

6.3.10 Research at the University of Southampton[56] investigated the effect that two forms of training, on-road and classroom, had on the hazard perception skills of 144 (80 male and 64 female) drivers aged between 17 and 25 years old, all of whom had passed their driving test within the previous three months. The subjects were divided into four groups. Group 1 did not receive any training. Group 2 undertook a two-hour classroom-based hazard perception course. Group 3 did the same, but a month later also received an on-road training course. Group 4 received just the on-road training course. Each of the three groups who received training made a statistically significant reduction in their average hazard perception times after training. The average hazard perception time in the control group also reduced, but not significantly. The group that received both classroom and on-road training produced the most significant reduction in average hazard perception time, followed by the on-road trained group and then the classroom trained group.

6.3.11 The results showed that the hazard perception training can reduce hazard perception times, and that on-road and classroom training together produce the most significant improvements, but such training involves twice as many hours as when given separately. Laboratory results were reflected in the findings of on-road data, suggesting that a laboratory hazard perception test is a valid tool for assessing young drivers' hazard awareness, and can be related to their actual on-road driving performance.

6.3.12 A review of research into hazard perception showed the following results:

- The longer the subject's response time the higher their accident frequency.[57]

- The decrease in response latencies on retest shown by a group of drivers taking a RoSPA advanced driving course [which is not solely concerned with hazard perception training] clearly points to the benefits of such training for hazard perception skills.[58]

- Drivers who had been involved in an accident in the previous three years had significantly worse hazard perception scores than drivers who had remained accident-free.[59]

- A Hazard Perception Test was able to discriminate between subjects on the basis of driving experience and recent crash involvement.[60]

- Measurements of hazard perception identified those cases involved in some types of police reported casualty accidents. The HPT measures identified fatal and serious injury accident for novice drivers generally and other injury accidents for 18 year-old females specifically.[61]

6.3.13 **The Driving Test - Conclusion**

The Driving Test has improved in recent years, most notably with the introduction of the Theory Test and the extension of the Practical Test. However, there is still little evidence to show whether it actually produces safer drivers, nor whether the behaviour of candidates during the test reflects the way they will actually drive once they have their full licence. It may be that no test could achieve this distinction, which may also be an argument for a probationary period, a graduated driver licensing system and/or regular re-assessments of driving ability.

6.3.14 It is clear that novice drivers have poor hazard perception skills and that this is one of the reasons for their higher accident risk. Research has shown that new drivers can be trained in hazard perception skills, which will reduce their accident risk. The computer based Hazard Perception Test to be introduced in Autumn 2002 is probably the most significant change to the Driving Test for decades and is warmly welcomed.

6.3.15 Further research into the Driving Test is underway and the government is expected to consult on possible changes to the Test in the near future.

6.3.16 Consideration should be given to ways of developing attitudinal and intended behaviour measurements that could be incorporated into the driving test.

6.4 POST-TEST MEASURES

6.4.1 One of the weaknesses of the UK's driver licensing system is that once the driving test has been passed, the driver is licensed, virtually, for life with no requirement, and very little incentive, to develop their driving skills any further. Only 3% of respondents to a questionnaire survey as part of the TRL's Cohort Study,[13] had taken any further driving instruction after passing their test. Most of these had taken further lessons with an ADI, some had attended a better Driving course run by the Police or Road Safety Officers and some had taken a course run by another organisation. Having said that, there are some post-test measures in place in Britain.

6.4.2 Pass Plus

The Pass Plus scheme is aimed at new drivers who would like to improve their basic driving skills and widen their driving experience. Pass Plus involves extra learning in different conditions, such as at night and on urban and rural roads, dual carriageways and motorways. There is no test, but after completing the course, drivers can obtain reduced insurance premiums from a number of insurance companies who are involved in the scheme.

6.4.3 Fife Pass Plus Initiative

Following concerns that less than 3% of new drivers who passed their test in Fife went on to take a Pass Plus course, the Road Safety Unit launched an initiative to subsidise the cost (partly through sponsorship and partly through ADIs providing one hour of tuition free). This significantly increased the number of new drivers who decided to take Pass Plus. An evaluation[62] in which 600 participants completed a questionnaire when registering for Pass Plus, nine months later and again after a further nine months, found that more males (341) registered for Pass Plus than females (259) and more males (269) than females (213) completed the scheme. Over half of the participants (55.6%) were 17 years old when they registered for Pass Plus. Almost one third (31.1%) were aged 18 years, 9.6% were 19 years old and 3.7% were 20 years.

6.4.4 The respondents were asked what driving situations they had found difficult since passing their driving test. Over half (57%) of the males said "none", whilst 57% of females said they had some concerns. Those, both male and female, who said they had had problems, quoted "entering a bend too fast" and "motorway problems". Females had more worries about overtaking than males. About 12% of all respondents said they were sometimes "not sure when to use lights". Nine months later, the number who had concerns about various driving situations had fallen. It is not possible from this evaluation to assess the extent to which this was due to the Pass Plus course or to increased driving experience. But both males and females said that after completing Pass Plus they were more confident about driving, and had better observation skills and car control.

6.4.5 Nationally, over 100,000 drivers have taken part in the scheme, but as yet, there is no evaluation of the effectiveness of the Pass Plus Scheme in reducing the accident risk of novice drivers.

6.4.6 **The New Drivers Act**

The Road Traffic (New Drivers) Act 1995 came into force on 1 June 1997, and in effect introduced a probationary period for new drivers. The driving licence of any driver who first passed their driving test on or after 1st June 1997 is revoked if they acquire six or more penalty points within two years of passing their test. To continue driving they must obtain a provisional licence, drive as a learner (and so are only able to drive when displaying an L Plate and while supervised) and pass both the theory and practical tests again. The penalty points remain on their new driving licence, and if the total reaches twelve points, the driver may be disqualified again. Since its introduction, close to 40,000 new drivers have had their licences revoked in this way.

6.4.7 As yet, there is no research to show what effect this legislation is having on reducing novice driver accidents and casualties. However, it seems likely that it does target those new drivers whose driving behaviour is such that they are drawn to the attention of the Police.

6.4.8 **Northern Ireland "R" Plate Scheme**

A probationary "R" Plate Scheme has existed in Northern Ireland since 1 April 1968[63]. For one year after passing their driving test, newly qualified drivers must display "R" plates at the front and rear of the vehicle they are driving, and are restricted to driving at a maximum speed of 45 mph. (Learner drivers are also subject to the 45 mph limit).

6.4.9 A review of the effectiveness of the Scheme in 1994[64] found no evidence that it reduced road accidents or casualties. In fact, novice drivers in Northern Ireland have a worse accident record than in Britain.[65] The changes to the Driving Test in 1999 included using dual carriageways and higher speed roads in test routes. However, in Northern Ireland learners are restricted to 45 mph which means they cannot be trained or tested at speeds above this. Therefore, following a consultation[66], the Department of Environment in Northern Ireland have decided to amend the relevant legislation to remove the 45 mph restriction for learners and newly qualified, "R" drivers. The Department also intends to review the "R" plate scheme.

6.4.10 **Driver Development Courses**
RoSPA, the IAM and other organisations provide a range of Advanced, Defensive and Development courses for drivers, some of which are provided as part of Fleet Driver training packages and some of which are provided to individuals.

