Submission No. 67

INQUIRY INTO YOUNG DRIVER SAFETY AND EDUCATION PROGRAMS

Organisation: Australasian College of Road Safety

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Date Received: 6/2/2008

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Patron: His Excellency Major General Michael Jeffery AC CVO MC (Retd)
Governor-General of the Commonwealth of Australia

6 February 2008

Mr Bjarne Nordin
Parliament of New South Wales
Staysafe Committee
Macquarie Street
SYDNEY NSW 2001

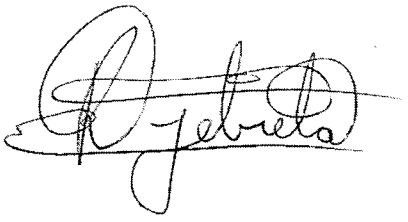
Dear Mr Nordin,

Please find enclosed the College's submission to the Staysafe Inquiry into Young Driver Education & Safety Programs. An electronic copy was also forwarded today's date by email.

We thank you again for the extension to the deadline which gave us the opportunity to contribute fully to this inquiry.

Should you have any questions regarding our submission please do not hesitate to contact me.

Yours faithfully,



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RESPONSE TO STAYSAFE COMMITTEE

Inquiry into Young Driver Safety and Education Programs

Australasian College of Road Safety

1. SUMMARY

There are elements of driver education and training that are important for achieving licensure and have potential road safety benefits. These include:

- Professional instruction as a learner on road laws and basic vehicle manoeuvring, including instruction in dark daytime hours or at night, to allow a safe learner period, achieve licensing and potentially reduce crashes in darkness once licensed to drive independently.
- Truly defensive (i.e., predicting hazards and driving in a way that reduces the risk of a crash, rather than crash management), individualised on-road in-vehicle programs for learner and provisional drivers, conducted over several sessions as part of a graduated driver licensing program, to reduce crash risk in the early months of independent driving.
- Hazard perception training (PC-based or combined classroom and in-vehicle) to improve hazard search and detection skills.
- Diversionary programs to target high risk groups, which are specialised to the young novice and target their specific offences, to reduce re-offending.

While these positive outcomes have been identified, the true safety value of driver education programs in terms of crash, injury and fatality reductions, particularly in the Australian context, is yet to be fully supported. Whilst not supported by research evidence, driver education programs remain publicly desired. There is true passion and commitment to addressing the young driver problem through grass roots, community based programs, often involving teams of volunteers, and showing improved knowledge and attitudes among participants in the short term.

The Federal Novice Driver Trial, although focusing only on one type of initiative, represents a good example of a national cooperative effort to achieve rigorous evaluation of a proposed national program. Nationally coordinated evaluation research is essential to establish best practice in Australia.

It is important to emphasise however, the development and implementation of such programs is not necessarily cost neutral and there is real potential for counterproductive outcomes. Therefore, careful consideration must be given to potential risks as well as potential benefits when considering whether to roll out a demonstration project on a large scale basis.

Aside from education programs, other existing initiatives have demonstrated clear and significant crash reductions. These include lengthy learner driver periods, followed by nighttime and peer passenger restrictions for newly licensed drivers. Evaluation of restrictions recently introduced in New South Wales and Queensland will be important for further developments in Australia. These initiatives also offer a real opportunity for national comparative research to establish best practice.

While there is a need for improved research and development regarding driver education programs, including rigorous evaluation, there is also a need to educate the public on true risks and effective intervention. Political response to public outcry can be misdirected and not only incur unnecessary financial costs but also potentially the loss of lives.

2. BACKGROUND

The Parliamentary of New South Wales Joint Standing Committee on Road Safety (Staysafe) has launched an inquiry into young driver safety and education programs. As noted by the Committee, young drivers remain overrepresented in road crashes and fatalities, which affect not only the young drivers themselves, but other vehicle passengers and road users, their families and communities. Therefore intervention is warranted and the Committee is exploring driver education and training programs as an option.

