

South Australia's Driver Intervention Program: Personality characteristics of participants, and their subsequent crash and offence experience

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Abstract

The Driver Intervention Program (DIP) is a 90-minute interactive small-group workshop for disqualified L- or P-plate drivers aged 25 or younger, living in Adelaide and some rural centres. Those eligible for DIP are not some limited number of "repeat" or "problem" drivers: one offence of speeding is sufficient for licence disqualification. The present paper covers the following issues. (1) On the basis of other literature, how effective would the DIP be expected to be, and how cost effective? Very low effectiveness would be expected. DIP is very cheap, however, and could possibly still be good value for money. (2) In regards to attitudes and personality characteristics of participants, are these similar to or deviant from those of young people not disqualified from driving? DIP participants differ only in quite minor ways from other young people. (3) How do those who participated in DIP compare with those who should have done but did not (paying an expiation fee instead), in respect of subsequent crashes and offences? The crash experiences do not differ, but DIP participants have fewer subsequent offences. (4) Can DIP be improved? What else might be done about young driver attitudes and behaviours? Some minor suggestions for fine-tuning can be made. But if a big impact on young driver attitudes and behaviours is wanted, an expensive, intrusive, intervention with the whole population should be considered: some form of psychotherapy.

1. Introduction

In South Australia, many young L- and P-plate drivers who have been disqualified from driving attend the Driver Intervention Program (DIP). This workshop lasts some 90 minutes and confronts the driver with the risks and consequences of road

crashes. Naturally, it is hoped that those who attend subsequently have a lower risk of crash involvement than they otherwise would have. Three features of the operation of the DIP are worth noting at this point. (a) It is not limited to young drivers who have repeatedly broken the law. One offence of speeding is sufficient for licence disqualification. (b) Many drivers successfully appeal against disqualification, but are nevertheless required to attend DIP. (c) A substantial number of those required to attend DIP do not do so (but pay an expiation fee instead).

Section 2 below gives more information about who is required to attend DIP and what the workshop consists of. Sections 3 and 4 are discussions of literature: on how principles of adult learning are relevant to DIP, and what experience with driver improvement programs in the past might lead us to expect for DIP. Sections 5 and 6 are empirical: they respectively describe personality characteristics and attitudes of a sample of DIP participants, and give results concerning the crash and offence experience of drivers who either participated in DIP or paid an expiation fee instead. Section 7 briefly comments on DIP, and finally Section 8 examines the potential for counselling or psychotherapy for young drivers, which would be a much more intrusive and expensive intervention than DIP is.

2. South Australia's Driver Intervention Program

The present version of the DIP commenced in July 1996. It targets any driver on a South Australian Learner's Permit or Provisional Licence who was disqualified from driving for any type of traffic offence that violated the conditions of their permit or licence. Each year, about 3000 young offenders are required to attend. The program takes approximately 1.5 hours and is usually held on weekday evenings. There are 9 venues within metropolitan Adelaide, and additional ones in some rural regions.

2.1 Who must attend DIP?

A driver aged 25 years and under who has breached the conditions of their South Australian Learner's Permit or Provisional Licence and has been subsequently disqualified from driving is required to attend the program if they live within 100 km of a DIP venue. The conditions state that drivers must not: have any alcohol in their

blood when driving, exceed the speed limit by more than 10 km/h, or drive without L or P plates on the vehicle. Additionally, drivers must carry their permit or licence while driving, not incur four or more demerit points, and learners must be accompanied by a fully licensed driver. A maximum speed limit of 80 km/h applies to learners and 100 km/h to provisional drivers. Even if a driver successfully appeals against their penalty of licence disqualification, they must still attend DIP.

The most common offence leading to licence disqualification (and DIP attendance) is speeding: a sample of 336 offenders reported 436 offences, 236 (70 per cent of the number of offenders) being speeding and 89 (26 per cent of the number of offenders) being failure to display P-plates. See Wundersitz and Hutchinson (2006, Table 4.4). Offending drivers are required to attend a session within six months from the date of their first Notice to Attend. In financial year 2003/2004, 3319 drivers were required to attend DIP; 69 per cent did attend, but 27 per cent did not and paid an expiation fee instead. (There were 4 per cent having a legitimate excuse for not attending DIP within the normal period.) Eighty per cent were male.

