THE PRIVATE LIFE OF DEMERIT POINTS

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ABSTRACT

This is an analysis of the demerit points of repeat traffic offenders to examine their characteristics, differences and offence patterns in order to help better targeting of road safety enforcement and education programs.

The analysis used data from the ACT driver-licensing system to analyse the offence records of drivers that have accrued demerit points or had their licences cancelled or suspended. These drivers were split into 'high rollers' (more than 7 demerit points) and 'low rollers' (less than 8 demerit points). Information collected included the age of the person and the types of offences committed.

The most common offences were found to be exceeding the speed limit by 15km/h but less than 30km/h and exceeding the limit by less than 15km/h. High rollers have a higher percentage of the former and low rollers, the latter.

It was found that the percentage of licences that have been cancelled or suspended decreases rapidly with age. Low rollers are more likely to commit less serious offences, of one demerit point than high rollers. This proportion increases with people over the age of 35. High rollers of all ages have a much greater proportion of more serious or 3 demerit point offences.

In terms of the acquisition of demerit points it was found that 'high rollers' had a much higher percentage of 3 demerit point offences as a percentage of their total than 'low rollers'. This indicates that people with more than 7 points are continuously recording offences of a more serious nature.

When examining high rollers average demerit points the trend is not as severe as all demerit point offenders by age. This may be due to the individual nature of the high rollers, rather than an age related trait.

INTRODUCTION

In the ACT, as in most other jurisdictions, demerit points are issued when a person incurs an offence during the operation of a motor vehicle. A fully licensed driver in the ACT has the ability to accrue 12 demerit points before their licence is cancelled. Most drivers in the ACT gain their full non-provisional licence at age 20-21. It is unclear as to the patterns in which people accrue demerit points, and the type of offences they incur and this information will be useful in developing road safety initiatives that deter recidivist drivers and help formulate better-targeted and more effective traffic enforcement and driver education campaigns.

Diamantopoulou et al (1997) showed a link between accidents and demerit points. However they noted that a better predictive model can be produced by including previous crash history.

This analysis uses data from the ACT driver licensing system (TRIPS) to analyse the offence records of drivers that have accrued demerit points or had their licences suspended or cancelled. Other information collected includes the age of the person and the type of offences committed.

Some road safety strategies may have increased the likelihood of people being awarded demerit points; such as mobile speed cameras, fixed red light and speed cameras and 50km/h residential limits.

STUDY METHODOLGY

The time period used is the three years 1/1/1999 to 31/12/2001. Data was excluded after 31/12/01 because some cases might not yet have been finalised at the time the data was extracted (July 2002). A three-year period was selected because when the motor vehicle registry considers the amount of demerit points they look at the past three years, as demerit points expire after that period of time. The benefit of looking at 3 years as opposed to a single point in time allows offences over time to be analysed.

During the three-year period, some licensees lost their licences (and possibly regained them). For these licensees, the time period during which they were permitted to drive was less than the three years allowed for other drivers, although some collected points even while their licences were suspended or cancelled. It was not possible from the current data to determine the reasons for this, although possible explanations are:
- Some of these drivers had special licences but their points were held against their other licence.
- Some of these drivers drove whilst their licences were suspended or cancelled.

There was no way to link different licences belonging to the same person. So each licence was treated as belonging to a different person.

We looked for differences between people who acquired more than 7 demerit points 'high rollers' and those who collected 7 or fewer points 'low rollers' over the three-year period. This division was made on an assumption that people with a higher number of demerit points would exhibit different patterns of acquisition.

DATA ANALYSIS

Data was analysed by Microsoft Access and Excel, to provide information on the following areas:
- Suspended licences
- Proportion of offences at each point value
- Average demerit points
- Types of offences

SUSPENDED LICENCES
Chart 1 shows the percentage of each age group whose licences were cancelled or suspended as at 31/12/2001. The largest group is aged 25 or under and there is a decrease for each successive age group.

