

9/84

SAFETY ISSUES AND LEGISLATION  
CONCERNING THE YOUNG DRIVER

Paper presented at the 23rd Annual Workshop in Transportation Law - July 26, 1984 at Rockport, Maine, by Andrew R. Hricko, General Counsel and Secretary Treasurer of Insurance Institute for Highway Safety.

The subject of teenage drivers is one which has reached national attention. Once looked upon as the problem of local officials, the lectures at school before prom night or chasing the young drivers from the shopping centers where they hung out drinking beer sitting on the hoods of their cars. Now it is looked upon as a subject fit for state and national attention, witness the recent enactment of the 21 year old alcohol purchase provisions in the federal legislation to state law on mandatory safety belt use for new drivers.

Why all of a sudden is this action being taken - is it a new situation - no - we all knew it was a problem, it's just that it has been better documented over the last few years and the depth of the tragic results have brought it to the attention of the lawmakers.

I am going to review with you the extent of the problem, some solutions which research has shown to be effective and how this research may translate itself into state legislation - legislation you may be asked to draft or comment on as a member of the Attorney General's staff.

The overinvolvement of teenagers in motor vehicle crashes is well known. By a wide margin, the major public health problem for teenagers in the United States, Canada, and worldwide is injuries associated with motor vehicle use. In the United States, nearly half of all the deaths of teenagers 16-19 years old - both males and females - are due to motor vehicle crashes. As drivers, teenagers' involvement in fatal crashes is higher than for any other age group, whether the denominator is based on total population, licensed drivers, or mileage. The rates for male teenagers are particularly high.

Teenagers far exceed all other ages in fatalities per capita, as both drivers and passengers in motor vehicles. In the United States and probably elsewhere, the numbers of teenage deaths as passengers and as drivers are about equal. The majority of teenage passengers killed were traveling in cars driven by other teenagers at the time of the crash.

When teenagers drive, they not only have a very high fatality rate themselves, but also contribute substantially to the deaths of others. These include not only passengers in the vehicles the teenagers drive, but also occupants of other motor vehicles, pedestrians, bicyclists, and motorcyclists. In the fatal crashes in which they are involved, teenage drivers are much more likely than older drivers to be "at fault" or responsible for the crash. Teenage drivers are responsible for about five times as many crash deaths per license holder as drivers aged 35-64.

Teenage drivers more often kill other people than themselves. For example, in passenger vehicle crashes in the United States in 1978, more than half of the people killed in the crashes for which teenage drivers were responsible were their passengers or occupants of other vehicles, whereas the majority of people killed by drivers aged 21 or older were themselves.

In light of these grim statistics, it is important to look for ways to reduce the injuries to teenagers and others involved in their crashes. In this review, I'll look at law-based and regulatory approaches to reducing such injuries. The review is highly selective. Laws and regulations pertaining to motor vehicles and highway design are excluded. Laws and regulations applying to all people or drivers are not covered. Only those applicable exclusively to teenagers or, in some cases, to newly licensed drivers are covered. There are three laws or law changes

which, if implemented, are known to produce substantial reductions in motor vehicle injuries to teenagers and others involved in their crashes: raising the alcohol purchase age, raising the licensing age, and night curfews for beginning drivers.

#### The Legal Minimum Age for Purchasing Alcoholic Beverages

Between 1970 and 1975 29 U.S. states and all 10 Canadian provinces reduced the legal minimum age for purchasing alcoholic beverages. The minimum age had been 21 in most cases; it was reduced to 18, 19 or 20 - most frequently 18. A study conducted in two states and one Canadian province indicated that reducing the alcohol purchasing age from 21 to 18 resulted in significant increases in fatal crashes - particularly in nighttime and single vehicle crashes in which alcohol is most often involved - among drivers under 21, compared to adjacent areas where the purchasing age laws were not changed. These increases occurred not only among 18-20 year olds, who were directly affected by law changes, but also among 15-17 year olds. Other researchers in the United States and Canada reported similar findings.

As a result of these and other reports of growing problems related to teenage drivers and alcohol, the majority of states that had lowered their legal minimum ages for purchasing alcohol in the early 1970s have raised them, although not back to the original levels in most cases. This began in the U.S. in 1976 with Minnesota. At least two Canadian provinces have also raised their alcohol purchasing ages.

In 1981, the Insurance Institute studied all the states that had raised their alcohol purchase ages and for which sufficient post-law data were available. Nine states were included in the study. Each of the nine

states was paired with a neighboring comparison state in which the legal minimum age for purchasing alcohol remained unchanged throughout the study period. As a further control, the experience of drivers older than those to whom the law changes applied, who could purchase alcoholic beverages legally in law-change states throughout the study period, was taken into account.