The Australasian College of Road Safety (ACRS) is a multidisciplinary association for individuals and organisations working in or interested in supporting road safety. Members come from a wide range of disciplines including engineers, epidemiologists, road trauma specialists, researchers, driver trainers, enforcement agencies, policy makers, industry representatives, motoring associations, insurance companies and many others who have a stake in road safety. In preparing this submission, all members were invited to contribute by forwarding their views to a central contact. This submission therefore seeks to represent the views of our members, with a focus on the central issue of effectiveness of young driver education programs; explored by programs for learner drivers and those for newly-licensed drivers. Some attention is also given to diversionary programs for young offenders.

3. YOUNG DRIVER EDUCATION PROGRAMS

A multitude of factors contributes to young driver risk, including demographics, personality characteristics, development factors, driving ability and behaviour, the driving environment and perceived environment; not all of which are amenable to change.[1] Traditionally, driver education programs primarily focus on improving road law knowledge, risk awareness and skill development. For learner drivers, skill development focuses on manual handling of a vehicle in traffic, while for early licensed (provisional) novice drivers, this can extend to more advanced manoeuvring in emergency situations, mostly conducted off-road (i.e., at specialty facilities).

3.1 Learner driver programs

In Australia, the main types of training that take place during the learner period are one-on-one, on-road, in-vehicle lessons with a professional instructor or private driving sessions, usually with a parent. The primary objective is to teach the learners basic manual handling of a car necessary to pass the practical driving test. Other optional formal programs exist to teach additional aspects of driving, often in the form of combined group classroom sessions with smaller group in-vehicle drives at specialty off-road facilities, or PC-based programs, with the object of teaching safety aspects and additional higher order skills, such as hazard perception.

3.1.1 Obtaining licensure

Programs for learner drivers are important and very successful in achieving licensure.[2, 3] UK research indicates the optimal path to obtaining licensure on the first attempt is a balance of a moderate number of professional lessons in addition to many hours of private supervised practice.[4, 5] Professional instruction provides the teaching component, while private supervision allows more varied experience, including in trip length, time of day, road type and driving speed. In particular, substantially more experience driving in darkness, including at night, is achieved during private supervision. These forms of learner training focus primarily on manual vehicle handling skills rather than higher order safety skills.

It is worth noting that in NSW the RTA fund workshops for parents that are provided through local government and are intended to teach parents how to make the best use of the supervised driving practice experience. The focus is on the amount and variety of driving practice, not on handling skills. However, how well this is done depends on the individual parent's appreciation of the issues. This is a state wide program that has been running since 2001, but has yet to be evaluated. It would be worth considering evaluating the effectiveness of this program particularly considering the investment made on behalf of tax payers. This also raises another issue that when such an initiative is introduced, it should be properly evaluated using professionally

accepted common criteria by a highly credible, independent, research centre and/or professional road safety evaluation experts.

3.1.2 Crashes as a learner

In addition, while crashes during the learner period are extremely rare, they are even less likely to occur under professional instruction than private supervision. Swedish research examining crashes nationally over a seven year period found only 14% of all learner crashes took place under professional instruction compared to 86% under private supervision.[6] No fatality crash occurred under professional instruction compared to 16 fatality crashes under private instruction. The varied conditions encountered during private supervision and the professional instructors' use of dual control systems likely contributed to these findings.

In NSW, as elsewhere in Australia, crashes during the learner period are also extremely rare. RTA annual statistical statements from 2000-2006 report between 0-3 fatalities per year, 8 in total, among drivers aged 5-16 years (which include drivers other than learners).[7-13]

3.1.3 Subsequent crashes as a novice

Where learner driver programs are considered to be less successful is in their ability to reduce crashes among newly-licensed novice drivers. This underlies the distinction between the ability to manoeuvre a vehicle in traffic and the ability to do so safely, including with well developed risk perception and positive road safety attitudes that reduce the propensity for risk taking.

Crash risk for newly-licensed novices has been estimated to be at least 20 times that of a learner driver in the UK,[14] with risk of an injury crash found to be 33 times greater in Sweden.[6] This has increased pressure on learner driver programs to target novice crash reductions rather than knowledge and skills necessary for licensure only. To date, however, while some elements of learner programs have shown successes, only a lengthy learner period allowing many and varied hours of supervised driving practice during the learner period has been repeatedly found to reduce crash risk during the early novice driving period.[14-16]. Young drivers (aged between 16-25) have reduced as a proportion of all drivers involved in crashes from 32% in 1996, 28% in 2001 to 27% in 2006. But, the number of young car drivers killed has increased substantially from 61 in 1996, to 47 in 2001 but 76 in 2006. An increase of 62% since 2001 when the GLS was first operational. However, this could also be related to the number of learner driver licences issued soon after the introduction of Graduated Licensing in 2000 – for example in 1998 167,000 learner licences were issued compared with 94,000 in 2002 and 138,000 in 2005. Again this needs to be properly evaluated.