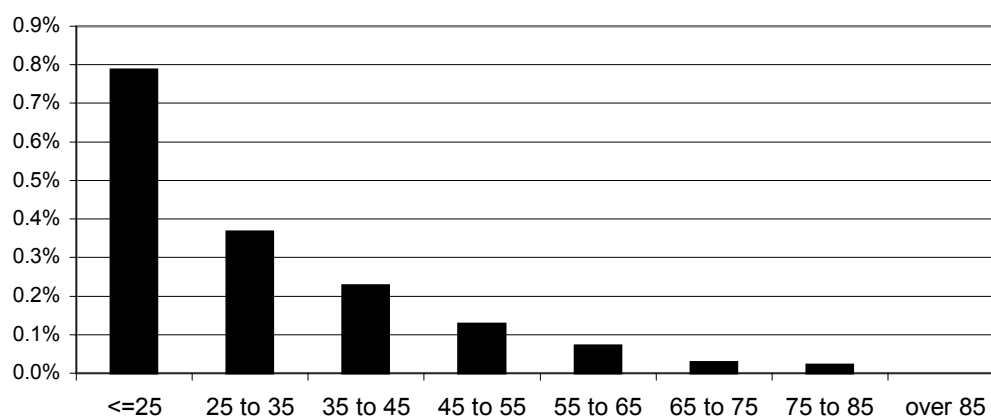**Chart 1: Percentage of licensees suspended or cancelled as at 31/12/01**

Chart 2 is a more detailed version of Chart 1. Rather than grouping ages, the chart shows the data for each age year. It shows the percentage of each age year with cancelled or suspended licences. The statistical uncertainty in the data is high for the small age groups or those with very few cancellations or suspensions, eg above 65.

The percentage of licences that have been cancelled or suspended decreases rapidly with age. It follows the general trend of crash involvement, supporting the assumption that drivers under the age of 25 have a much greater risk of having their licences cancelled or suspended.
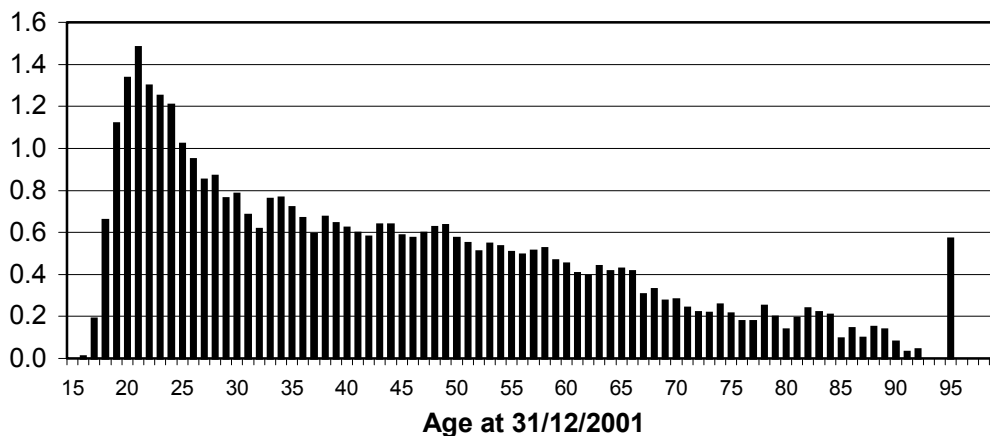
Chart 2: Percent of licensees suspended or cancelled as at 31/12/02
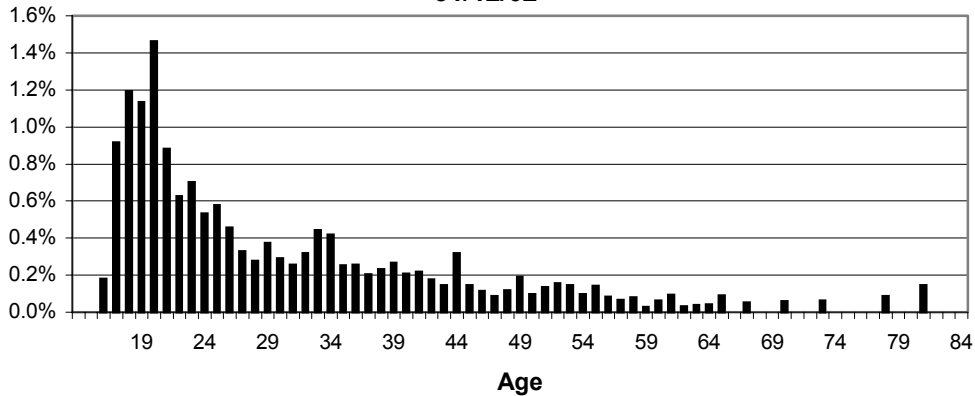
AVERAGE DEMERIT POINTS
Charts 3 shows the average demerit points collected over the three years 1/1/1999 to 31/12/2001, by age.