6.4.11 The term "defensive driving" describes a variety of learned techniques that if practised consistently by drivers will improve their safety and performance. There are a number of different approaches to defensive driver training. The approach followed by RoSPA teaches a 'system' of driving which enables drivers to ensure that their vehicle is in the correct position, travelling at an appropriate speed and in the right gear to negotiate hazards safely and efficiently. Courses address driver attitude, anticipation, planning and hazard management, and aim to help trainees to:

- develop a correct and professional **ATTITUDE** towards driving and other road users;
- improve **CONCENTRATION;**
- optimise **OBSERVATION** so that they seek information about their driving environment and prioritise potential danger;
- analyse and anticipate the actions of others and create and maintain **SPACE** and **TIME** to deal with hazards or avoid the inappropriate actions of others.

6.4.12 Those who complete the RoSPA course can further develop their driving skills by preparing for and taking the RoSPA Advanced Driving Test. Test standards are monitored and approved by The Driving Standards Agency and some of the courses qualify for BTEC vocational qualifications. The Institute of Advanced Motorists (IAM) and other organisations also provide advanced driver training and testing.

6.4.13 RoSPA trainers have identified[67] a series of common faults among drivers at the beginning of defensive driving courses:

- Excessive speed
- Poor Observations
- Approaching junctions too fast
- Poor steering techniques
- Failing to use the rear view mirrors.

6.4.14 Driver development courses are normally provided by employers who have decided to invest in driver training for their staff. A number of companies have evaluated the effectiveness of the RoSPA driver training they have received. The results include:

- A multinational company with over 1500 drivers, reported a 68% reduction in accidents and 60% reduction in costs when comparing 600 drivers who had been trained with a control group of 950 who had not been trained.

- A major oil company reported that 4% of its trained drivers had a blameworthy accident compared with over 12 % of those who had not been trained. Non-trained drivers were also involved in twice as many non-blameworthy accidents as their trained colleagues.

- A large company reduced its accident rate from 37 to 9 accidents per million mile during a three year training programme

- Another major company trained just under half of its drivers and reported reductions of 8 % and 9% in its incident reports in the first year.

6.4.15 In November 2001, HSE/DTLR Work-Related Road Safety Task Group, which was formed as part of the Government's Road Safety Strategy, recommended that existing health and safety at work law be applied to on-road work activities, including occupational driving, and that employers should include measures to manage at-work road safety within their existing health and safety management systems[68]. The Driving Standards Agency are developing a voluntary Register for Fleet Driver Trainers[69] in order to set and maintain minimum standards for fleet driver training.

6.4.16 Therefore, it is likely that the provision of further driver training by employers will grow significantly over the next few years. However, as advanced and defensive driver training courses are normally provided by employers for their staff, they probably do not reach many novice drivers.

6.4.17 RoSPA offer driver assessment courses for new drivers who want to improve their driving. The course involves a 45-minute drive following which the driver is advised on the things they do well, and the areas on which they could improve so that they will be less likely to have accidents, and where they can obtain further help."

6.4.18 **The National Driver Improvement Scheme**

The National Driver Improvement Scheme (NDIS) originated from the Road Traffic Law Review of 1988 (The North Report), which recommended that:

"*A pilot study of one day retraining in basic driving skills as a disposal should be undertaken to determine whether such retraining produces a lasting improvement in the driving skills of the offender undertaking it."* [70]

However, unlike many of the other recommendations of the report, this has not yet been incorporated into legislation. A pilot study began in Devon in 1991 when Devon and Cornwall Constabulary, Devon County Council and the CPS collaborated to develop and launch the Driver Rectification Scheme. This has become known as The National Driver Improvement Scheme and is now adopted by over 40 police forces in Great Britain.[71]

6.4.19 The Scheme is predominantly run by local government with about thirty service providers receiving client referrals from the police forces involved. The police can consider drivers who have been involved in a blameworthy collision, and who would normally face the charge of 'driving without due care and attention', for inclusion in the scheme. They have also referred small numbers of other drivers where they felt the driver was demonstrating a standard of driving below the acceptable minimum.

6.4.20 To be offered a course, the driver must have a full licence, must not be facing any other charges, and must not have taken a NDIS course within the previous three years. Drivers must pay a fee to cover the cost of the course. The incentive for offenders to elect to take the course is that a court prosecution will not be proceeded with if the course is completed. Approximately 85% of those offered a NDIS course accept the offer. Those who refuse to take the course, or fail to complete it, will usually be prosecuted for their original offence. The NDIS is, therefore, a direct alternative to court prosecution and not a sentencing option. In this way it differs from similar schemes in other countries.

6.4.21 NDIS courses last one and half days, one third of the time is spent in the lecture room with the remainder of the time spent on a practical driving exercise. The classroom session explores specific driving issues:

- Participants' beliefs regarding the causes of traffic collisions
- Causes of traffic collisions
- Social influences on driving behaviour and accident risk
- Anatomy of an accident
- Client perceptions of risk
- Hazard perception and risk control
- Stress and time management
- Fatigue.

6.4.22 During the practical driving sessions a qualified driving instructor takes a group of three drivers out on the public roads. Each person drives for about 15 minutes and then with the vehicle stationary, the instructor initiates a discussion between everyone in the car before the next driver takes over.

6.4.23 A study of the effectiveness of the NDIS[72] involved a survey of 1,821 clients who had attended an NDIS course between October 1997 and September 1998. About 20% were 17-21 years old, 70% were male and 25% had passed their driving test within the previous two years. Almost all (96%) had been involved in a blameworthy collision. They completed the Driving Behaviour Questionnaire (DBQ) and the Driver Attitudes Questionnaire (DAQ). The DBQ records self-reported frequencies of three types of inappropriate driving behaviour: lapses, errors and violations. The DAQ assesses attitudes towards four common violations: drinking and driving, tailgating, dangerous overtaking and speeding. Questionnaires were completed four weeks before attending the course, immediately after the course and three-months later.

6.4.24 The study found that there were significant reductions in the self-reported frequency of lapses, errors and violations in the three-month period following the course. It also found that clients' attitudes towards traffic violations were significantly improved and that clients were better oriented to general safety immediately after completing the course, and at the three month follow-up. Attitude scores related to drink-drive offences, dangerous overtaking and tailgating showed small positive changes after the course. In contrast, the change in attitude towards speeding was significantly improved after the course and remained so after three months. The study did not analyse responses by age or driving experience and therefore the results are generalised for all drivers, not specifically novices.

6.4.25 The study concluded that "Attending the NDIS courses has a significant effect on changing clients' attitudes and self reported behaviour in the desired direction". A further three-year evaluation of the effectiveness and content of the NDIS is underway, as well as an International Review of Driver Improvement Schemes.

6.4.26 **Driver Improvement Schemes in Other Countries**
Evaluations of driver improvement programmes in other countries have produced mixed results. 43 out of the 52 US jurisdictions provide some form of driver improvement initiative. Participation in the course is mandatory in 23 states and in 19 states drivers can choose to take the course in the hope of reducing their period of licence suspension.[73] This review noted that some studies failed to show that driver improvement courses were effective accident countermeasures, but others indicated that they were effective, but only among certain specific age and sex groups. It also included a study of repeat traffic offenders in Arizona to compare the relative effectiveness of two alternative approaches, one focused on accident prevention and one on recidivism prevention. It found that offenders participating in recidivism prevention schemes experienced 18% fewer accidents during the year following their offence than those attending accident prevention schemes.