3.1.3.1 Combined classroom & off-road in-vehicle programs

US education programs for learners tend to be school based and extend over several weeks, including a minimum of six hours in a vehicle (often at off-road facility or in vehicle simulator) in addition to 30 hours of classroom-based instruction.[17] Local programs in Australia contain similar elements but tend to be of one day duration or less.[18] Currently, no such program has demonstrated effectiveness in reducing crashes or fatalities. In fact, in the case of the US, these programs lead to earlier licensing, increasing exposure and therefore crashes.[19] Consequently, while once mandatory, US programs are now optional in many states.[16] All such programs are voluntary in Australia (although the ACT has compulsory education sessions to prepare for the learner period).

In contrast, several Scandinavian countries introduced mandatory education and training programs for learners into their graduated driver licensing systems. The programs in Norway and Finland included in-vehicle off-road training to correct skidding on slippery roads; aimed at counteracting the many novice driver crashes occurring in icy conditions. Contrary to expectations, crashes for novices on slippery roads subsequently increased, while no change was found among other drivers.[20] Trained novices were willing to take on more demanding driving conditions and failed to reduce their speeds sufficiently.[21] In Norway, however, where some training sessions were conducted in dark lighting or at night, crashes in these conditions decreased, including at a two-year follow-up, suggesting some context-specific benefits.[22]

In Denmark, where no private supervision is allowed, the mandatory program for learners focused on risk perception and defensive driving; that is, predicting hazards and driving in a way that reduces the risk of a crash. Instruction was provided on-road over several sessions in

increasingly risky environments. Crash and self-report data evaluated over a six year period indicated significant crash reductions in multiple vehicle and low speed maneuvering crashes, but not single vehicle crashes.[23] The evaluation design was hindered by limitations in the national crash database that did not allow direct comparison of trained and non-trained cohorts; these were therefore randomly sampled for the survey. Rather crash analyses compared an age group estimated to comprise newly licensed drivers to an older age group. The analyses could not control for alcohol involvement, number of new drivers or a general decreasing trend in crashes among young drivers in Demark, although reductions among the newly licensed group were deemed greater than could be accounted for by these means.

3.1.3.2 Competency Based Training & Assessment

The ACT, Northern Territory and South Australia offer optional competency based training and assessment (CBT&A) pathways to licensure that can allow exemptions from standard licensing tests and minimum holding periods. Learners must progress through a series of specified in-vehicle drives with an accredited instructor: the ACT specifies 22 key competencies that must be demonstrated; the Northern Territory requires attendance at two daytime sessions; and in South Australia 30 specific driving tasks must be completed.

Evaluation of the ACT's program found that participants held their learner permit longer and undertook more supervised practice driving than a comparison group.[24] In addition, they later reported fewer demerit points in the early provisional period. An early evaluation of South Australia's program found, while a sample of participants acquired their permit at a younger age, held it for a shorter period and gained less private supervised practice than non-participants, they also obtained more professional instruction throughout the learner period and experienced a wider range of driving tasks and conditions under this instruction.[25] Both studies were limited by inability to randomly sample all participant groups and low response rates. Only 24% of ACT CBT&A participants consented to access to their official records over time. In SA, only 84% of the quota for one of the comparison groups was achieved. No tests of significance were reported.

No crash reduction benefits have been reported based on CBT&A programs, in part due to a lack of funded evaluation trials.

3.1.3.3 PC-based programs

More recently, a number of PC-based products have emerged on the market for learner drivers that target improvement of cognitive-perceptual skills necessary for safe driving. These primarily target the prediction and early detection of hazards, that is, defensive driving skills, rather than ways to manage hazardous situations. These programs typically require multiple sessions with built-in feedback mechanisms, such that participants cycle through the program until 100% correct responses are achieved.