**Chart 3: Average Demerit Points by Age**

In chart 3 there appears to be four stages of demerit point accumulation. From 16 to 22 there are fewer years to accumulate points for younger licence holders, however the number of points rise dramatically, possibly due to risk taking and inexperience. From the age of 22 to 30-35 there is a sharp decrease in demerit point accumulation. This could be attributed to people taking fewer risks and gaining more experience on the road. From 30-35 to 60-65 the graph plateaus indicating a period where people have more responsibilities and are more experienced. From 60-65 onwards the accumulation declines again where people tend to become very cautious and limit driving to times where there is much less risk.

Chart 4 uses data about the high rollers only and shows their average demerit points by age. In this case there is no dramatic trend by age as there is for the previous chart. However after the late thirties there seems to be a slightly lower number of demerit points.

When examining high rollers average demerit points the trend is not a severe as all demerit point offenders by age. The increase from 57 onwards may be due to parents and grandparents taking their children's demerit points, or simply to data variability, or to a more skewed distribution for this older age group.

**Chart 4: Average Demerit Points by Age for high rollers**
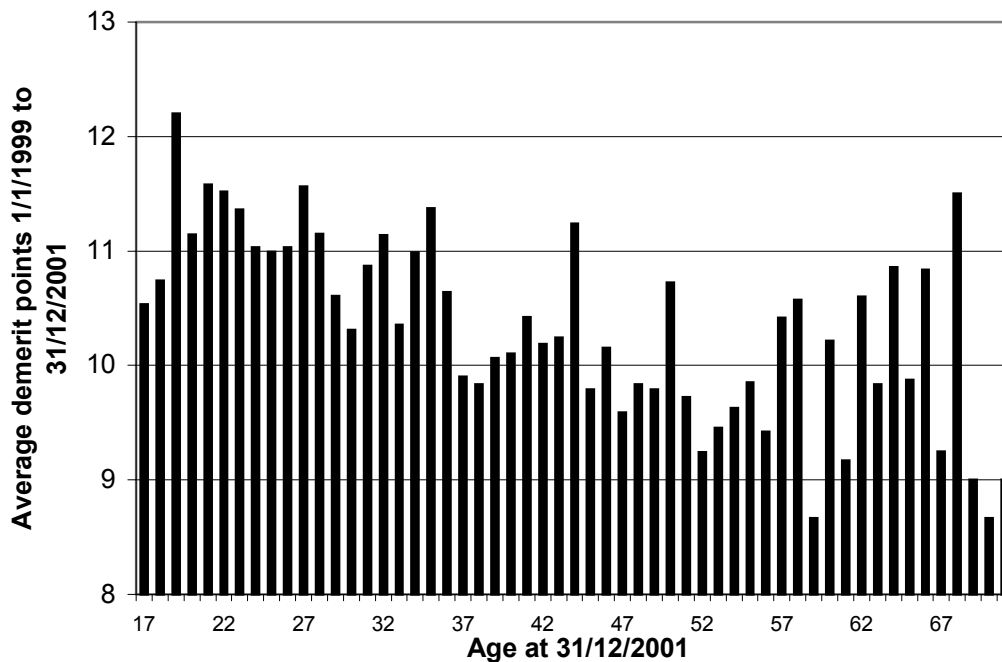
PROPORTION OF OFFENCES AT EACH POINT VALUE
Charts 5 and 6 show the proportion of all offences ascribed to each point value. The most common offences have one or three points. The charts show the proportions for particular groups of people: age under (chart 5) or over 35 (chart 6), and low or high rollers. Because chart 3 showed that people under 35 generally have more demerit points than those over 35, those two age groups have been separated in the charts below.