2.2 Program delivery

The program involves interactive small group discussions led by two facilitators. These have been recruited from a wide variety of fields and are not necessarily road safety experts. They include people with a permanent disability as a result of a crash, others with an interest in road safety, and police officers. The maximum number of offending drivers attending each session is restricted to 16. During the majority of the session, the group is divided into two smaller groups so that each facilitator has no more than 8 participants in a group.

Rather than having authority figures lecture young drivers on road safety, the strategy behind DIP is for young drivers to find their own need for attitudinal or behavioural changes and draw their own conclusions as to how they might change. It is believed that the process of placing young driver decisions under personal control will make them more motivated for attitudinal or behavioural change (Gregersen and Berg, 1994). This strategy is also intended to enhance young driver self-efficacy, that is, to perceive they have the opportunity and resources to perform the behaviour. This perception is thought to facilitate behavioural change.

In order to achieve these intended outcomes, the facilitator's role is to encourage participants to express their views and discuss road safety issues in a 'friendly, supportive and non-threatening environment'. Facilitators are directed to guide debate on the issues within the structured program but not impose their own beliefs and values or patronise participants. Participants are encouraged to conceptualise issues through their own experiences and frame of reference so that they question their own driving behaviour and consider the risk and consequences of crashing. To encourage open discussion and debate, participants are reassured that all conversations within the program remain confidential to the group present.

2.3 Course content

The main aim of DIP is to reduce young driver crash involvement by challenging young drivers to think about the potential risk and consequences of crashes and question their own sense of invincibility. The five main components of the program cover the relationship between youth and crash involvement (risk-taking behaviour), social norms and behaviour rationalisations, lifestyle issues, the consequences of crashing, and reinforcement of vulnerability or the potential reality of crashing.

1. Risk-taking behaviour. The fact that young drivers are over-represented in crashes is presented to participants using several graphs depicting crash statistics. Participants must then identify why they think young drivers are over-represented in crashes and discuss the causes of young driver crashes.
2. Social norms. The social norms and rationalisations for certain behaviours leading to young driver crashes are debated. Speeding behaviour is usually discussed and when time permits, fatigue and/or inexperience. Issues explored include the context in which the behaviour is perceived to be safe and, alternatively, dangerous; the influence of peers; and the potential strategies to avoid engaging in the behaviour.
3. Lifestyle issues. Drink- and drug- driving are prominent here. A short video (3 mins) is shown depicting a party scenario where a young driver is determined to drive after drinking. The concept of standard drinks, factors that influence drinking outcomes, and strategies to avoid driving after drinking are discussed based around the drama but also in reference to participants' own experiences.

4. Crash consequences. Potential and real consequences of crashes are discussed. Participants are encouraged to think about monetary and personal losses through crashing.
5. Vulnerability. Prior to the commencement of the DIP session, participants are asked to rate their skill as a driver. In the final section of the program, the results from the self-assessment of driving ability are discussed, while reinforcing that young drivers are not invulnerable to crash involvement.

3. Comparison of DIP with principles of adult learning

The strategy for the DIP is not to lecture young drivers but to encourage them to voluntarily change their attitudes or behaviours. The following extracts from a document for facilitators (“Introduction, Aims and Program Delivery”) demonstrate the nature of the DIP. “It is not the role of the facilitator to describe right from wrong, or appropriate from inappropriate.... Likewise, issues relating directly to road safety initiatives and programs should be treated in a neutral manner.... Remember, the aim of the program is to encourage young drivers to confront the potential reality and consequences of crash and to have them question their own risk taking and sense of invincibility.”

According to Gregersen et al. (1996), the use of group discussions for promoting behavioural change can be traced to experiments on changing eating habits, conducted under Kurt Lewin in the 1940's, see Lewin (1958). Group discussion and decision was found to be much more effective than lecturing. However, this conclusion is controversial: according to Pelz (1958), it is not group discussion that is important, but rather it is the process of making a decision and the degree to which group consensus is obtained and perceived.