Simulator-based evaluations and a more recent on-road study have demonstrated improved search strategies and detection of hazards;[26-28] however, as yet no research has been conducted to demonstrate a subsequent impact on actual crash involvement.

Likewise, while PC-based hazard perception tests are increasingly included among licence test batteries, a clear and reliable association between test performance and crash involvement is yet to be established.[29] Rather, these tests can increase awareness and motivate applicants to develop skills in this area, particularly via more driving experience.[30]

3.2 Novice driver programs

3.2.1 Classroom & in-vehicle programs

A 2005 Cochrane review of post-licence education found no evidence that driver education only could prevent crashes.[31] Of the 24 randomised control trials included in the systematic review and meta-analysis, no differences were found between participants and controls or between one form of education and another. There was also no difference between advanced education and remedial education. No subsequent review has found contrary conclusions.[16, 32]

Post-licence driving courses in Australia are generally available to all licensed drivers rather than specialised to the novice driver.[33] They also tend to include advanced driving

maneouvres, such as those for use in emergency situations, despite many being titled "defensive" driving programs. The counterproductive outcomes found for these types of programs for learner drivers in Scandinavian suggest these programs should not be attended by novices.

3.2.1.1 Hazard perception training

One combined classroom and in-vehicle program that has shown some promise is a UK program specifically focusing on hazard perception for drivers licensed for a maximum of three months.[34] An evaluation compared three training methods: classroom-based training only (2 hours video and small group discussion); on-road training (two one-on-one driving sessions over 2 weeks, including feedback period identifying skills to be practiced); and a combination of these.

The combined method of classroom and on-road training yielded the most significant reduction in average hazard perception times post-training in video-based and on-road assessment tasks. On-road training also showed significant improvements, but not to the extent of the combined training. No significant improvements were found for the classroom-based training only. While promising, as with programs mentioned above, as yet no research has been conducted to demonstrate a subsequent impact on actual crash involvement.

3.2.2 Optional Competency Based Training & Assessment

The ACT's early provisional driver program provides information resources and the opportunity to participate in an optional workshop comprising small group facilitated discussion around their experiences of driving in the first six months. Completion of the workshop allows removal of P-plates and a raised demerit point threshold.

An evaluation of the program found little difference in self-reported attitudes and behaviours post-participation relative to a control group.[35] Participants were more likely to have already attracted more demerit points prior to participation (likely a result of the higher threshold incentive) and continued to attract more points following participation. There was some indication they had fewer crashes, including injury crashes following the program, although numbers were small and no significance testing was reported. This suggested the program could have potential to provide some benefits to those who have acquired demerit points; those that could most benefit from additional insights into their driving; however, more rigorous evaluation is required.

3.2.3 Mandatory post-licence training

Finland introduced a mandatory program for drivers six months to two years post-licensing comprising one hour of on-road driving, three hours of off-road driving with an instructor and four group classroom sessions. The program includes computer-based tests and self-evaluation questionnaires. One-on-one feedback is provided to the driver with a focus on risk avoidance and motivational, self-evaluative skills.

An evaluation, based on multiple large data sources, found little evidence of an effect during the first year; however, at four years post-introduction, significant reductions in crashes on slippery roads and in the dark were found.[36] The extent to which the reductions could be attributed to the program was complicated by a general downward trend in crashes in Finland; however, reanalysis showed crash reductions for novices were more marked than the general crash trend.

3.2.4 Diversionary and educational programs for young offenders

Diversionary and education programs for serious offenders and recidivists show promise but are yet to specialise programs to young and novice driver issues. Based on extensive review, the EU recommends such programs be targeted both to the specific offence and, to the extent possible, to the individual, including by age.[37] In addition, it is recommended that, if the offence represents socially deviant behaviour, trained health professionals should conduct the sessions. Young driver specific programs and offence specific programs are rare, however, with single programs typically run for all offenders in a given jurisdiction.

South Australia's Driver Intervention Program is one example of a program that targets drivers under 25 years.[38, 39] However, while originally focused on alcohol issues for alcohol offenders only, the program was expanded to include all disqualified learner and provisional drivers and to comprise more generalised content in the form of a 90-minute small group discussion. Assessment of the program against best practice literature suggested there was little if any benefit likely, although no empirical effectiveness testing was undertaken.[39] Nonetheless, the reviewers supported its continuation.