These charts indicate some difference between the low and high rollers, with the low rollers having a higher proportion of one-point offences and the high rollers having a higher proportion of that low rollers had a much higher percentage (53%) of one demerit offences than high rollers (24%). High rollers had a much greater percentage of 3 demerit point offences (55%) than low rollers (38%). However the pattern appears similar for people under 35 and over 35.

**Chart 5: Proportion of offences at each point value.
Age<35**
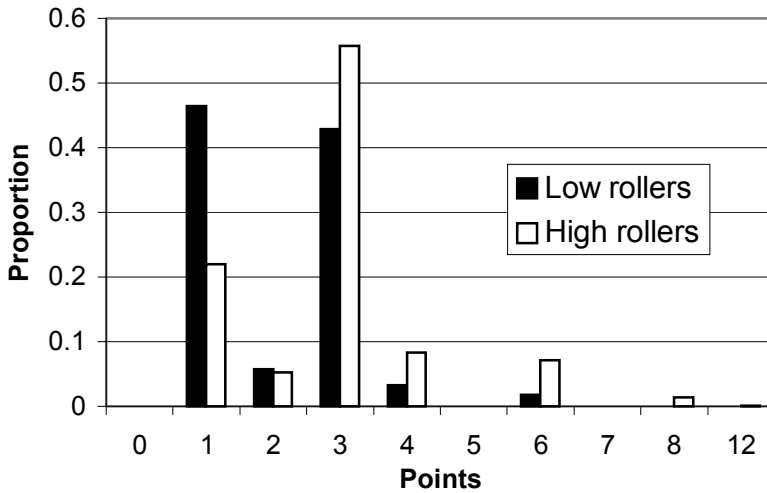
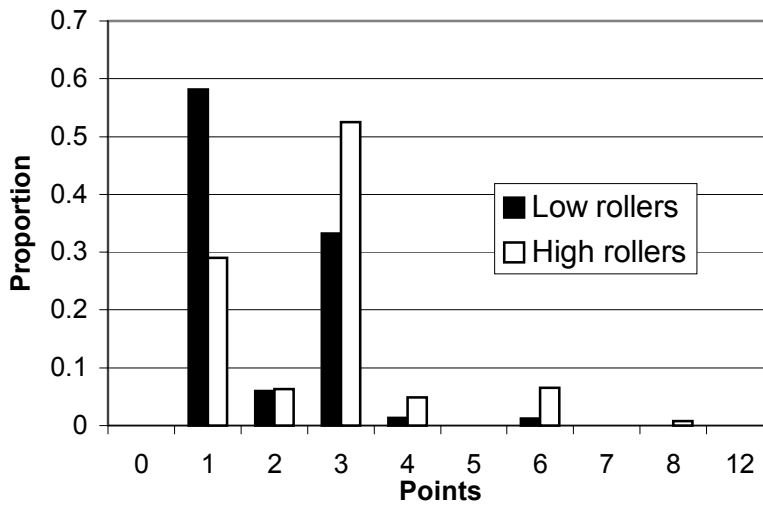**Chart 6: Proportion of offences at each point value.
Age>=35**

Chart 7 shows similar information, except instead of showing the proportion of offences at each demerit point, it shows the average absolute number of offences at each demerit point. The data is separated into low and high rollers.

In terms of overall point distribution it was found that high rollers had a much higher percentage of 3 demerit point offences as a percentage of their total, indicating that people with less than 7 demerit points are more likely to accrue demerit points for less serious offences. Those with more than 7 are continuously recording offences of a more serious nature.