6.4.27 **United States and Australia**
A review of 19 studies covering 59 driver improvement schemes in the USA and Australia, found that a positive effect on violations did not also produce a corresponding positive effect on subsequent accidents.[74]

6.4.28 A study in California of over 35,000 drivers undertaking Traffic Violator School Programs, concluded that the program does have a positive effect in reducing the risk of accidents and has an impact in minimizing traffic injuries and fatalities.[75]

6.4.29 **Germany**
In the 1960s and early 1970s West Germany introduced a series of programmes to improve the knowledge, attitudes and behaviour of drink drivers, particularly young/novice drivers committing offences within the two year probationary period, repeat offenders and first time offenders. An evaluation[76] of the programmes concluded that the systematic integration of driver improvement programmes into the existing legal and administrative framework provided a more promising route to traffic safety in the medium term than demands for radical changes in legal sanctions. However, it noted that the measures should not be viewed as a substitute for legal sanctions.

6.4.30 **Drink Drive Rehabilitation Courses**
Young male drivers under 30 years involved in injury accidents have the highest incidence of failing a breath test. In 2000 of the drivers involved in an injury accident who were breathalysed, 22% of under 17 year olds, 5% of drivers aged 17-19 and 6% of drivers aged 20–24 years, failed the test compared with an average of 3.5% of drivers aged over 25 years.[1] Young males are more likely to fail a breath test than females.

6.4.31 Drink Drive Rehabilitation Courses also have their origins in the North Committee Review on Road Traffic Law[70], which recommended a large-scale experiment in the use of courses to influence the attitudes of drivers who had committed drink-drive offences. The experiment would examine whether offenders who had attended courses was less likely to re-offend than those who had not been given the opportunity to attend courses.

6.4.32 The Road Traffic Act 1991 allowed Courts to reduce the disqualification period of convicted offenders if they completed a Rehabilitation Course. The experimental period was due to last until the end of 1997, but was extended until the end of 1999. The experimental period was then given permanent effect across the whole of Great Britain from 1 January 2000.[77]

6.4.33 Therefore, unlike the NDIS, the drink-drive rehabilitation course is a sentencing option. The Court can offer a driver, who has been convicted of a drink-drive offence and disqualified for at least one year, the opportunity to attend a course. Those who successfully complete the course are eligible for a reduction of up to 25% in their period of disqualification. The course must be completed two months before the expiry of the reduced period of disqualification. Generally the courses are targeted at first-time offenders, although High Risk Offenders are not excluded.

6.4.34 The courses are run by several different organisations including Probation Services, Road Safety Departments, hospitals, charities and private companies. The DTLR have laid out a framework of issues to be covered in the course including:

- Information about alcohol and its effects on the body
- The effect of alcohol consumption on performance, particularly driving ability and behaviour
- Analysis of drink/driving offences
- Alternatives to drinking and driving
- Sources of advice.

6.4.35 The courses seek to promote sensible drinking by educating drivers in the need to separate drinking and driving. Generally, they run for 8-10 weeks with about 8 – 10 drivers completing sessions of 2-4 hours per week. Each participant pays a fee to cover the cost of the course.

6.4.36 The TRL monitored the effectiveness of the courses during the experimental period.[78] They tracked three groups of drivers, all of whom had been convicted of drink/driving between 1993 and July 1996:

- Those convicted at 19 experimental Courts who attended a course.
- Those convicted at 19 experimental Courts who did not attend a course.
- Those convicted at 19 'control' Courts where courses were not offered.

6.4.37 Approximately 42% of all offenders convicted of drink/driving at the experimental Courts were referred for a course. Those who chose not to accept the opportunity to go on a course were often concerned about the cost. Most of the offenders had been sentenced for one offence only (related to driving or attempting to drive whilst over the limit, or unfit to drive) and had been disqualified for less than two years. Nearly 30% were High Risk Offenders.

6.4.38 The study found that only 3.4% of offenders who had attended courses had been convicted of a subsequent drink/drive offence compared with 9.6% of those who had not. Offenders aged 30 to 39 years benefited more from the training than older or younger offenders. Offenders reported attitudes to drinking and driving had changed positively. After the course, 35% of attendees felt that they should not drink any alcohol when driving compared to 8% before the course. Attendees reported that the course had changed their attitude to drinking and driving and this was still the same 18 months after conviction.

6.4.39 **Schemes in Other Countries**

In Europe, young drivers are not generally over-represented in alcohol related accidents except on weekend nights.[79] In the USA young people are over-represented in driving accidents involving alcohol. In some states it is illegal to drink in licensed premises under the age of 21 and about 35 states restrict drivers aged 21 and under to 40mg/100ml or lower. Young drivers (16-24) make up 14% of the US driving population but were involved in 28% of all alcohol-related driving accidents.[80]

6.4.40 Evaluation of drink/driver rehabilitation schemes in other countries, most notably in the USA and Australia, have found that recidivism is reduced in those who have attended courses when compared with offenders who have not. A recent study[81] in Australia examined both licence sanctions and rehabilitation programmes and concluded:

- Programmes can have a 7-9% reduction in recidivism in addition to the benefits shown by licence sanctions
- Programmes can impact on alcohol-related crashes and drink driving recidivism, but unlike licence sanctions do not appear to impact on non alcohol-related crashes. However the benefits shown by the programmes appeared to be longer lasting than those shown by licence suspensions.
- Drink/driver programmes can impact on knowledge and attitudes toward drink driving, lifestyle characteristics and psychosocial functioning
- Multi-model programmes, i.e. those which included counseling, education, probation, licence suspension or a combination of these, are more likely to result in a positive outcome than single interventions.

6.4.41 The study concluded that evaluations of rehabilitation programmes had generally been positive.

6.4.42 The recidivism rate over nine years of 504 male drivers who took a Driver Improvement course in Melbourne was 27.5% compared with a rate of 21.6% for an age matched control group of 671 drivers who were eligible but did not attend. The usefulness of the course was advocated, particularly for males under 25 years prior to their re-licensing application.[82]

6.4.43 However, a 1988 study[83] in Melbourne concluded that no differences were found in reconviction rates between treated and non-treated groups and felt that such programmes had little effect on traffic safety measures. In the same year the Social Development Committee of Parliament in Victoria concluded in their inquiry into the management of drink drivers that drink driving education programmes have an important role to play in reinforcing the deterrent effect of the penalty system and complementing broader health promotional activities aimed at reducing the incidence of alcohol related problems in the community.[84]

6.4.44 **United States**
Studies undertaken in the USA generally support the effectiveness of drink driver rehabilitation programmes, although one study suggested that licence suspension is generally more effective than rehabilitation courses in reducing the accident risk of drink drive offenders. The results of that study did suggest that using both sanctions simultaneously would be superior to either measure used alone.[85]

Post Test Measures – Conclusion

6.4.45 Although some post-test measures exist in Great Britain, they are limited in scope. The only drivers who are required to take any further training after having passed their driving test are ones who have been ordered to do so by the Courts, or ones whose employer requires it as part of their terms and conditions of employment.

6.4.46 Drivers can voluntarily take further training, such as Pass Plus or courses offered by driver training providers such as RoSPA, the IAM, GEM and others, but there is little incentive for individual drivers to do so. Therefore, new ways of encouraging drivers to continue to develop their driving skills after the test are needed.

6.4.47 The HSE/DTLR Work-Related Road Safety Task Group recommendations that health and safety at work law be applied to on-road work activities, including occupational driving, and that employers should include measures to manage at-work road safety within their existing health and safety management systems, should be implemented as a priority.

6.4.48 Research should be conducted to establish the effectiveness of the Pass Plus Scheme and to identify ways to encourage more novice drivers to take it.