Four experimental groups receiving different fleet driver improvement measures and a control group were compared by Gregersen et al. (1996). One of the experimental treatments consisted of group discussion meetings. Drivers receiving this treatment improved relative to the control group. Does this give support to the DIP and its use of group discussions? Only to a limited extent. The results of Pelz (1958) suggest that the details may matter greatly: some components of a treatment that is

described as being group discussion may be effective, and others not. And the details of the population treated and the group discussion in the study of Gregersen et al. did differ quite substantially from the DIP. The population consisted of drivers employed by a Swedish telephone company, whose average age was 40. Naturally, the discussion meetings, of which there were three of about an hour each, were appropriate to this population, and differed in many details from the DIP.

A report by Bartl et al. (2002) is an articulate discussion of the style of training (facilitation, coaching) that inspired DIP. Bartl et al. were referring to voluntary (post-licence) driver instruction of typically a day in length, with an on-track or on-road component. That is different from the DIP, but nevertheless what they say is pertinent in several respects. In Section 3.5.3 of Wundersitz and Hutchinson (2006), we discuss remarks of theirs about adult learning, classroom methods, the facilitator (they also use the words trainer or coach to mean the same thing), and training of the facilitator. Among the important points they make are the following: the importance of the participant's motivation; the value of participant-centred coaching; scepticism about whether a 1-2 day course can bring about significant behavioural change via beliefs and values; scepticism about whether the typical facilitator of driver improvement programs has the appropriate skills. We feel there is a very wide range of possible reactions that a reasonable person might have to what they say.

- We found the report quite persuasive. It is noteworthy that the DIP is, or at least aspires to be, very much in line with the approach to adult learning that Bartl et al. have in mind.
- But others may question where is the evidence for the assertions of Bartl et al. Or they may think that in the real world the facilitator's task is a very difficult one, and people capable of doing it are likely to be busy charging a premium for their services facilitating something else. They might add that a much more realistic objective is to get over one simple message, such as "Reduce your speed by 5 km/h".

The key question is whether Bartl et al. are realistic in their advocacy of coaching (facilitation, training) to improve the safety of driving.

4. From other literature, what effects would be expected?

In considering what results might be expected of DIP, are there any empirical datasets that should compel our attention? We think not. Driver improvement is a topic that has attracted a vast amount of research over the years, and there have been many studies that might be relevant to some degree. But, to the best of our knowledge, they were all conducted far away or on a different client group or with a different intervention program or using unconvincing methodology. Thus we need to consider studies that might be relevant to some degree, exercise our judgment as to which may be illuminating for the present purpose, and accept that other people might hold different opinions to ours.

Our perception is that there is a widespread view that any form of advertising, education, or training will not greatly improve driver behaviour. Ker et al. (2003) reviewed remedial driver education. In their Synopsis, they said: "The review of trials found strong evidence that no type of driver education for licensed drivers leads to a reduction in traffic crashes or injuries". The following are the conclusions of a review (by the same group of authors) of school-based driver education: "The results show that driver education leads to early licensing. They provide no evidence that driver education reduces road crash involvement, and suggest that it may lead to a modest but potentially important increase in the proportion of teenagers involved in traffic crashes" (Roberts, Kwan and the Cochrane Injuries Group Driver Education Reviewers, 2001/2005). We share this scepticism, but feel that it is overstated and should not be the sole guide to decisions about future action. It is possible to accept that the average effect of many past efforts has been close to zero, and still believe that something else, not yet rigorously evaluated, will be found to be effective in the future. And the DIP and many other driver training and education measures are very cheap: the average effect of past measures may indeed be close to zero, and yet the evidence may still be compatible with there being a small effect that is very worthwhile because of the cheapness of the intervention.

Following the introduction of the Schools Programme of the (U.K.) Driving Standards Agency, Roberts and colleagues wrote an article in *The Lancet* urging that this programme be stopped (Cochrane Injuries Group Driver Education Reviewers, 2001). Thus it seems quite likely that policies concerning road safety education and