Chart 7: Points distribution for low and high rollers
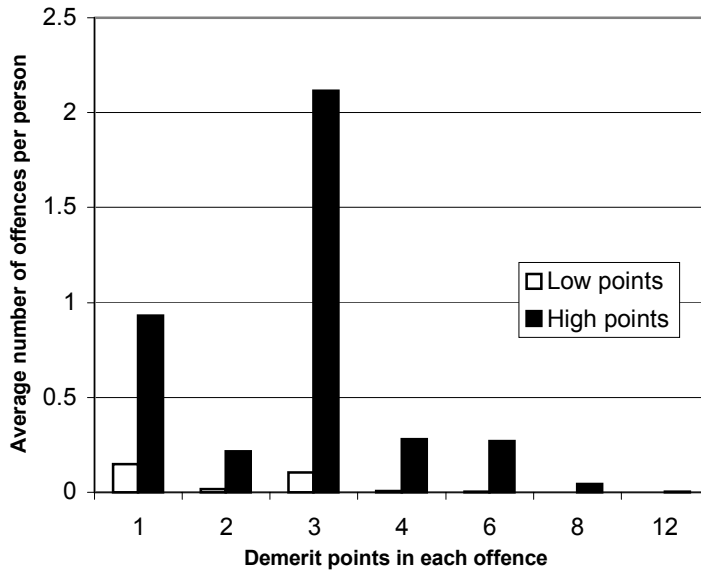

Types of offences

By examining the proportion of offences by the National Offence Codes, the average number of each type of offence per driver was analysed. It was found that 53% of all offences were for exceeding the speed limit by less than 15km/h (code 23), 30% of offences were for exceeding the speed limit by 15km/h but less than 30km/h (code 10). Of the remaining 21 offences the greatest offence rate was for disobeying a traffic signal, at 5% (code 3).

Table 1: National Offence Codes

National Offence Code	Explanation of code
1	Exceeding the speed limit by 45 km/h or more
2	Exceeding the speed limit by 30 km/h but less than 45 km/h
3	Disobeying the traffic signal
4	Disobeying major regulatory traffic control sign or police d
5	Failing to give way
6	Failing to stop and/or give way at pedestrian, school or lev
7	Driving with unrestrained passengers under legal age including
8	Driving contrary to defect notice
9	Driving on wrong side of double lines or divided highway
10	Exceeding the speed limit by 15 km/h but less than 30 km/h
11	Driving without seat belt
12	Motorcyclists not wearing a helmet
13	Risk colliding with alighting, boarding or waiting tram pass
14	Careless/negligent driving
15	Improper overtaking and passing
16	Turning or stopping without signalling
17	Turning improperly
18	Failing to keep left
19	Driving contrary to a repair notice
20	Failure to dip headlamps
21	Following too closely
22	Driving at night without headlamps on
23	Exceeding the speed limit by less than 15 km/h

Chart 8 shows the proportion of offences with each National Offence Code. High rollers have a higher proportion of code 10 (speeding by 15-30 km/h) relative to code 23 (speeding by less than 15 km/h) compared to the total population. The results for low rollers are much the same as the charts for the total population, because the low rollers are the vast majority of the population.

The relationship between speed and crash risk is well established (Richardson 1994). The fact that the high rollers are more represented in the higher speed groups indicates that they are at a greater risk of crashing.