6.4.49 Research in Northern Ireland was unable to find any evidence that the "R" driver scheme reduced accidents. However, the situation in Northern Ireland during the trial was significantly different from the rest of the UK, and the findings may not be applicable across the whole of the UK. Several other countries require new drivers to display a registration mark identifying them as novice drivers as part of a graduated licence system (see section 7). Requiring new drivers to display "P" plates is one of the options being considered in the Government's novice driver consultation paper.

6.4.50 Drivers aged under 25 years are more likely to be involved in accidents, and commit driving offences, than older drivers. They display poor driving behaviour and attitudes and are, therefore, logical targets for Driver Improvement Schemes. Often as first time drink-drive offenders they are eligible for Drink-Drive Rehabilitation Courses. Research strongly indicates that both Driver Improvement Schemes and Drink-Driver Rehabilitation Courses are effective and are likely to grow in use.

7 GRADUATED DRIVER LICENSING

7.1 A more comprehensive approach to post test measures is the development of Graduated Driver Licensing Systems. Many countries, or States within countries, have introduced some form of Graduated Driver Licensing, although the nature and content of the Systems vary considerably. However, they all involve the phased acquisition of a full driving licence. There is an initial period of supervised-only driving, followed by an intermediate license stage with restrictions on unsupervised high-risk driving (often nighttime driving and driving with passengers), leading to full unrestricted licence.

7.2 Usually, the first stage is a provisional (or permit) licence that enables a learner to drive while supervised. Once a driver passes his or her test, there is some form of probationary period during which the novice driver is subject to restrictions (such as lower speed limits or stricter consequences for committing traffic offences). Finally, after a set period, and possibly a compulsory second training course, the driver gains a full, or permanent, licence. No current system seems to require drivers to pass a second, compulsory test.

7.3 The Government's consultation paper about improving the way people learn to drive is seeking views on a wide range of options, many of which form parts of Graduated Driver Licensing Schemes in other countries.

7.4 **Europe**

The EU-Project "DAN" (**D**escription and **A**nalysis of Post Licensing Measures for **N**ovice Drivers) reviewed post-licensing measures in EU-countries.[86]

Austria

Austrian drivers can obtain a driving licence from 17 years of age. There is a Probationary period of two years after passing driving test, during which time they are subject to a zero alcohol limit. Anyone convicted of traffic offences during the probationary period must participate in a compulsory driver improvement course. Evaluation of the system suggests that accidents involving novice drivers fell by 32% between 1991 and 1995, compared to a reduction of only 9% for other drivers. This is partly due to a reduction in the number of novice drivers. Evaluations of the driver improvement courses for drink driving indicate that the recidivism rate reduced by 50% compared to control-groups.

Germany

In Germany, novice drivers are subject to a probationary driving licence for two years after passing the driving test. Drivers convicted of motoring offences can have their probationary period extended for another two years, in addition to being required to participate in a compulsory driver improvement course. Evaluation of the system has been hampered due to the very significant changes caused by the re-unification of West and East Germany, but indicate a small reduction in the accident frequency of 18 and 19 year old male drivers.

Finland
In Finland, novice drivers cannot obtain a full licence for at least 18 months after passing their driving test, and not before they have taken a "second phase" driving course (which must be taken between 6 and 24 months after passing their test). During this probationary period, drivers are subject to stricter rules concerning traffic violations. Evaluation studies suggest that, taking into account the changing number of licences and lower exposure, accidents involving:

- young males (18 to 20 years) fell by 25%
- older males (21 years plus) fell by 50%
- young females (18 to 20 years) fell by16%
- older females (21 years plus) did not change.

France
France has two systems, the traditional one and the Apprentissage system. Novice drivers can choose which one to follow. In the traditional system, drivers can obtain a provisional licence at 18 years of age, and are subject to lower speed limits and stricter consequences for traffic offences. If a novice driver is disqualified, he or she must re-take the driving test. Voluntary driver improvement courses are available through which penalty points can be eliminated. In the Apprentissage system drivers can obtain a licence at 16 years of age which allows them to drive while accompanied, but they must take a minimum of 20 hours of professional instruction, pass a theory test and are subject to the restrictions imposed in the traditional system. Those who go through the Apprentissage system tend to drive much more than those who go through the traditional system.

About 25% of young learners in France choose the Apprentissage system. Early evaluation suggested very high reductions in accident rates. Later studies did not show such high reductions.[ref529]

Luxembourg
In Luxemburg, novice drivers are subject to a probationary period for two years after passing the driving test. During this period, they must display a white "L" on their car and are subject to lower speed limits. They have to carry a book in which any traffic violations and accidents are recorded. Novice drivers must also complete a one-day compulsory safe driving course within 6 to 24 months of passing their driving test. After this course, they may drive at the normal speed limits and remove the "L" sign, but must still wait until the end of the two year probationary period before obtaining a permanent licence. Evaluation of the compulsory safe driving course indicated a statistically significant reduction in accidents involving young male drivers, but not for females.

Portugal
In Portugal, novice driver must re-take the driving test if they are disqualified from driving for traffic offences. They may also be required to participate in a driver improvement course.

Spain
In Spain, novice drivers are subject to a lower speed limit of 80 km/h for one year after passing the driving test.

Sweden

In Sweden, the age limit for learning to drive was dropped from 17.5 years to 16 years in order to give learners more time to train and practice before taking their test. Subsequent evaluation showed that learners who started earlier took much more practice and their accident rate per kilometre driven fell by 46% during their first two years of driving. A skid training course must be taken before the driving test. The driving test can be taken from the age of 18 years, and is followed by a probationary period. If a driver is disqualified during this period, he or she must re-take their driving test.

7.5 The DAN report makes a number of recommendations:

- An extended supported learning period for novice drivers regardless of age should be implemented on a mandatory basis.
- The specific measures of the extended supported learning period should be targeted at novice drivers and their problems, and should include general preventive multi-phase education which incorporate in-car training as well as psychological elements concerning personal attitudes.
- Driver improvement and rehabilitation courses for those convicted of traffic offences focussing on personal characteristics and attitudes.
- A probation period with demerit point systems and feedback of about two to five years for novice drivers
- A zero-Alcohol limit for novice drivers should be introduced.

7.6 **Norway**

Norway reduced the age at which people could learn to drive from 17 to 16 years in 1994/95, but left the minimum age for taking the driving test at 18 years.[87] It also introduced other measures to encourage learners to take more supervised driving practice. Over half of the eligible drivers began learning to drive before they were 17 years old. The number of trips and the distance driven under supervision increased. However, there was an increase in self reported crashes in the first few months after passing their test, and a (not statistically significant) increase in the crash risk per kilometre travelled based on Police injury crash reports.

7.7 **United States of America**

In 1996, Florida became the first USA State to enact a multistage system.[88] By 2001, Thirty-seven States had introduced some form of Graduated Licensing System in an attempt to reduce accidents involving young drivers.[89] It should be noted that a learner's driving licence can be obtained at age 15 or 16 years in many States, and even at age 14 years in some States. One important difference between graduated systems in the United States and those in other countries is that in many States the systems apply only to drivers under 18 years old.

7.8 The nature of the Graduated Licensing Systems differ between States (the Insurance Institute for Highway Safety has produced "A Blueprint for Graduated Licensing."[90]) but involve one or more of the following:

- Minimum amount of time before the test can be taken.
- Minimum amount of supervised driving during learning stage (sometimes a proportion must be at night, and sometimes the amount is reduced or cancelled if training is taken with a professional instructor.
- Restrictions on driving unsupervised during intermediated stage (after having passed the driving test).
- Restrictions on carrying passengers.