There were reductions in nighttime fatal crashes among drivers covered by the law changes in eight of the nine states studied. There was considerable variation in these reductions - from six to 75 percent. Based on all nine states, there was an average reduction of 28 percent. In only one state, Montana, was there an increase in fatal crash involvement.

The substantial variation in results among the states was to be expected, since they differ in size, population, region, and other respects. In particular, the numbers of drivers in the affected age groups involved in fatal crashes varied tremendously, from a low of 28 drivers in Montana to a high of 538 in Michigan during the 21 months following the law changes in those states. Since it is well known that such sample size variations lead to considerable variations in results, overall results rather than results from individual states were emphasized.

The study is noteworthy in terms of predicting what other states can expect if they raise their alcohol purchasing age because it was based on many dissimilar states.

#### The Legal Minimum Licensing Age

The Institute has also studied the effect of variations in the legal minimum licensing age on fatal motor vehicle crashes. It was not possible

in this case to study a state or province that had recently changed its licensing age, since none has done so. Rather, three states located in the same general geographic area and having similar motor vehicle fatality rates were selected for the study: Connecticut, which licenses at 16 years and 30 days, Massachusetts (16 1/2), and New Jersey, the only state with a minimum licensing age of 17.

If 16 year olds are not allowed to be licensed, the obvious expectation is that fewer 16 year old drivers will be in crashes. However, lacking contrary evidence it was possible that 16 year olds might be involved in crashes more often as passengers, pedestrians, or bicyclists than their peers in states where 16 year olds can be licensed. It was also possible that the crash involvement of older teenage drivers was higher than in states where earlier licensure was allowed, because the drivers were less experienced.

The study was based on fatal crashes during 1975-1980, together with population data by age. In Connecticut, 42 percent of the 16 year olds were licensed to drive during the study period, compared to 14 percent in Massachusetts, and none in New Jersey.

The results for Massachusetts were ambiguous, but the Connecticut-New Jersey comparison indicated that New Jersey's 17 year old licensing age is associated with reduced fatal crash involvement. The involvement of 16 year olds as drivers is greatly reduced: only 33 such drivers (4 per 100,000 population) were in fatal crashes in New Jersey during the six years studied, compared to 26 per 100,000 in Connecticut. The difference in rates for age 16 were much greater than for ages 17 and older. In fact, ratios between Connecticut and New Jersey at other ages were about the same (i.e., close to 1.0). Furthermore, New Jersey's 16

year olds were not dying more often as passengers, bicyclists, and pedestrians. The 16 year old passenger death rate was 10.1 per 100,000 population in New Jersey, compared to 9.7 in Connecticut.

Rates of 17 year old driver involvement in fatal crashes in New Jersey (46) were slightly higher than in Connecticut (40). Although differences of such small magnitude also occurred at some other ages, it is possible that the reduced crash involvement of 16 year old drivers in New Jersey may be partially offset at age 17. The pattern observed is compatible with the driver inexperience hypothesis, although it may have other explanations. Whatever the case, the net effect of New Jersey's 17-year-old licensing law is strongly positive. If ages 16 and 17 are combined, the resulting rate in New Jersey (25) still is substantially lower than in Connecticut (33).

Based on the Connecticut -- New Jersey comparison, it is estimated that 65 to 85 percent reductions in 16 year old driver fatal crash involvement can be expected if the licensing age is increased from 16 to 17.

The suggestion has been made that injuries might be reduced if the age of initial licensing were lowered, rather than raised, so that young drivers would be allowed to accumulate more supervised driving experience before they reach the age at which they can presently be licensed. The effect of lowering the driving age is, of course, an empirical question, but it is possible that such greatly increased exposure among young teenagers would overwhelm any positive effects on their driving behavior, resulting in an increase in crashes.

### Night Driving Curfews

Twelve states in the U.S. currently have laws that prohibit young drivers from operating motor vehicles during late evening and/or early morning hours. These are referred to as "curfew laws," which vary in terms of the ages of drivers covered, hours restricted, and exceptions allowed. In another study, four states (Louisiana, Maryland, New York, and Pennsylvania) whose curfew laws are among the strongest were studied.