Chart 8: Proportion of offences with each National Offence Code

National Offence Code
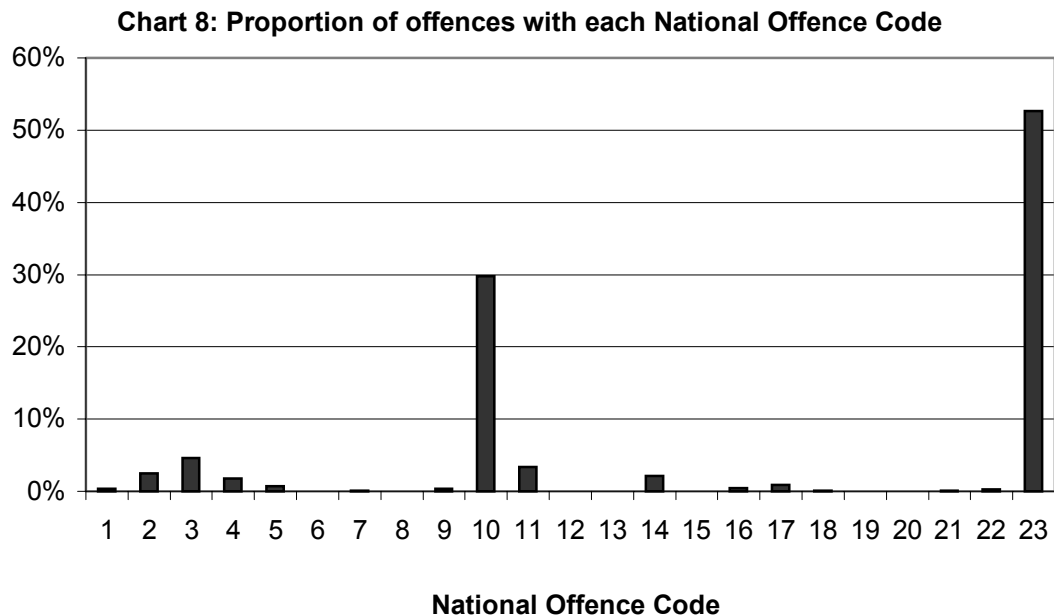
DISCUSSION

This study has shown the patterns in which drivers accumulate demerit points.

The following conclusions can be suggested:

- The percentage of licences that have been cancelled or suspended decreases rapidly with age after 23. It follows the general trend of crash involvement as seen in other studies (McColl et al 2001), and shows that drivers under the age of 25 have a much greater risk of having their licences cancelled of suspended.

- Low rollers (less than 8 demerit points) are more likely to commit less serious offences, of one demerit point than high rollers. The proportion of offences with 1 point increases with people over the age of 35. High rollers of all ages have a much greater proportion of more serious or 3 demerit point offences than low rollers.

- In terms of the acquisition of demerit points it was found that 'high rollers' had a much higher percentage of 3 demerit point offences as a percentage of their total than 'low rollers'. This indicates that people with more than 7 points are continuously recording offences of a more serious nature.

- When examining high rollers' average demerit points, the trend is not as severe as all demerit point offenders by age. This may be due to the individual nature of the high rollers, rather than an age related trait.

- The most common offences recorded are exceeding the speed limit by 15km/h but less than 30km/h and exceeding the limit by less than 15km/h. High rollers have a higher percentage of the former and low rollers, the latter. This is more than likely due to road safety operations concentrating on speeding.

How can this be used?
These results can be used to help better targeting of road safety enforcement and education programs. In identifying how drivers acquire demerit points, particularly high rollers or recidivist offenders it is possible to focus road safety initiatives on such high-risk groups.

This report has shown that differences exist between high and low demerit point offenders. Road safety strategies can now take this into account when devising advertising campaigns and perhaps on an individual basis when a driver is flagged as a typical recidivist offender.

Where to from here?
This report forms the initial investigation of demerit point acquisition in the ACT. The next steps will be to identify more detailed characteristics of 'high rollers'. By examining 'high rollers' based on age, sex, speed of acquisition of demerit points and type of offence, we may be able to better identify the characteristics of high rollers and those that are most at risk of crashing.

Haque (1987) investigated the time between infringements to determine the effectiveness of the demerit points system. A modification of these studies may be useful in the ACT to examine how 'high rollers' react to demerit points.

With the imminent replacement of TRIPS with Rego.ACT such investigations will become easier. Linking of demerit point offences and crash history will also provide the ACT Government with a clear picture as to who is at risk of having an accident. Smiley et al (1991) used driver's convictions and previous accidents to predict accident potential. This research may be useful in the targeting of future road safety strategies in the ACT.

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