

## **THE ACCUMULATION OF DRIVING EXPERIENCE BY LEARNER PERMIT HOLDERS**

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### **ABSTRACT**

It is important for new drivers to gain as much supervised driving experience as possible during the time they hold a learner permit before graduating to unsupervised driving. This project developed a framework for a program of regular monitoring of driving experience among learner drivers and examined the most appropriate method for conducting regular monitoring. The paper makes recommendations for the conduct of future surveys of learner driving experience.

Information collected through the monitoring program will be used to target and to assess the effectiveness of present and future programs intended to increase the experience levels of drivers presenting for the probationary licence test.

This paper also presents estimates of the amount of driving experience accumulated in professional lessons and supervised practice by learners at each stage of the learner permit period and reports differences between demographic groups within the learner population.

### **KEYWORDS**

Novice driver; learner permit; supervised practice; professional driving lesson.

### **INTRODUCTION**

The accumulation of substantial driving experience during the learner permit period while accompanied by an experienced driver is believed to be crucial to reducing the rate of accident involvement of novice drivers during the first few months of solo driving.

ARRB Transport Research Ltd was commissioned by VicRoads Road Safety Department to develop and carry out a survey of novice drivers to obtain information about the amount and variety of supervised driving experience accumulated by learner drivers in Victoria prior to obtaining a probationary licence.

The objectives of the project were:

- ?? To develop a telephone survey to collect information about driving experience during the learner permit period from learner permit holders and drivers who have recently completed the learner permit period;
- ?? To develop a measure of the total amount of supervised driving experience accumulated during the learner permit period by learners generally and by demographic sub-groups; and
- ?? To provide baseline data for comparison with future surveys using the recommended survey method.

This conference paper summarises the methods used and the major findings of the project. A complete account of the project has been given by Catchpole and Stephenson (2001).

### **METHOD**

#### **Telephone survey of learner driving experience**

VicRoads supplied lists of current learner permit holders and new probationary licence recipients. A sub-contractor was engaged to obtain telephone numbers corresponding to the names and addresses supplied by VicRoads. A market research company contacted learner permit holders and newly licensed drivers by telephone to conduct the interviews.

The sample of drivers interviewed comprised 1318 current learner permit holders and 201 newly licensed drivers. The purpose of interviewing newly licensed drivers was to collect information about experience during the last few weeks before the driver passes the probationary licence test (the 'Final Stage' of the learner permit period).

It was anticipated that the amount of time spent driving each week by a learner permit holder may vary throughout the course of the learner permit period. To account for such variations, learner permit holders were classified into three stages of the learner permit period, according to the length of time they had held a learner

permit when they were recruited into the study (Stage 1 - 0 to less than 3 months; Stage 2 - 3 to less than 7 months; Stage 3 - 7 to 48 months).

The driver sample was stratified by:

- ?? Region of Victoria (Melbourne, Provincial Centres, Rest of Victoria);
- ?? Sex; and
- ?? Stage of the learner permit period (Stages 1, 2, 3 and Final Stage).

Table 1 shows the unweighted breakdown of learner permit holders and newly licensed drivers by region, sex and learner permit stage, while Table 2 presents the unweighted breakdown of learner permit holders and newly licensed drivers by age at permit acquisition by learner permit stage.

**Table 1: Unweighted sample sizes by stage of the learner permit period, region and sex**

Region	Sex	Stage of the learner permit period (n)			
		1	2	3	Final
Metro Melbourne	Male	76	78	175	51
	Female	75	75	175	50
	All	151	153	350	101
Provincial Centres	Male	37	40	88	32
	Female	38	38	90	18
	All	75	78	178	50
Rest of Victoria	Male	41	39	88	25
	Female	39	39	87	25
	All	80	78	175	50
Whole of Victoria	Male	154	157	351	108
	Female	152	152	352	93
	All	306	309	703	201

**Table 2: Unweighted sample sizes by stage of the learner permit period and age at permit acquisition**

Age at permit acquisition	Stage of the learner permit period (n)			
	1	2	3	Final
16 years	200	195	531	129
17 years	71	75	83	40
18 to 20 years	23	28	62	18
21 to 24 years	7	4	11	8
25+ years	5	7	16	6
All	306	309	703	201

Survey questions addressed issues such as the extent of driving experience with professional instructors; practice supervised by family members, partners or friends; the variety of driving conditions encountered during supervised practice; experience of novice driver programs conducted by VicRoads and RACV; and other views on learning to drive. Details of professional lessons were sought for a period of four weeks and details of supervised driving practice for a period of one week prior to the date of interview (current learner permit holders) or prior to the date of obtaining a probationary licence (newly licensed drivers).