7.9 In Florida[91], drivers can start learning to drive when they are 15 years old. Drivers under 18 years old are subject to night-time driving curfews, which become less restrictive as the driver gains experience. Initially, they are not allowed to drive between 7:00 pm and 6:00 am. After three months, they may drive until 10:00 pm. After six months, they obtain an intermediate licence, which further reduces the nighttime driving curfew. All drivers under 18 years old have strict limits on the number of traffic violations they can accumulate and all drivers younger than 21 years are subject to a zero alcohol limit.

7.10 Analysis of accident data found a 9% reduction in the fatal and injury crash involvement rate of drivers aged 15 to 17 year-old during the first full year of graduated licensing. Crashes declined most among 15 year-olds (by 19%), followed by 16 year-olds (by 11%) and then 17 year-olds (by 7%). The rate for 18 year olds (who were not subject to the curfews) did not change significantly. Reductions were not seen among Alabama (a neighbouring State that does not have graduated licensing) teenagers.

7.11 In California, the minimum age for learning to drive is 15 years. New drivers younger than 18 years are not allowed to drive unsupervised, to drive between midnight and 5:00 am nor to transport other teenage passengers unless accompanied by a driver aged 25 years or older. A 20% reduction in at-fault fatal and injury accidents for 16 year old drivers has been reported and a 21% reduction in deaths and injuries amongst teenage passengers of 16 year old drivers.[87]

7.12 The North Carolina GDL system was introduced in December 1997 and requires learner drivers aged 15 to 17 years to hold level 1 licences which allow driving only while supervised by a designated adult for a full year. This is followed by a level 2 licence which allows unsupervised driving from 5 am to 9 pm and supervised driving at any other time for at least six months. Finally, they obtain a level 3 licence which allows full, unrestricted driving at any time. A study[92] of motor vehicle crash rates among 16-year-old drivers before and after the system was introduced showed that rates declined sharply for all levels of severity among 16-year-old drivers after the GDL program was implemented. Following GDL, fatal crashes involving 16 year old drivers declined 57%, crashes with no or minor injuries decreased by 23%, nighttime crashes were 43% less likely and daytime crashes decreased by 20%.

7.13 In Kentucky, learners can start at 16 years of age after passing a written test and eyesight exam. They must be accompanied by a driver at least 21 years old, are subject to a night-time driving restrictions (under 18 years only) and a zero alcohol limit (under 21 year olds). After passing a driving test, they obtain an 'under 21 licence' but are still subject to the night-time curfew and alcohol limit and must pass an education course within one year. A full licence can be obtained from the age of 18 years. Initial evaluation[87] indicated that was a 33% drop in the per-driver accident rate for 16 year olds, and in accidents after midnight involving 16 year old drivers. Fatal accidents after midnight fell by 27% and injury accidents by 34%. Alcohol related accidents involving teenagers fell by 30%.

7.14 However, following concern that the system was not proving as effective as expected, 700 law enforcement officers, over 40 judges and 100 people who implement or are affected by the GDL programme were interviewed. [93] There was a widespread lack of awareness about the night-time driving restriction and a substantial number of young drivers received little driving practice during the learner permit phase. Some restrictions were difficult to enforce and the penalty of licence suspension after several traffic violations was not a sufficient deterrent.

7.15 Oregon introduced its system in 1989 from when learner permits could be obtain from 15 years of age on passing a written test. Learners must be supervised by a driver aged 21 years or more and are subject to a zero alcohol limit. Drivers aged 16 years can obtain a provisional licence by passing a written and practical driving test, after which they can drive unsupervised but are subject to the zero alcohol limit (under 21 years old only) and stricter penalties for traffic violations. This resulted in a 16% fall in accidents involving 16 and 17 year old male drivers in their first year of driving. Oregon's system was changed in 2000 to include night-time driving and passenger carrying restrictions.

7.16 **New Zealand**

New Zealand introduced a Graduated Driver's Licensing System in 1987 to give young drivers, aged 15 to 24 years driving experience while excluding them from high risk driving situations. A learner's permit is available from 15 years of age and must be held for at least six months. Learners must be supervised and are subject to a zero alcohol limit and night-time driving restrictions. They must pass a practical test to gain a restricted licence which includes passenger-carrying and night-time driving restrictions (unless accompanied by a qualified driver) and the zero alcohol limit. Drivers must pass a second test to gain a full licence. Analysis[94] of injury crash data between 1979 and1992 showed that after the System was introduced accidents involving 15 – 19 year old drivers fell by 23%. However, those involving drivers aged 20 – 24 years also fell, by 12% and those involving drivers aged 25 years and older fell by 15%. It seemed likely that the crash reduction may have been due largely to an overall reduction in exposure.

7.17 **Canada**

Six jurisdictions in Canada have some form of graduated driver licensing: Ontario, Nova Scotia, New Brunswick, Quebec, British Columbia and Newfoundland. The graduated licensing program was introduced in Nova Scotia in 1994 and included a 6-month Learner Phase (LP) followed by a 24-month Newly Licensed Driver Phase (NLDP). While learning, novice driver must be accompanied by an experienced driver; not carry any other passengers are subject to a zero BAC limit. This can be reduced to three months by completing a driver education or training course. To enter the NLDP phase, the learner must pass a road test, and can then drive unsupervised, but with certain restrictions: a nighttime driving curfew unless accompanied by an experienced driver; a zero BAC limit, and passengers are limited to the number of available seat belts. To graduate from the NLDP, the novice must complete a recognised driver training course.

7.18 Evaluation[95] found that there was a 24% reduction in the crash ratio of 16-year-old drivers, and a 34% decrease in their casualty crash ratio between the pre-program and post-program periods. No significant reductions occurred in jurisdictions that had not introduced a graduated system. A later evaluation compared 1993 data with 1995 and 1996 data and found that the ratios for 16-year-old drivers in 1996 had fallen by 36%, and for 17 year olds, by 11%. Ontario, Canada, reported a 31% reduction in the crash rate for novice drivers subsequent to graduated licensing.

7.19 **New South Wales**

In New South Wales young drivers aged 17-25 years account for 16% of licensed drivers and riders but 27% of all road traffic casualties. A New Graduated Licensing Scheme for New Drivers (GLS)[96] was introduced in July 2000. Under the scheme, novice drivers must obtain a minimum of 50 hours on-road supervised driving experience and pass four tests and three licensing stages before obtaining an unrestricted driver licence. The four tests are:

- The computer-based **Driver Knowledge Test (DKT)** which must be passed before obtaining a learner licence.
- The **Driving Ability Road Test (DART)** which must be passed before graduating to a provisional P1 licence.
- The **Hazard Perception Test (HPT)** which must be passed before graduating to a provisional P2 licence.
- The **Driver Qualification Test (DQT)** which must be passed before graduating to an unrestricted licence.

7.20 New drivers in NSW will now have at least 36 months of experience (42 months minimum for drivers who are under 25 years of age when they obtain their learner licences) and will have passed four tests before finally graduating to a full licence. They have to gain experience under various traffic conditions, and this must be recorded in a logbook, signed by the learner's supervisor (usually a parent). This progression through the licensing stages means that new drivers will be at least 20 years of age before obtaining an unrestricted licence instead of the previous 18 years.

7.21 **Graduated Driver Licensing - Conclusion**

Graduated Licensing Systems offer opportunities to provide phased driving experience for new drivers during the period when they are most at risk of being involved in an accident, and of reducing their exposure to the factors that are most dangerous to them (speed, alcohol, night driving, carrying passengers).