training will be contested, with some parts of the community urging that they be based upon research of high methodological quality. There has been a trend in recent years to promote randomised experimentation as being the only route to good evidence, because of the biases that can easily arise if any other method of assigning experimental units to treatment or control groups is used. This has been most pronounced in medicine, but has also influenced social welfare, criminology, and education, and has begun to have an impact in traffic safety. Roberts and colleagues work within the Cochrane Collaboration, which is part of this trend (see <http://www.cochrane.org>). Masten and Peck's paper, to be discussed below, shows the influence also. In selecting studies for review, they laid stress on methodological quality, saying (p. 405) that they required that the studies use "a classical experimental design employing random assignment or a design that reasonably approximated group equivalency". Fuchs (1980), which is one of the studies included by Masten and Peck, also emphasised the importance of high quality methodology in evaluating driver improvement programs: "Use of a randomized control group gives this evaluation reliability and persuasiveness that cannot be obtained by other means" (p. 107) and "Scientifically acceptable evaluations are absolutely necessary in order to make decisions to improve and enhance the effectiveness of education programs.... Extensive public spending on driver improvement programs makes it essential to document their benefits and evaluate their impact. The only totally valid means of assessing the impact of the programs is to provide for a randomized control group as an inherent part of each project" (p. 114).

The field of driver training and remediation, in its concern with quality of research methodology, has been ahead of either vehicle or traffic engineering. This is presumably because workers in the former field often come from a background either of public health or psychology, in both of which randomised experimentation is familiar. Thus Peck (1976) wrote, "Only by following some fundamental research design principles and avoiding the mistakes of many prior driver improvement studies can program development evolve in a coherent fashion and allow us to say with assurance that a given program does or does not reduce accidents, by how much and under what conditions", and he went on to offer five recommendations. The first of these was random assignment to treatment and control groups, and the second was having an extremely large sample size. For discussion of randomised experimentation and related issues, see Hutchinson and Meier (2004). Thus, the type

of evidence we desire is a randomised experiment, comparing the subsequent crash records of thousands of participants, very similar to DIP participants, randomly assigned to a programme very similar to the DIP or to no treatment. It seems very unlikely that such evidence exists.

However, there is research of some relevance. The review by Masten and Peck (2004) covered 35 studies considered to be methodologically sound. They included many different types of intervention, including licence suspension and the distribution of educational or informational material.

- Overall (that is, averaged over the various interventions), there was a 6 per cent decrease in crash rates for treated drivers.
- Some interventions were more effective than others. For licence suspension, there was a 17 per cent decrease in crash rates. (At least part of the effect is likely to be due to reduction in distance driven.) For provision of educational or information material, there was a 1 per cent increase.
- It might be reasonable to describe the interventions as varying in intrusiveness, and to conclude that the more intrusive ones (such as licence suspension) were the most effective, those of intermediate intrusiveness (such as group or individual meeting) were of lower effectiveness, and those of least intrusiveness (such as educational or informational material) were least effective.

The interventions described as group or individual meetings were probably more intrusive than the South Australian DIP is. The (U.S.) National Safety Council's defensive driving course is eight hours, for example. Thus the likely impact of the DIP in Adelaide would seem to be between the 5 per cent improvement that Masten and Peck report for group meetings and the 1 per cent worsening that they report for educational or informational material. Senserrick and Haworth (2005, Section 2.4) express the opinion that "One day or half-day programs.... are unlikely to be associated with crash reductions".

The effects of the interventions are small. Masten and Peck tackle the issue of whether they are so small as to be not worthwhile. They say (p. 415) that extensive investigations over the past 30 years by the California Department of Motor Vehicles have shown that that state's measures are justified by benefits outweighing costs

(Peck was formerly chief of the Research and Development Branch of the California Department of Motor Vehicles).

5. Personality characteristics of participants

5.1 Method

Characteristics of a sample of young drivers (336 in number) attending DIP have been compared with those of a group of young South Australian drivers, 270 university students. All held a current provisional driver's licence. (For more details, see Section 4 of Wundersitz and Hutchinson, 2006, or Wundersitz and Burns, 2006.) The DIP participants and university students were administered a survey based on a number of measures previously found to be associated with high-risk drivers. These measures included personality characteristics, hostility variables, driving related attitudes, and attitudes specific to road safety. The profile of the DIP participants on these measures was then compared with that of the students. This could assist in tailoring DIP or other programs to the specific motivational needs of young South Australian traffic offenders. The student group is not claimed to be a random sample, and could conceivably differ from the general young driver population, but it seems unlikely that differences would be great.

5.2 Results

The overall picture to emerge from the comparison was that offenders, relative to students, were personally well adjusted, though with some driving-related aggressiveness and less safety-oriented attitudes: they were not an extreme group of seriously disturbed young drivers, but relatively normal.