The sample was weighted prior to the analysis of the response data to ensure that it was representative of the population of Victorian learner permit holders. The weighting corrected for the planned over-sampling of non-metropolitan learners and drivers in the first two stages of the learner permit period. It also corrected for the unplanned over-representation of younger learners in the sample caused by differential success in contacting older and younger learners by telephone.

### **A measure of total driving experience during the learner permit period**

The method used for the study may be termed 'cross-sectional' because it investigates driving experience throughout the learner permit period by measuring driving experience at a single point in time for a cross-section of drivers who have held a learner permit for varying lengths of time.

The essence of the cross-sectional method of estimating the total amount of driving experience accumulated during the entire learner permit period was to add together estimates of the amount of experience accumulated during each of the four stages defined in the study (Stages 1 to 3 and Final Stage).

To yield a valid total for the learner permit period, it was necessary that the four defined stages be mutually exclusive. It was therefore necessary to exclude from the calculation of experience gained during Stages 1 to 3 any driver who was also in the Final Stage (the last 4 weeks before obtaining a probationary licence). These drivers were identified by means of an enquiry to the VicRoads Driver Licensing System to determine which drivers obtained a probationary licence within four weeks after the completion of the survey.

All interviews for the survey of current learner permit holders in the present study were conducted during May 1999. Most questions about driving experience related to driving in the previous week (supervised practice) or the previous four weeks (professional lessons). All drivers participating in the survey of newly licensed drivers had obtained their probationary licence in early May 1999. Questions about driving experience mostly related to the last week or last four weeks before obtaining the probationary licence. Thus the quantitative results of the study were based on driving that occurred during April and May 1999.

The average amount of driving experience accumulated by drivers in each of the four stages was estimated by calculating the average amount of driving experience gained each week by drivers in that stage and multiplying by the average number of weeks spent in the stage. Weekly driving experience was considered to comprise the average number of minutes spent in professional driving lessons and supervised driving practice each week. Unsupervised driving practice was found to be experienced by very few respondents and was not included in the weekly experience total. Note that since this method was based on averages for groups of drivers and not on data for individual drivers, it was not possible to perform tests of the statistical significance of differences between groups. For the same reason, it was also impossible to carry out multivariate analyses of the influences of gender and other variables on total driving experience during the learner permit period.

## **RESULTS**

This section presents statistics on driving experience for male and female learners in three different regions of Victoria and also for learners who acquired the learner permit at different ages. However, it should be noted that very few survey respondents had acquired their learner permit at age 21 or greater. Due to the very small sample sizes, results for the 21 to 24 and 25+ age groups should be considered indicative rather than reliable.

### **Total driving experience**

The overall average time that the learner permit was held before graduating to a probationary licence was 83 weeks. Table 3 shows that this figure varied little between males and females or between the three regions of Victoria. However, Table 4 shows that the mean time the permit was held by those who acquired the permit at age 16 years (102 weeks) was far greater than the mean time the permit was held by those who acquired the permit at age 17 years (62 weeks).

**Table 3: Mean time (in weeks) spent in each stage of the learner permit period and average length of time learner permit held, by region and sex**

Region	Sex	Stage of the learner permit period (weeks)				Av. length held (weeks)
		1	2	3	Final	
Metro Melbourne	Male	13.0	16.2	49.3	1.8	80.3
	Female	13.0	16.5	50.7	2.3	82.5
	All	13.0	16.4	50.0	2.1	81.4
Provincial Centres	Male	13.0	16.4	49.2	2.7	81.4
	Female	13.0	16.6	56.4	1.8	87.8
	All	13.0	16.5	51.9	2.4	83.8
Rest of Victoria	Male	13.0	16.9	54.0	2.3	86.2
	Female	13.0	17.1	58.6	2.2	90.9
	All	13.0	17.0	56.3	2.3	88.5
Whole of Victoria	Male	13.0	16.4	50.0	2.0	81.3
	Female	13.0	16.6	52.4	2.3	84.2
	All	13.0	16.5	51.1	2.1	82.7