7.22 However, systems vary across the world, and within countries, and it is not clear what form of system is most effective, nor which components would be most feasible and effective in Britain.

7.23 There are already elements of a Graduated Licencing System in place in Britain, such as the New Drivers Act, and other elements, such as Log Books and Pass Plus, which could form part of such a system. The Government is currently consulting on the feasibility of introducing various elements of graduated licensing in Britain.

8 Vehicle Technology

8.1 Vehicle technology is developing at an extremely fast rate, and inevitably affects (either positively or negatively) the way drivers perform. It offers several opportunities to influence driver behaviour in ways that would reduce accident risk.

8.2 There are a number of products which can be used to help drivers, and fleet operators, evaluate their performance and identify further training needs. Currently, this type of technology is mostly implemented by companies who operate goods-vehicle fleets. The incentive for companies to incur the expense of equipping their fleets with this technology is that it will produce cost-savings in the longer-term by reducing accident rates, and lower fuel consumption.

8.3 **Journey Data Recorders (JDRs)**
These can fitted to vehicles, including cars, to record information about how the vehicle is driven. They record data from the tachograph (if fitted), the speedometer, rev counter, fuel flow meter and brakes. The stored information can be downloaded for analysis to highlight drivers who are not driving safely or economically. This can be used by managers to identify training needs or take other appropriate action. Some JDR's include dashboard warning lights to alert the driver if they are driving dangerously or uneconomically so the driver can take immediate action to rectify the problem. Case studies have shown that they can help to reduce both costs and incidents and improve fuel consumption. [97]

8.4 **Accident Data Recorders (ADRs)**
The 'black box' well known in the investigation of aircraft incidents is now being fitted to cars, vans, lorries, buses and coaches to find out why and how an incident happened. Racing cars have been fitted with data recording equipment for many years, to assist the engineering support team during the race and to analyse the causes of any crashes. Vehicle ADRs record incident information such as acceleration, braking and movement of a vehicle before and during an accident.

8.5 Research in the Netherlands assessed whether drivers who know they are being monitored and who receive feedback from the information collected, change their driving behaviour. [98] The study of seven experimental vehicle fleets (matched with a similar control group found a reduction in accident risk of about 20% on average, although the safety effect of the intervention varied considerably between the different vehicle fleets.

8.6 Research in Great Britain found that the use of ADR's over a period of 12 months reduced incidents by 28% and costs by 40%. The project included nine fleets with a total of 341 vehicles in the UK. [97]

8.7 **Incident Data Recorders (IDRs)**

Other technology, such as 'Smart' airbags, are being developed which can record the following information: -

- Pre-crash speed
- Engine rpm
- Accelerator position
- Brake pedal position
- Whether the driver's seatbelt was fastened
- Whether the car was started after the bag deployed
- Minor impacts that did not trigger deployment of the bag

The data obtained from airbag sensors is already being accessed in the USA and manufacturers are being asked to ensure that the information is readily available. Some State Police Forces are using the information in crash investigation.

8.8 In 1998, the Metropolitan Police were involved in 5,500 crashes, including six fatal. Consequently, they are fitting 2,900 patrol cars with an Incident Data Recorders (IDR's) over a period of three years. It is hoped this will encourage drivers to moderate their behaviour. The Metropolitan Police to fit the devices and they are hoping for 20% reduction in collisions and 40% reduction in the cost of repairs. In a similar initiative in Berlin, after IDR's were fitted to 380 police vehicles, collisions were reduced by 21% and crash costs by 42%.[97]

8.9 **Vehicle Tracking Systems**

These can show the exact positions of fleet vehicles, the routes and time taken, which can help managers check if a driver is taking regular breaks, taking the most sensible route and driving at appropriate speeds. One company fitted an On-board Management System and Route-Replay Vehicle Tracing System to its fleet of six vans to prevent poor driving habits, extend the life of vehicles, increase driver safety, and identify the most efficient routes. The system grades drivers on safety and efficiency. When first introduced the drivers were achieving grades of 69-75%, which has improved to all drivers gaining more than 95%. The company has also seen reductions in speeding, over revving and harsh braking, as well as financial savings on fuel costs.[97]

8.10 **Intelligent Speed Adaptation**

As far as individual, private car drivers are concerned, Intelligent Speed Limiters perhaps offer the best opportunity for using vehicle technology to influence their driving behaviour. As young and novice drivers are particularly susceptible to driving at inappropriate speed, they also target this high-risk group of drivers.

8.11 These are external devices on the roadside which communicate with a corresponding device on passing vehicles. They aim to reduce the vehicles speed by either providing information to the driver or by physically preventing the vehicle from exceeding the speed limit for a particular road. There are different varieties of External Vehicle Speed Control (EVSC) devices:

- Advisory EVSC

Information is provided to the driver, but the vehicle's speed is not automatically limited.

- Driver Select EVSC

Information on the speed limit is linked to the vehicle controls, but the driver has the option of enabling or disabling the control of maximum speed.

- Mandatory EVSC

The external device automatically limits the vehicle's maximum speed.

8.12 There are also various possible EVSC Systems:-

- Fixed EVSC

An EVSC system with knowledge of the posted speed limits.

- Variable EVSC

A fixed EVSC enhanced to provide slower speed limits at particular geographic points in the road network, in particular for sharp horizontal curves.

- Dynamic EVSC

An EVSC system enhanced to provide lower speed limits in response to current conditions of the road network (it is assumed that the system will also have the capability of Variable EVSC). The system would respond to the presence of incidents downstream as well as to congestion and to environmental conditions such as fog or ice.

8.13 An evaluation of the issues concerning intelligent speed limiters was undertaken by Leeds University and the Motor Industry Research Association (MIRA).[99] The study assessed EVSC's in controlled conditions using a simulator and a modified car on a real road. Both Driver Select and Mandatory Systems were evaluated.

8.14 The Mandatory System successfully reduced excessive speed, particularly in areas where drivers are renowned for being poor at adapting their speed, for example in rural villages. The use of the Driver Select system was relatively high but drivers were prone to disengage the system at locations where speeding was the norm for the surrounding traffic. Drivers preferred to be in control of the system operation and turn it off when they felt vulnerable or under pressure from other drivers. This is also a symptom of a mixed traffic environment, with increased use of the system by all or most vehicles; drivers may be less inclined to disengage the system.

8.15 The study found marked differences between the simulator experiment and the on-road trial. In the simulator there was evidence of the effect of increased frustration in the form of more close following and the acceptance of smaller gaps at intersections. This was not replicated in the real-road driving, perhaps because the traffic in front tended to move away from the EVSC car.

8.16 Both trials confirmed that speed is always dictated predominantly by the road layout, road features and traffic conditions. In both trials driver speed choice was generally more appropriate with EVSC.

8.17 However, the predicted levels of accident reduction from Intelligent Speed Adaptation are substantial.[100]

Predicted Accident reductions from ISA in Great Britain[100]

Intervention Level	**Speed Limit System**		
	Fixed	**Variable**	**Dynamic**
Advisory	10%	10%	13%
Driver Select	10%	11%	18%
Mandatory	20%	22%	36% (59% reduction in fatal accidents)

8.18 Unfortunately, the implementation of this technology is predicted to take up to 19 years, allowing time for further research and development, the development of standards, for the motor industry to produce ISA vehicles and then for the number of vehicles fitted with ISA technology to become a high enough proportion of the overall vehicle parc for mandatory use to be feasible.