In NSW, repeat offenders can be sent to education-based Traffic Offenders Programs (TOPS). TOPS are run in groups of all ages, for all offences by volunteer facilitators on general content areas. A 1999 evaluation of Police offence database records for over 11,000 drivers, including more than 1,500 TOPS participants, indicated participation reduced the probability of re-offending by an average of 25%. Young drivers were not specifically identified, however, age was controlled for in the analysis together with gender, socioeconomic status, and other variables relating to current and previous offences.[40] More moderate reductions in re-offending have been demonstrated for (all-aged) disqualified drink drivers in specific programs to prevent drink driving recidivism in Queensland (15%) and the Northern Territory (13%).[41]

4. CONCLUSIONS AND IMPLICATIONS

Professional on-road instructional programs during the learner period successfully teach learners the knowledge and skills necessary to achieve licensure in a safe, low crash environment. Short-term courses that include sessions in darkness or at night have shown subsequent crash benefits in these conditions once licensed; however, programs encouraging earlier licensure and off-road skid training programs have been counterproductive. Multi-session on-road defensive programs that are a mandatory component of licensing have also demonstrated reductions in crashes once licensed. Australian CBT&A programs have shown some benefits in increasing supervised driving and reducing demerit points once licensed and PC-based products have shown improved hazard search and detection skills; however, further evaluation of the impact on crashes is necessary.

There continues to be a lack of evidence supporting the effectiveness of the traditional classroom plus in-vehicle model of training for newly licensed novice drivers in reducing crashes. There is some promise this model can improve hazard perception skills, but no link to crash outcomes has been examined. Evaluation of an Australian CBT&A program suggests this approach may benefit higher risk drivers – those attracting demerit points – however, further research is needed. Only mandatory multi-session on-road training as part of graduated driver licensing has repeatedly shown crash reductions. Diversionary and education programs for serious offenders and recidivists also show promise in reduced recidivism, but are yet to meet best practice recommendations of specialised programs for young, novice drivers targeted at their specific offences or to demonstrate crash reductions.

Overall therefore, while there have been some scattered positive findings regarding driver education and training programs, their true safety value in terms of crash and fatality reductions is yet to be fully supported. The timing of driver education is a crucial element of program effectiveness.[42] Commencing too early prior to actual licensure without continued education and risking early licensure is not only likely to have little benefit but potentially to be counterproductive. Likewise, commencing once driving habits and attitudes have been well established is unlikely to shift perceptions and behaviours. Overseas experience indicates, when considering programs for all drivers, only the mandatory on-road defensive programs situated within graduated driver licensing programs, which take place over several weeks, if not months, and are targeted at the individual, are likely to achieve crash benefits.

Young drivers are not a homogenous group, however. Additional early targeting of high-risk individuals (i.e., in addition to general intervention for all young drivers) is difficult due to inadequate identification methods. Early attraction of demerit points and licence disqualifications that lead to diversionary program participation provides the potential to include additional programs targeted at high risk drivers in the early high-risk months of independent driving.[37, 43] Further research and developments in this regard, in line with best practice, is essential to establish crash reduction benefits.

It is important that the Staysafe Committee recognises that many of the evaluations conducted to date are of weak design and may not provide useful evidence as to the benefits or weaknesses of the programs examined. A distinction must be made between a lack of evidence, that is, an evaluation that shows no effect, and a poorly conducted evaluation, that is, one which may or may not show an effect but the design of the evaluation ensures that no meaningful answer is possible. Many of the abovementioned evaluations have such design limitations, including poor participant response rates, limiting numbers and the ability to conduct significance testing, or inclusion of non-randomised groups, introducing the possibility of significant volunteer bias. This does not mean that driver education is ineffective, but rather we cannot yet determine this objectively based on empirical studies. Further research is not necessarily seeking a new "silver bullet", but rather, if current best practice is combined into a comprehensive program that is correctly implemented and evaluated, the true benefits of driver education programs may be realised.[44]

To this end, it is important to give driver education and training efforts in Australia due credit for their passion, commitment and effort in addressing the young driver problem. Many community-based programs are run at a grass roots level, often involving teams of volunteers, which are attracting increased attention at the community level and may do well to improve awareness of the young driver program and the need for effective intervention. Generally, only small projects have been funded to date, such as for NSW's RYDA and RRISK programs, which demonstrate improved attitudes and knowledge among participants, at least in the short term.[45, 46] Several of our members also witness anecdotal benefits through their personal involvement in this work.