**Table 4: Mean time (in weeks) spent in each stage of the learner permit period and average length of time learner permit held, by age at permit acquisition**

Age at permit acquisition	Stage of the learner permit period (weeks)				Av. length held (weeks)
	1	2	3	Final	
16 years	13.0	17.3	68.7	2.5	101.5
17 years	13.0	16.8	30.5	1.7	62.0
18 to 20 years	13.0	16.7	38.3	1.6	69.6
21 to 24 years	13.0	16.3	35.0	2.2	66.5
25+ years	12.9	11.9	26.5	1.3	52.6
All	13.0	16.5	51.1	2.1	82.7

The average time spent in professional lessons across the entire learner permit period was 11.9 hours. The average was far greater for females (16.2 hours) than for males (7.3 hours) and greater for Melbourne learners (13.5 hours) than for those from provincial centres (10.2 hours), who in turn spent more time in professional lessons than those from the rest of Victoria (5.8 hours).

The average time spent in supervised driving practice across the entire learner permit period was 71.1 hours. Average supervised practice time was greater for males (81.7 hours) than for females (61.3 hours). Average practice time was less for learners living in Melbourne (63.7 hours) than for those living in provincial centres (81.0 hours), who in turn had less than learners from the rest of Victoria (98.9 hours).

The average total of driving experience accumulated in both professional lessons and supervised practice across the entire learner permit period was found to be 83 hours. Table 5 shows that average driving experience as a learner permit holder was higher for males than for females and was lower for learners living in Melbourne than for those living in provincial centres, who in turn had less than learners from the rest of Victoria. It can be seen from Table 6 that average driving experience during the learner permit period was higher for those who acquired the learner permit at age 16 years than for those who acquired the permit at age 17 years or more. Average driving experience during the learner permit period was lowest for drivers who acquired the learner permit at 17 years of age.

**Table 5: Estimated mean hours of driving experience (professional lessons and supervised practice) during the entire learner permit period, by region and sex**

<b>Region</b>	<b>Sex</b>	<b>Total experience for learner period (hours)</b>
Metro Melbourne	Male	82.1
	Female	73.0
	All	77.2
Provincial Centres	Male	95.8
	Female	88.2
	All	91.1
Rest of Victoria	Male	114.7
	Female	94.1
	All	104.7
Whole of Victoria	Male	89.0
	Female	77.6
	<b>All</b>	<b>83.0</b>

**Table 6: Estimated mean hours of driving experience (professional lessons and supervised practice) during the entire learner permit period, by age at learner permit acquisition**

<b>Age at permit acquisition</b>	<b>Total experience for learner period (hours)</b>
16 years	108.1
17 years	48.7
18 to 20 years	73.8
21 to 24 years	101.2
25+ years	52.8
<b>All</b>	<b>82.9</b>

On average across the learner driver population, 14.3 per cent of all driving experience during the learner permit period was gained through professional driving lessons and 85.7 per cent was gained through supervised driving practice. Table 7 shows that the proportion of experience gained through professional lessons was much higher for females (20.9 per cent) than for males (8.2 per cent), and much higher in metropolitan Melbourne (17.5 per cent) than in provincial centres (11.1 per cent) or the rest of Victoria (5.6 per cent). As shown in Table 8, the proportion of experience gained through professional lessons was 8.2 per cent for drivers who acquired a learner permit at age 16, 16.6 to 21.5 per cent for drivers who acquired a learner permit at ages 17 to 24 years and over 40 per cent for drivers who are aged 25 years or more when they acquired a learner permit.

**Table 7: Estimated proportion of total driving experience during the learner permit period spent in professional lessons and supervised practice, by region and sex**

Region	Sex	Type of driving experience (%)		
		Professional lessons	Supervised practice	Total
Metro Melbourne	Male	9.8	90.2	100.0
	Female	25.4	74.6	100.0
	All	17.5	82.5	100.0
Provincial Centres	Male	8.3	91.7	100.0
	Female	13.9	86.1	100.0
	All	11.1	88.9	100.0
Rest of Victoria	Male	2.7	97.3	100.0
	Female	9.1	90.9	100.0
	All	5.6	94.4	100.0
Whole of Victoria	Male	8.2	91.8	100.0
	Female	20.9	79.1	100.0
	All	<b>14.3</b>	<b>85.7</b>	<b>100.0</b>

**Table 8: Estimated proportion of total driving experience during the learner permit period spent in professional lessons and supervised practice, by age at permit acquisition**