To determine the effect of curfew laws, the crash involvement of young drivers affected by the curfews in each state studied was compared with the crash involvement of drivers of the same or very similar laws pertaining to young drivers. New York and Pennsylvania were matched with Ohio, and Louisiana was paired with Mississippi. Maryland's curfew law was implemented in 1979, as part of a provisional licensing system applying to newly licensed 16 and 17 year old drivers. Maryland data prior to 1979 were used as the comparison for Maryland following adoption of its curfew law.

The hours just before and just after the curfews were examined separately, because of the possibility that curfews might affect these noncurfew hours as well. For example, curfew affected drivers might do most of their evening driving just prior to the curfew, which could reduce any positive effects curfew laws might have on crash involvement.

At age 16, there were estimated reductions in driver crash involvements during curfew hours in all four states studied. The percentage reductions were greatest in Pennsylvania (69 percent) and New York (62 percent).

In another study, it was found that teenagers in the United States drive less than older drivers and do more of their driving at night. Their mileage-based rates compared to those of older drivers are far greater than are their rates per licensed driver or per capita. Teenagers -- particularly 16 year olds -- are overinvolved in crashes during both daytime and nighttime hours. Nighttime rates for 16 year old male drivers are particularly high.

In the year studied, the period from midnight to 5 a.m. accounted for 17 percent of the 16 year old drivers in fatal crashes, but only 2 percent of all the miles they drive. The 9 p.m. - 6 a.m. period accounted for 43 percent of 16 year old drivers in fatal crashes, and 16 percent of the mileage.

#### Arguments For and Against Laws for Teenagers

It is clear that impressive reductions in motor vehicle crashes and injuries associated with teenagers' driving would occur if all states and provinces raised the alcohol purchasing age, the licensing age, and/or instituted night curfews. There has been recent movement only on the alcohol purchasing age law, and still the majority of states and all provinces allow people younger than age 21 to purchase some or all alcoholic beverages. New Jersey and Newfoundland are the only places with a 17 year old minimum licensing age. Most other states and provinces license at age 16, and a few states allow all 15 year olds to obtain licenses. Only 12 states and no provinces have night driving curfews; some of these apply only to 15 year olds or cover only hours when most teenage drivers are off the roads anyway (e.g., 1:00 a.m. to 5:00 a.m.).

There is clear legal precedent for special policies directed at teenagers as a group. Part of the rationale for laws pertaining exclusively to teenagers is that the motor vehicle crash injury problem is greatest in this age group. Although drivers in their twenties also have high crash rates, a decline in rates begins at about age 20 and accelerates thereafter. For example, per capita rates of driver involvement in fatal crashes -- for both passenger cars and all motor vehicles combined -- peak at ages 18-19 and then decline.

Opposition to laws restricting the driving or drinking of teenagers as a group comes from teenagers and adults, including parents of teenagers. Obviously, most teenagers want to drive. Getting a license is a rite of passage. It bestows adult privileges and is important in terms of such factors as prestige, increased freedom, and dating. And, of course, when teenagers drive, this frees their parents from having to transport them. Teenagers who drive can substitute for parents in doing errands and transporting other family members.

Arguments against laws restricting the driving or drinking of teenagers often include the notion that teenagers are being singled out unfairly, at least partly because many of them cannot vote. The problem is said to be as great (or also great) among people in their early twenties, so why not raise the driving -- or drinking -- age to 25 or even higher? It is also argued that such laws, aimed as they are at all teenagers, unfairly punish many teenagers who are responsible, problem-free drivers.

Practical difficulties also are foreseen when driving by teenagers is restricted. When a legislator in Connecticut introduced a bill (later withdrawn) to raise the driving age to 17 in that state, it was argued that teenagers need licenses in order to hold jobs or to get to school.

Obviously, the laws that have been described involve tradeoffs. 17 year old minimum licensing age policy would result in inconveniences for many teenagers and their parents and others, and in some cases, hardships. In debating this policy, the negative effects foreseen as a result of mobility restrictions must, of course, be weighed against the substantial decrease in motor vehicle deaths that would result.

Night driving curfews for 16 year olds, though less effective than raising the driving age to 17, would appear to have greater public acceptability. The practice driving teenagers do before they are licensed takes place primarily during daylight hours, so that most teenagers when first licensed have little or no experience driving when it is dark.

In addition, most travel that takes place during late night/ early morning hours involves recreational purposes and is not "essential" travel. Most existing curfew laws exempt certain types of driving such as to and from work or school. Yet in the only state I know of in which a night curfew has been proposed recently (California), it was voted down.