Despite this, we cannot argue objectively that there is conclusive evidence of crash or injury reduction benefits due to young driver education programs. Nonetheless, there continues to be a strong desire for such programs among the Australian public. The Federal Government is seeking to meet this demand by trialling a national novice driver training program. It is important to emphasise, however, that the development and implementation of such programs is not necessarily cost neutral and there is real potential for counterproductive outcomes, as found in Scandinavian countries. Therefore, much consideration of the potential benefits and the potential risks must be considered before any demonstration project is rolled out on a large scale basis.

The Federal Novice Driver Trial, although focusing only on one type of initiative, nonetheless represents a good example of a national cooperative effort to achieve rigorous evaluation of a proposed national program. The Federal Office of Road Safety (FORS) young driver program,[47] conducted in the mid-1990s, previously provided an important impetus in this area; however, this research is now relatively dated. There is continued need for nationally coordinated research on young driver safety among Australian states and territories to establish best practice in the Australian context.

In contrast to the lack of crash benefits found for driver education programs, other initiatives have had significant impacts on crash reductions in several overseas jurisdictions. These include a lengthy learner period, during which some professional instruction is undertaken throughout and is accompanied by many and varied practice driving sessions under private supervision. Once licensed, novices should be subject to some form of restriction on driving unsupervised at night and when carrying peer passengers, or a combination of these. Such graduated driver licensing models have been associated with an average 20% reduction in fatality crashes.[48] One US state experienced a 60% reduction in crashes during nighttime restricted hours.[49] The substantial nature of these benefits cannot be ignored.

This is substantially what is being done in NSW. However, the critical details also need to be able to established through thorough evaluations. For example, is there evidence that the increase from 50 to 120 hours mandatory supervised practice, will reap benefits that justify the social costs? The latter include the difficulties imposed on those who do not have access to a driving supervisor – including young people but also adults without family or social networks, e.g. migrants. Also ACRS is not aware of any evidence base that supports any vehicle performance restrictions have a road safety benefit, which may be criticised for encouraging young drivers to buy their own cars albeit older less safer vehicles, because they cannot drive the family car which is fitted out with safety systems, once they have their provisional licence.

New South Wales and Queensland are leading the example in Australia by recently introducing forms of these licensing restrictions for provisional drivers. This presents a real opportunity to conduct comparative research with states and territories not implementing such restrictions. Rigorous evaluation of these initiatives is essential to better establish best practice in Australia.

It is important that governments and researchers are supported to conduct high quality research. Conduct of intervention studies such as randomised control trials provide the strongest evidence of effectiveness and should be considered as the gold standard for such research. These are resource intensive but as they provide the best level of evidence, should be considered where possible. Where randomised trials are not possible, other experimental designs may be considered (e.g., interrupted time series or controlled pre-post designs).

Members have also commented on the following points. Firstly, the process by which decisions are made in that some types of programs are evaluated and others are not, needs to be reviewed. Secondly, public information should also be provided in regards to an evidence base of what does not work (failed or bad practice) in order to discourage others from going down the same mistaken paths. Thirdly, the way in which young drivers who crash are presented in crash data reports and analysis, to consider what the impact of such reports might be in influencing young driver expectations, behaviour and culture.

The College members agree there is a need for improved research and development of young driver education programs, focusing on the most promising elements to date, and including rigorous evaluation. However, there is also a need to educate the public on true driving risks and proven effective intervention. This includes young drivers and passengers themselves, but also their families, local and broader communities, Police and policymakers, insurance companies, and car manufacturers and advertisers who market high speed performance. Any education and training program is more likely to be effective if it includes a coordinated, multi-faceted, community-based approach with strong graduated driver licensing laws as a foundation.[50] Political response to public outcry can be misdirected and not only incur unnecessary financial costs but also potentially the loss of lives.

5. REFERENCES

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