Age at permit acquisition	Type of driving experience (%)		
	Professional lessons	Supervised practice	Total
16 years	8.2	91.8	100.0
17 years	21.5	78.5	100.0
18 to 20 years	16.6	83.4	100.0
21 to 24 years	18.3	81.7	100.0
25+ years	45.4	54.6	100.0
All	<b>14.3</b>	<b>85.7</b>	<b>100.0</b>

Additional information was collected about factors that might influence the amount of driving experience obtained, such as the number of cars and supervising drivers available for supervised practice. The influence of these factors on weekly driving time at each stage of the learner permit period is discussed in the full report of the project (Catchpole & Stephenson, 2001).

### Professional lessons

Around 85 per cent of respondents in Stage 1 to 3 but just 5 per cent of Final Stage learners had not taken a professional lesson in the last four weeks. The proportion of learners who had taken a professional lesson within the first three months of holding the permit was found to be between 24 and 27 per cent. At least 51 per cent of learners took their first professional lesson after they had held the learner permit for more than seven months. Almost 98 per cent of learner drivers took at least one professional lesson before acquiring the probationary licence.

Just over 70 per cent of respondents who had ever taken professional lessons reported that the usual length of a lesson was 45 to 50 minutes. The average for all demographic groups was 48 minutes.

The average number of minutes spent in professional driving lessons each week by all respondents (including those who said they had no lessons) is shown in Tables 9 and 10. Drivers who reported no lessons during the survey period were included to permit a valid average for lesson time across the entire learner permit period to be calculated.

**Table 9: Average minutes of professional lessons per week, by region and sex**

Region	Sex	Stage of the learner permit period (minutes)			
		1	2	3	Final
Metro Melbourne	Male	4.4	5.5	5.2	57.7
	Female	11.1	3.9	16.9	59.8
	All	7.7	4.7	11.4	58.8
Provincial Centres	Male	10.4	1.1	4.1	53.4
	Female	6.1	3.6	9.8	54.6
	All	8.2	2.3	7.2	53.8
Rest of Victoria	Male	1.6	0.1	1.5	39.2
	Female	1.2	3.4	6.1	51.2
	All	1.4	1.7	4.0	45.2
Whole of Victoria	Male	4.7	4.1	4.5	54.5
	Female	8.8	3.8	14.2	58.1
	All	<b>6.7</b>	<b>3.9</b>	<b>9.6</b>	<b>56.3</b>

**Table 10: Average minutes of professional lessons per week, by age at permit acquisition**

Age at permit acquisition	Stage of the learner permit period (minutes)			
	1	2	3	Final
16 years	2.0	1.2	5.6	56.2
17 years	3.5	6.9	13.5	56.1
18 to 20 years	4.0	6.1	13.8	69.6
21 to 24 years	53.4	8.3	6.6	34.8
25+ years	35.6	7.8	34.1	56.2
All	<b>6.7</b>	<b>3.9</b>	<b>9.6</b>	<b>56.3</b>

**Supervised practice**

Around 50 per cent of respondents in Stages 1 to 3 and just over 70 per cent of respondents in the Final Stage reported at least one supervised practice drive in the previous week.

Information was obtained from the respondents about their experience during the last week of driving in the rain, in heavy traffic, in the dark, with extra passengers, on roads with a speed limit of 100 km/h or over, in cities and on rural roads, on unsealed or unfamiliar roads, into low sun and reversing. The variety of driving conditions experienced during the last week was greater (on average) for Final Stage learners than for those in Stages 1 to 3; greater for males than for females; less for Melbourne learners than for those from provincial centres; and less for learners from provincial centres than for those from the rest of (non-metropolitan) Victoria.

The average number of minutes spent in supervised practice each week by all respondents (including those who said they had no practice) is shown in Tables 11 and 12. Drivers who reported no practice during the survey period were included to permit a valid average for practice time across the entire learner permit period to be calculated.