Laws requiring child restraints and laws aimed at drunk drivers have been passed recently in many U.S. states. Both laws involve highly emotional issues -- parents who do not protect their children, and drivers who kill innocent people and are insufficiently punished. This is in contrast to the laws for teenagers, since they would apply to all teenagers, rather than only to those contributing to the problems of motor vehicle crashes and crash injuries. This may be an important reason why such laws have received limited support. To quote from a recent commentary on teenagers, "They don't all need to be harrassed and hassled because some small portion of their group can't or won't conduct themselves in an acceptable manner in cars on the highway."

This point of view raises the question as to how effective it would be to apply laws and regulations only to the teenagers who constitute the problem.

#### Laws Directed Against Teenage "Problem Drivers"

Several difficulties are encountered in attempting to reduce injuries associated with teenagers driving by directing countermeasures only against those contributing to the problem. First of all, the suggestion that the focus should be on teenage "problem drivers" implies that the bulk of the problem is due to a small group of chronic wrong-doers. This is incorrect, at least in terms of crash involvement. The group is neither small nor is it the same people from year to year. About half of all drivers can be expected to have one or more motor vehicle crashes during the teenage year.

Secondly, there is the question of our ability to identify the drivers most likely to contribute to the problem. This is usually attempted on the basis of driver records, but although drivers with repeated traffic violations and/or crashes in a given period are more likely than drivers in the general population to have subsequent crashes, most of them will not crash in a subsequent time period. The majority of drivers who do crash have had no crashes or violations during the preceding time period.

A further question concerns the extent to which there are effective ways to reduce crashes among populations identified through driver records as in need of intervention. When competent evaluations of driver improvement programs have been conducted, they have been found to have very limited success in reducing crashes, although some have been found to

reduce subsequent traffic violations. Rehabilitation programs for persons convicted of drunk driving have also been found not to reduce crashes, although license suspension is somewhat effective in doing so.

Even if there were efficient driver improvement programs, most drivers under age 18 who are in fatal crashes would not have been identified for rehabilitation prior to their crashes. Only about one in five of the more than 19,000 drivers under age 18 studied by Dr. Robertson of Yale University had a prior record of a crash or a conviction for a moving violation. It has been noted by California officials that the number of teenagers who participate in driver improvement programs in that state has been small because of the substantial time lags before drivers' records reflect multiple conviction entries and participation in driver improvement activities is scheduled.

A few states have increased point systems for youthful drivers to speed up driver improvement actions or instituted new administrative procedures, California and Maryland are two examples.

In terms of the effect of the driver improvement component of these programs on subsequent crashes, the best estimate now available of their likely effect has to be based on the results of prior research on driver improvement programs. It is unlikely that such programs tailored to new, teenage drivers will have an important effect on their crashes. Thus, it appears that effective ways to reduce the injuries associated with teenagers driving through laws or regulations directed at those most likely to contribute to the problem may not be presently available. It appears in order to be effective, it must go across the board and cover all teenagers.

Other Laws and Regulations

Maine's Law Against Teenage Drinking and Driving. The state of Maine has recently adopted a law that calls for an automatic, one-year license suspension for any driver under age 20 whose blood alcohol concentration equals or exceeds 0.02 percent. Thus, even one drink, two at most, will put the teenage driver in violation of the law. The legal minimum age for purchasing alcoholic beverages in Main is 20, and then 0.02 percent BAC law was apparently designed to supplement the purchasing age law. The effect of this law in reducing crashes is unknown at this time, but there are indications that it has been vigorously enforced in its early days. According to the Maine Highway Safety Committee, 186 teenagers had their licenses suspended for a year between June 23, 1983, when the law went into force, and August 2, 1983.

Learner's Permit Variations. There is considerable variation in the age at which a learner's permit may be obtained and in the length of term of permits, both among U.S. states and Canadian provinces. Research has not been conducted on these factors, but a state licensing at age 16 can reasonably be expected to have more 16 year old licensure and therefore more crashes, if learners' permits can be obtained at age 15 3/4, rather than at age 16. Similarly, learners' permits that are valid for three months will likely result in earlier licensure, and increased crashes, compared to states in which permits are valid for one year. Even a seemingly minor change -- for example, Maryland's recent extension of the length of term of a learner's permit from three months to six months -- may have some positive effects.

Provisional Licensing Programs. Most states in the U.S. place restrictions on the operation of motor vehicles by teenagers, either by placing teenagers or original license applicants on probationary status, or by laws that affect them in a manner similar to probationary licensing. The effect of these various restrictions on crashes and violations are unknown.