Various problem behaviours (including risky driving, problem drinking, illicit drug use, and antisocial behaviour) are sometimes found to be interrelated and reflect a common underlying propensity for problem behaviour or a deviant lifestyle among young adults (Jessor, 1987). Low self-control may be a fundamental psychological cause. (See papers in the collection edited by Farrington and Junger, 1995, for

example.) The present sample did not reflect this: offenders were not motivated to be socially deviant or report risky driving, relative to students.

5.3 Comments

Our interpretation of the literature is that the studies that have identified such characteristics as sensation seeking, driving related aggression, risky driving style, and high alcohol use in groups of drivers were largely based upon populations of more serious traffic offenders (drink driving offenders or multiple offenders). Rather similar to our study with drivers attending DIP, Renner and Anderle (2000), in Austria, examined the personality characteristics of young offenders assigned to a psychological training course after committing certain traffic offences within the first two years of driving. The majority committed speeding offences and 80 per cent were first time offenders. While scoring higher than controls on extraversion and venturesomeness, they largely showed normal personality functioning rather than deviant.

6. Subsequent crash and offence experience

6.1 Method

Although the relevant drivers are “required” to attend DIP, many do not but pay an expiation fee instead. By matching driving licence numbers, Kloeden and Hutchinson (2006, 2007) obtained the later crash and offence experiences of drivers who attended DIP or should have attended but paid an expiation fee instead. A logistic regression was carried out with crash occurrence as the dependent variable and group (DIP or Expiation) and sex-age combination as predictors. That is, the question is asked whether group is a predictor, given sex-age group is already being used. A similar method was used for offence occurrence.

Three limitations with this should be noted.

- No randomised experiment was conducted: the drivers themselves decided whether to attend DIP or to pay the expiation fee. Thus there may be

differences between the groups in respect of factors that affect subsequent crashes and offences.

- No information was available about distances driven. Any differences found between the groups in respect to crashes or offences could be due to differences in rates per kilometre driven, or to differences in distances driven, or to a combination of both.
- A difficulty arises because for the drivers who attended DIP, there is a particular day that separates pre-DIP from post-DIP, but there is no comparable moment for the drivers who did not attend. Instead, the follow-up started at the date of sending a Notice to Attend the DIP.

6.2 Results

In respect of crashes, there was no statistically significant effect of whether or not the driver had attended DIP.

In respect of offences, the DIP group had an appreciably better record than the Expiation group. Consider the percentages committing any driving offence in a six-month period, and calculate the ratio for the two groups, Expiation/DIP, after allowing for age-sex differences in the groups. For three six month periods after the Notice to Attend, the ratios were 1.7, 1.4, and 1.4. That is, drivers in the Expiation group were committing about 50 per cent more offences than those in the DIP group. (The difference was highly statistically significant.) Kloeden and Hutchinson (2006, 2007) made a distinction between what they called “moving” and “administrative” offences. The difference between DIP and Expiation groups was larger for administrative offences than for moving offences.

For discussion of the contrast between no effect on crashes but an effect on offences, see Kloeden et al. (2007).

6.3 Comments

As the drivers themselves chose whether to attend DIP or pay an expiation fee, it could be that there were pre-existing differences between the two groups. Indeed, there were sex-age differences and indications of pre-existing differences in crashes

and offending. Thus any differences found could not be unambiguously ascribed to the DIP, and lack of differences could not be unambiguously ascribed to failure of the DIP. The methodology of a descriptive study is not robust enough for a definite interpretation.

Nevertheless, it seems unlikely to us that DIP has much of an effect on crashes: for this to be the case, it would need to have been cancelled out by some self-selection effect in the opposite direction.

7. Discussion of DIP

We need to make clear that we have not demonstrated that the DIP has no effect, or that it is not cost-effective. The DIP is a cheap safety measure. Crashes are very expensive to the individuals involved and to society, and a saving of even (say) 1 casualty crash in a year might be considered to cover the costs and be sufficient justification for the DIP. On the basis of our results, it is credible that the effect of DIP is actually zero. But the associated sampling error is such that we cannot rule out the possibility that the DIP saves a few per cent of crashes and is cost-effective. It seems unlikely that cost-effectiveness of interventions of roughly this scale can ever be proven or disproven. On average, a teenage driver in South Australia is associated with some thousands of dollars of road crash costs per year. A reduction of only a few per cent that lasted for a few years would thus be worth some hundreds of dollars. Since DIP involves only modest expenditures per participant, even quite a small effectiveness could justify it.