8.19 **Vehicle Technology - Conclusion**

In-vehicle technology is, and always will, rapidly develop and change. It offers many opportunities for providing ways of monitoring and evaluating driving practices and a drivers' competence and capabilities. Most systems are likely to be fitted to fleet, rather than privately owned, cars for the foreseeable future. This means that they are mainly able to influence people who drive for work. Although this includes young and novice drivers, they do not seem likely to be the main group who will benefit initially.

8.20 However, the longer term development of Intelligent Speed Adaptation offers very significant opportunities for influencing drivers' choice and use of driving speed. Given that speed-related accidents are a particular problem for young and novice drivers, this technology will be able to target this more vulnerable group.

8.21 Further research is needed to assess whether taking some of the vehicle control away from drivers would have any adverse affects, but the development and implementation of this technology should be strongly encouraged.

9 CONCLUSION and POLICY STATEMENTS

9.1 Young and novice drivers are more likely to be involved in road accidents than more experienced drivers. They are more likely to be involved in high-speed accidents, accidents in the dark, accidents when overtaking and when negotiating bends. They are also more likely than experienced drivers to be at fault for accidents.

9.2 There are many, inter-relating reasons why novice drivers have more accidents.

Age
Younger drivers are more likely to be involved in accidents because they are young, but once they have had one or two years driving experience the effects of age on their accident risk seems to disappear.

Experience
Lack of driving experience is a major reason for the higher accident risk of novice drivers, especially in their first three years of driving. As new drivers gain more driving experience, their accident rate begins to fall. However, the effects of increasing age and increasing driving experience combine, and together they produce even higher reductions in accident risk. Overall, the accident risk of 17 year old novice drivers reduces by 43% after their first year of driving experience. For 18 year old drivers, the reduction is 40%, for 19 years old's it is 38%. The accident risk of 25 year old novice drivers reduces by about one quarter after the first year of driving.

Attitude
Attitude and motivation are perhaps the most difficult factors to address, because they are very closely linked to personal characteristics and general attitudes and beliefs. Young, male drivers are particularly likely to choose to drive in deliberately risky ways, and are also more likely to have accidents. Young drivers consistently rate their own performance as above average and are more likely to equate 'good' driving with the ability to master the controls of the car at higher speeds. They are more willing to break speed limits, drive too close, cut corners, etc than more experienced drivers. There is evidence that poor attitudes towards driving stem from broader personal characteristics and attitudes, and general social deviancy.

Gender
Novice male drivers have higher accident rates than novice female drivers, and are more likely to commit driving offences. Young male drivers tend to drive at higher speeds than young female drivers, to adopt shorter following distances and to overtake more dangerously.

Driving Skills
Young drivers tend to have very good vehicle control skills (although for a period, these skills require much of their cognitive attention). However, they are very poor at identifying potential hazards, assessing the risk of the hazard resulting in an accident and tend to over-estimate their ability to avoid the hazard and accident.

Passengers

Young drivers, especially males, who carry young (peer) passengers are more likely to have an accident, possibly because they tend to show off or try to maintain an 'image' by the way they drive. This problem is worse if the passenger is male. However, carrying older passengers, or female passengers, may be a restraining influence on some young male drivers and reduce their likelihood of accident involvement.

9.3 The main way of trying to prepare new drivers for a lifetime of safe driving are driver training, testing and licencing systems.

9.4 **Pre-driver Education and Training**

Many countries, including Great Britain, offer voluntary pre-driver education programmes, which sometimes, but not always, include off-road driving practice. Education programmes that focus on positive attitudes, risk awareness and legal issues may help to prepare young people for learning to drive and to develop positive attitudes about driving style. However, there is concern that these courses, especially when they include driving practice, may be counter-productive. If they enable young drivers to pass their driving test (when they become old enough to take it) more quickly than they would otherwise have been able to do, but fail to have much impact on their driving attitudes and behaviour, they may do more harm than good. There is also concern that they may encourage unlicensed driving by those too young to obtain a licence.

9.5 Therefore, further research is needed to examine whether pre-driver education, especially when it involves driving practice, does improve attitudes and knowledge, or whether such courses accelerate the pace at which young people are able to pass their test without having any discernable influence on their likely driving behaviour afterwards. An assessment of the optimum format and content of such courses is also needed - are they more effective when actual driving practice is incorporated or not? Research should also assess whether or not these types of course encourage unlicensed driving.

9.6 **Minimum Driving Age**

Age increases the risk of being involved in accidents, so that younger drivers have a higher accident risk because (in part) they are younger. However, this seems to be a short-term influence, and not as important as driving experience. Raising the minimum driving age to 18 years might have some effect in reducing accident risk, but there are other social issues (such as access to employment, especially in rural areas) that would need to be considered before the minimum driving age could be raised. There is some evidence that allowing people to begin to learn at a younger age may have positive results if linked to a graduated system where they are not allowed to take a driving test and drive unsupervised until 18 years.

9.7 **Minimum Learning Period**

An alternative approach would be to require learners to gain a minimum amount of driving practice. It is estimated that a 12 month minimum learning period could reduce road deaths and serious injuries by 800 to 1,000 and all casualties by 6,000 to 7,000; and a six month minimum learning period would save 120 deaths and serious injuries and about 900 casualties. Therefore, a minimum learning period of 12 months should be set.

9.8 **The Log Book Scheme**

The Government is currently consulting on proposals for making the Learner Driver Log Book scheme a mandatory requirement for all learners. RoSPA believes that a mandatory Log Book would be an effective means of ensuring that learners obtain a minimum amount of driving experience in different driving conditions.

9.9 Developing the Log Book Scheme to play a part in the driving test should be investigated. For instance, driving manouevres could be removed from the driving test and become part of the Log Book so that an instructor certifies when a learner has achieved consistency in performing each manoeuvre.

9.10 **Learner and Novice Driver Mentoring**

Research should be conducted to assess how parents and other mentors help learner drivers gain driving experience by supervising them during private practice. Good practice guidance and resources should be developed to help mentors to improve the safety performance of young learner drivers.

9.11 **Mandatory Professional Instruction**

Almost all learners take some lessons with a professional instructor. Therefore, making it mandatory to do so would probably have little effect, although there seem to be few dis-advantages to doing so. Both professional instruction and private practice are important when learning to drive. There does not seem to be a consensus about what would be the optimum mix of private practice and professional instruction, nor what the minimum number of lessons should be.

9.12 **Minimum Number of Professional Lessons**

A minimum number of professionals lessons could only be set if professional instruction was mandatory. It is not clear how many professional lessons should be regarded as the minimum. Some learners take few lessons and some take a considerable number. Setting a minimum might mean that those learners who would otherwise have taken more than the minimum, would only take the minimum required. Therefore, setting a minimum number of lessons might be counter-productive.

9.13 **Content of Driver Training**

There is evidence that driver training courses tend to concentrate on vehicle control skills and place too little emphasis on attitudes, behaviour, risk assessment and hazard perception skills.

9.14 **ADI Standards**

ADIs should be required to publish their Grade, or whether they only hold a Trainee Licence, to allow learner drivers to make a more informed decision about their training provider. The recommendations from "Raising the Standards of Approved Driving Instructors" should be implemented.

9.15 **The Driving Test**

The Driving Test has improved in recent years, however, there is still little evidence to show whether it actually produces safer drivers, nor whether the behaviour of candidates during the test reflects the way they will actually drive once they have their full licence. It may be that no test could achieve this distinction, which may also be an argument for a probationary period, a graduated driver licensing system and/or regular re-assessments of driving ability.