During the 1970's, the U.S. National Highway Traffic Safety Administration (NHTSA) developed a model process for the provisional (graduated) licensing of young novice drivers, in which full driving privileges would be bestowed in progressive stages. The objective was to ... "ease the youthful new driver into the driving environment through controlled exposure to progressively more difficult driving experiences; thereby, reducing the number of automobile accidents and traffic violations by young novice drivers." Elements of this program include parent-supervised driving practice for young novice drivers, license testing and certification geared to young beginning drivers, a nighttime driving restriction, and a youth-oriented driver improvement program.

As indicated earlier, Maryland and California have adopted provisional licensing programs for 16 and 17 year olds, incorporating versions of the NHTSA program's elements. Maryland's program began in 1979, California in October 1983. Maryland's program also includes the 1 a.m. - 6 a.m. nighttime driving restriction during the provisional licensing period. California's program, designed to make a driver's license more difficult to get and keep, includes additional supervised practice driving involving parent participation, a guidebook for parents to assist in instructing their children how to drive, a minimum learner's permit period of one month, a new written test, and a longer waiting period to re-take driving tests.

Both of these programs are being evaluated, so that their effect on crashes and violations will be established.

Belt Use Requirement for Teenage Drivers. In Canada, the provinces with seat belt use laws include teenagers under the requirement, although data from both Canada and elsewhere suggest that teenagers are one of the groups least likely to comply with such laws. New York in 1983 instituted a regulation requiring learner's permit holders to wear seat belts. In no other state are any teenagers required to use belts, although their use rates are much lower compared to adult drivers. A preliminary review of safety belt use rates by such learners at 3 sites: 39 vs. 7 percent, 32 vs. 12 percent, 6 vs. 6 percent.

Motorcycle Helmet Use and Licensing Laws. Many states in the U.S. require helmet use by motorcyclists under age 18, but not by motorcyclists of other ages. There is nearly universal helmet use by motorcyclists in states in which helmet use by all drivers is required, but only about half of both younger and older motorcyclists use helmets when use is required only by younger motorcyclists. Nevertheless, in the absence of a helmet law for all ages, requiring helmet use by motorcyclists under age 18 is likely to have some positive effects. This has not yet been researched adequately.

Many teenagers are killed riding motorcycles, and this extends down to the pre-teen years. During 1975-1982, there were 758 motorcycle drivers age 14 and younger killed, in the U.S., compared to 519 passenger car drivers of these ages. About half of the teenage motorcyclists under age 18 in fatal crashes were unlicensed. More vigorous enforcement of motorcycle licensing laws might reduce these deaths.

Most states in the U.S. allow licenses for driving a motorcycle to be obtained at the same age as for an automobile. A few states allow motorcycle licensure at younger ages. The relationship between motorcycle licensing laws and rates of teenager involvement in motorcycle crashes has not been adequately studied, but it seems likely that raising the age for motorcycle licenses would reduce these rates. Allowing motorcycle licenses to be obtained at an earlier age than licenses to drive a car makes little sense. Motorcycles are much more difficult to drive than cars, and they provide much less protection. Therefore, crashes are more likely to occur, and injuries per crash are greater.

#### Summary

I predict that during the next state legislative session, bills are going to be introduced on the various subjects noted. Teenage drivers are a big highway safety subject and I don't have to tell you how some legislators react to subjects with public appeal. It is unfortunately also a daily recurring subject; the following are taken from yesterday's local Maine newspaper:

- \* Kevin Berry, 19, Kenduskeag, died in a Sunday afternoon crash when the motorcycle he was riding left Route 222 in Stetson and hit a utility pole.
  
- \* Nathan Fox, 17, of Steep Falls, was badly burned and died Friday night when a car hit a tree, rolled over and burst into flames in Limington.

Your department will, I am sure, be asked to comment on these bills, you should be aware of the latest research. I have a handout here which lists some 19 different studies on the teenage driving problem either conducted by the Institute's staff or under contract to it. There are a lot of other studies conducted by other research groups and state research departments.

One role that the TRB could play is to compile and provide bibliographies of current research on pending highway safety subjects for its members; a reference piece that is badly needed. The teenage subject is but one of many -- surely every state will have safety belt legislation introduced now that the federal air bag decision incorporates a provision for it -- do safety belt laws provide substantial reduction in deaths and injuries -- researchers disagree. You should have available the latest research or at least know where to get it.

The aging of America is going to bring new problems with older drivers -- this is an area hardly touched by research and extremely politically sensitive -- these people can vote -- we should know the extent of the driving problem.

One could agree that the preparation of such material is the role of NHTSA -- if it is, it is not being filled. It may be appropriate for the TRB to fill this void and one the staff may wish to look into.