Wundersitz and Hutchinson (2006, Sections 3.5.5 - 3.5.8 and Section 5) made some suggestions about fine-tuning of the details of DIP.

8. Discussion of more intrusive intervention

We would like to call attention again to points made earlier.

- Bartl et al. (2002) emphasised both the desirability and difficulty of participant-centred driver training.

- There is great difficulty in demonstrating crash reductions from driver training (Ker et al., 2003; Masten and Peck, 2004).

And while there are some drivers who are accident repeaters through faults in their attitudes and behaviours, the road trauma problem is largely a problem of the normal, average, driver. Weak interventions are likely to have weak effects. These will always be difficult to distinguish from zero effects. Is there any form of strong, perhaps intrusive, intervention, that might have a strong effect and could be used with the general population of novice drivers? Would it be feasible to treat 17 year olds for the spectrum of attitudes and behaviours that accompany being a normal 17 year old?

Some authors have proposed driver improvement programs akin to psychological therapy. Section 3 of Donelson and Mayhew (1987) reviews the use of individual hearings in driver improvement, and one form that such hearings take is a clinical-diagnostic interview. In South Australia, a report from PPK and Siromath (1986, p. 49) gave some attention to the possibility of establishing a driver counselling group consisting of a number of "highly qualified" counsellors within the Road Safety Division (of the Department of Transport). The compulsory interviews envisaged admittedly seem not to have been intended as therapeutic, but nevertheless this demonstrates that one-to-one meetings are thought by some to be within the realm of practicability. With some degree of plausibility, it could be said that the chief problem of the class of offenders that we are referring to (perhaps, indeed, shared with non-offenders of the same age) is psychological, and the remedy needs to be psychological. There is some plausibility, too, to likely success of psychological treatment --- one important difference from the situation a generation or so ago is the list of successes that techniques under the label of cognitive behavioural therapy (CBT) have had.

In a study by Deffenbacher et al. (2002), the drivers were psychology students who scored high on the Driving Anger Scale, who indicated a personal problem with driving anger, and who desired counselling for that. Two variant therapies were compared, that each involved eight weekly sessions of one hour each, given to small groups of about eight drivers. Results were quite encouraging, though the outcomes were measures like self-reports of risky driving, rather than actual number of crashes.

Galovski and Blanchard (2002) reported a trial of a form of CBT based upon the anger management literature. Most of the drivers were referred to the program by the courts, and a few were self-referred. They were treated in small groups (2 to 5) for four sessions of 90 minutes each. (That is, approximately 1.7 hours of psychologist's time per driver.) The treatment included progressive muscle relaxation strategies, coping skills, education about the impact of aggressive driving, and cognitive strategies. Results were quite encouraging, in that the group receiving treatment improved more than the control group. Note, however, that the sample size was small (28 drivers), and the outcome measures were drivers' own reports of behaviours and feelings. Galovski and Blanchard express the opinion that in most cases, the drivers' problem was their lack of insight.

Perhaps lack of insight can be remedied via self-monitoring. Bailey (2002) argues for making self-monitoring central in improving young drivers. Bailey describes self-monitoring as the learner paying attention to the effectiveness of learning methods and strategies, responding to this feedback, and self-regulating, self-instructing, and self-evaluating during learning. One particular aspect is avoiding unrealistic optimism about the learner's own driving abilities. Bailey was able to cite support in new programs for novice drivers in Finland, Denmark, Sweden, New South Wales, the Australian Capital Territory, the U.S.A., and the Netherlands. Several of these involved group discussions as an aid to self-monitoring.

A review by Sharkin (2004), though its title refers to road rage, is not limited to intentional violence, but includes aggressive driving and anger while driving. Interventions discussed are stress management, time management (organising one's life so that fast driving is unnecessary), cognitive behavioural treatments, and modification of beliefs (e.g., concerning other drivers) that lead to anger.

To require normal 17 year olds be counselled about, or treated for, the attitudes and behaviours that accompany being a normal 17 year old, as a condition of driver licensing, would be going some way beyond what is supported by the research cited above. But perhaps this should be considered if a substantial improvement to young driver safety is sought. It would not be as draconian as some restrictions to driver licences.

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