9.16 **Hazard Perception**

It is clear that novice drivers have poor hazard perception skills and that this is one of the reasons for their higher accident risk. Research has shown that new drivers can be trained in hazard perception skills, which will reduce their accident risk. The computer based Hazard Perception Test to be introduced in Autumn 2002 is probably the most significant change to the Driving Test for decades and is warmly welcomed.

9.17 Further research into the Driving Test is underway and the government is expected to consult on possible changes to the Test in the near future.

9.18 Consideration should be given to ways of developing attitudinal and intended behaviour measurements that could be incorporated into the driving test.

9.19 **Post-test Measures**

The current post-test measures in Great Britain are limited in scope. Very few drivers take any further training or assessment once they have passed their driving test. The only drivers who are required to take further training are ones who have been ordered to do so by the Courts, or ones whose employer requires it as part of their terms and conditions of employment.

9.20 Drivers can voluntarily take further training, such as Pass Plus or courses offered by driver training providers such as RoSPA, the IAM, Gem and others, but there is little incentive for individual drivers to do so. Therefore, there is a need to develop new ways of encouraging drivers to continue to develop their driving skills after the test.

9.21 The HSE/DTLR Work-Related Road Safety Task Group recommendations that health and safety at work law be applied to on-road work activities, including occupational driving, and that employers should include measures to manage at-work road safety within their existing health and safety management systems, should be implemented as a priority.

9.22 Research should be conducted to establish the effectiveness of the Pass Plus Scheme and to identify ways to encourage more novice drivers to take it.

9.23 **"R" or "P" Plate Schemes**

Research in Northern Ireland casts doubt on the effectiveness of the "R" driver scheme. However, the situation during the trial was significantly different from the rest of the UK, and the findings may not be applicable across the whole of the UK. Several other countries require new drivers to display a registration mark identifying them as novice drivers as part of a graduated licence system. Consideration should be given to developing a trial scheme in Great Britain.

9.24 **National Driver Improvement Schemes and Drink Drive Rehabilitation Courses**

Drivers aged under 25 years are more likely to be involved in accidents, and commit driving offences, than older drivers. They display poor driving behaviour and attitudes and are, therefore, logical targets for Driver Improvement Schemes. Often as first time drink-drive offenders they are eligible for Drink-Drive Rehabilitation Courses. Research strongly indicates that both Driver Improvement Schemes and Drink-Driver Rehabilitation Courses are effective and are likely to grow in use.

9.25 **Graduated Driver Licence Systems**

Graduated Licensing Systems offer opportunities to provide phased driving experience for new drivers during the period when they are most at risk of being involved in an accident, and of reducing their exposure to the factors that are most dangerous to them (speed, alcohol, night driving, carrying passengers).

9.26 Systems vary across the world, and within countries, and it is not clear what form of system would be most feasible and effective in Britain. There are already elements of a Graduated Licensing System in place in Britain, such as the New Drivers Act, and other elements, such as Log Books and Pass Plus, which could form part of such a system. The Government's consultation on novice driver safety includes options for introducing various elements of Graduated Licensing. However, it will be necessary to assess the feasibility and benefits of these options, and to consider the most optimal form of such a system in Britain.

9.27 **Vehicle Technology**

Vehicle technology is, and always will be, a rapidly developing and changing field. It offers many opportunities for providing ways of monitoring and evaluating driving practices and drivers' competence and capabilities. Most systems are likely to be fitted to fleet, rather than privately owned, cars which means that they are mainly able to influence people who drive for work. Although this includes young and novice drivers, they do not seem likely to be the main group who will benefit initially.

9.28 However, the longer term development of Intelligent Speed Adaptation offers very significant opportunities for influencing drivers' choice and use of driving speed. Given that speed-related accidents are a particular problem for young and novice drivers, this technology will be able to target this more vulnerable group. Further research is needed to assess whether taking some of the vehicle control away from drivers would have any adverse affects, but the development and implementation of this technology should be strongly encouraged.

10 RECOMMENDATIONS

10.1 **Pre-driver Education and Training**

Research should be conducted to examine whether pre-driver education schemes, especially when they involves driving practice, improve young people's knowledge, attitudes and risk awareness about driving, or whether such courses accelerate the pace at which young people are able to pass their test without influencing their driving behaviour afterwards. The research should also seek to identify the optimum format and content of such courses, and in particular whether or not they are more effective when they include actual driving practice. Research should also assess whether or not these types of course encourage unlicensed driving.

10.2 **Content of Driver Training**

Driver training courses should include more emphasis on the development of positive driving attitudes, behaviour, risk assessment and hazard perception skills.

10.3 **Minimum Learning Period**

As the amount of driving experience is linked to accident risk, a minimum learning period of 12 months should be set. This could be linked to the Novice Driver Log Book Scheme

10.4 **The Log Book Scheme**

The Log Book scheme should be made mandatory.

10.5 The development of the Log Book Scheme to play a part in the driving test (perhaps by removing some manoeuvres from the test and requiring ADIs to certify in the Log Book that a learner has achieved consistency in performing each manoeuvre) should be considered.

10.6 **ADI Standards**

ADIs should be required to publish their Grade, or whether they only hold a Trainee Licence, to allow learner drivers to make a more informed decision about their training provider. The recommendations from "Raising the Standards of Approved Driving Instructors" should be implemented.

10.7 **Learner and Novice Driver Mentoring**

Research should be conducted to assess how parents and other mentors help learner drivers gain driving experience by supervising them during private practice. Good practice guidance and resources should be developed to help mentors to improve the safety performance of young learner drivers.

10.8 **The Driving Test**
Consideration should be given to ways of developing attitudinal and intended behaviour measurements that could be incorporated into the driving test.

10.9 **Hazard Perception**
Novice drivers have poor hazard perception skills, which is one of the reasons for their higher accident risk. The computer based Hazard Perception Test should be introduced during 2002, as promised in the Road Safety Strategy.

10.10 **Post-test Training**
The current post-test measures in Great Britain are limited in scope. Very few drivers take any further training or assessment once they have passed their driving test. Drivers can voluntarily take further training, but there is little incentive for individual drivers to do so. Ways of encouraging drivers to continue to develop their driving skills after the test should be developed.

10.11 The HSE/DTLR Work-Related Road Safety Task Group recommendations that health and safety at work law be applied to on-road work activities, including occupational driving, and that employers should include measures to manage at-work road safety within their existing health and safety management systems, should be implemented as a priority.

10.12 **Pass Plus**
Research should be conducted to establish the effectiveness of the Pass Plus Scheme and to identify ways to encourage more novice drivers to take it.

10.13 **"R" or "P" Plate Schemes**
A trial scheme should be conducted in Great Britain.

10.14 **National Driver Improvement Schemes and Drink Drive Rehabilitation Courses**
These courses are effective in reducing re-offending rates and should be supported.

10.15 **Graduated Driver Licence Systems**
Graduated Licensing Systems provide phased driving experience for new drivers during the period when they are most at risk. However, systems vary and it is not clear what form of system would be most feasible and effective in Britain. Therefore, research should be conducted to assess the feasibility and benefits of graduated licensing in Britain, and the most optimal form for such a system.

10.16 **Vehicle Technology**
Vehicle technology is a rapidly developing and changing field, which offers many opportunities for providing ways of monitoring and evaluating driving practices and drivers' competence and capabilities. The development of Intelligent Speed Adaptation is a very significant opportunity for influencing drivers' choice and use of driving speed. As speed-related accidents are a particular problem for young and novice drivers, this technology should be developed and trailed as a priority.

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