**Table 11: Mean number of minutes of supervised practice in one week, by region and sex**

Region	Sex	Stage of the learner permit period (minutes)			
		1	2	3	Final
Metro Melbourne	Male	52.2	59.0	57.9	135.8
	Female	66.4	38.9	33.5	102.2
	All	59.1	48.6	44.9	118.8
Provincial Centres	Male	83.1	50.3	68.9	117.4
	Female	58.2	53.0	50.1	212.6
	All	70.4	51.6	58.5	153.2
Rest of Victoria	Male	115.8	95.1	67.1	145.1
	Female	45.4	79.0	52.2	202.9
	All	81.9	87.3	59.2	174.2
Whole of Victoria	Male	66.4	63.8	60.8	134.4
	Female	62.0	46.4	38.7	127.0
	All	<b>64.2</b>	<b>54.9</b>	<b>49.0</b>	<b>130.8</b>

**Table 12: Mean number of minutes of supervised practice in one week, by age group at permit acquisition**

Age at permit acquisition	Stage of the learner permit period (minutes)			
	1	2	3	Final
16 years	66.8	48.8	63.1	142.4
17 years	37.8	57.8	20.5	158.8
18 to 20 years	82.7	54.3	46.1	78.4
21 to 24 years	111.2	145.8	26.5	145.0
25+ years	43.3	69.2	12.1	43.9
All	<b>64.2</b>	<b>54.9</b>	<b>49.0</b>	<b>130.8</b>

## RECOMMENDATIONS

### Experience measures to be compared between surveys

The most important measure to be compared between surveys is the estimated total hours of driving experience accumulated by drivers while holding the learner permit. This is the best measure of the overall success of efforts by VicRoads and other agencies to increase the experience levels of novice drivers before they commence solo driving.

The key factors influencing estimated total experience during the learner permit period are the average number of weeks holding a learner permit and the average number of minutes of professional lessons and supervised practice each week at each stage of the learner permit period. These contributing factors should be monitored to understand how any improvement or deterioration in estimated total experience has been generated. The contributing factors can be monitored more quickly and cheaply than total driving experience and should also be monitored to provide early warning of likely changes in total experience in situations where the available time or budget do not permit an estimate of total driving experience during the learner period to be calculated. Note that the average number of minutes of lessons or supervised practice per week includes many drivers who spent more than the average time driving and a substantial group who did no driving at all in the week in question. Thus the averages do not represent the amount of time spent driving by an "average" learner permit holder. The average is a summary measure for a large group of drivers and is as much affected by a change in the proportion of learners who drive as by any change in the amount of driving done by those who do drive.

In addition to monitoring learners generally, it is also important to monitor specific sub-populations that pose particular problems. Thus it would be worthwhile to monitor the total driving experience and variety of practice conditions experienced for females (who average less experience and less variety than males) and metropolitan residents (who average less experience and a narrower range of driving conditions than residents of provincial centres and the rest of Victoria). The proportion of drivers who acquire a learner permit at age 16 compared with



ages 17 and greater should also be monitored, as should the average time the permit is held by those who acquire the permit at ages 17 and greater. Other indicators for potential problem groups are weekly driving experience for learners not living with a parent and for learners from homes where a language other than English is spoken.

It is acknowledged that the results of this study, which rely on a cross sectional methodology, may not apply to any particular cohort of learner drivers and should only be compared with the results of similar cross sectional studies conducted in future years. In addition, limitations of the study design include an inability to: provide information about different clusters of drivers within the overall sample; estimate the distribution of driving practice around the mean; account for seasonal variations in weekly driving time by learner permit holders; and, identify long-term learner permit holders and to quantify their influence over the results. Nonetheless, these drawbacks were considered to be lesser issues than those entailed with a longitudinal study (eg. would take years to complete; would be much more expensive for an equivalent sample size; would lose track of some drivers over time; and would run the risk of altering what it seeks to observe) or with a retrospective study (eg. high measurement error due to recall over two or more years). Caveats relating to the reliability of self-report data are common to all methods of data collection for driver experience and have been discussed in detail elsewhere.

## **CONCLUSIONS**

This study has established an appropriate method of monitoring driving experience of learner permit holders; developed a means of estimating the total driving experience accumulated over the entire learner permit period; established baseline data with which future surveys of learner driving experience can be compared; collected a wealth of information about learners that can be used to help design and target programs to increase driving experience during the learner permit period; and suggested several lines for further research.

The average total driving experience during the learner permit period was found to be 83 hours, of which 86 per cent (on average) was in the form of supervised driving practice and 14 per cent was in the form of professional driving lessons. Females and metropolitan residents tended to rely more on lessons and less on practice and to accumulate less total driving experience than males and country residents respectively. The average period for which the learner permit is held was 83 weeks.

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