

IGNITION INTERLOCK DEVICES

A Report to the Legislature

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Minnesota Department of Public Safety

Prepared by the Commissioner of Public Safety
in response to
Laws 1987, Chapter 681, Section 18

Executive Summary

Drunken driving is a serious problem in Minnesota and throughout the nation. Of particular concern are persons who continue to drink and drive even though their licenses have been revoked or suspended for previous DWI offenses. In a search for a means to keep these drivers off the road -- *especially if they have been drinking* -- ignition interlock devices have been developed. These devices incorporate a breath-testing mechanism that senses whether the driver has been drinking and prevents operation of the vehicle until the driver is sober.

The Minnesota Legislature (Laws 1987, Chapter 681, Section 18) required that the Department of Public Safety (DPS) review other states' experiences with ignition interlock devices and make a report regarding the feasibility of these devices by January 1, 1989. In addition to carefully studying other states' reports of their use of ignition interlock devices, DPS obtained a report (entitled "Potential for Application of Ignition Interlock Devices to Prohibit Operation of Motor Vehicles by Intoxicated Individuals") from the National Highway Traffic Safety Administration (NHTSA).

Based on the reported experiences of five other states (California, Michigan, Oregon, Texas, and Washington) and the NHTSA report, the best short answer to the ignition interlock question is: "It's too soon to tell." There is not enough data and not enough real world experience to say definitively *whether these devices could help reduce the problem of drunken driving*. The NHTSA report, which is attached, provides an extensive look at the issues the Legislature directed DPS to study, and it is provided in lieu of a separate report from DPS. This executive summary reviews the findings contained in the NHTSA report in reference to the five questions that the legislature specifically directed DPS to answer.

(A) Does the use of ignition interlock devices have a demonstrated effect on the incidence of repeat drunk driving offenses?

The NHTSA report contains the following comments on this issue:

"Current interest has focused on applying this technology to convicted DWI offenders as a condition of probation or to obtain a restricted driving privilege. Critical information necessary to estimate the potential effectiveness of these devices in this application is lacking. This information includes evidence that the devices function properly under real world conditions and evidence that persons required to use the devices do not tamper or circumvent their use and do not elect to operated unequipped vehicles when drinking.

"There is not yet enough evidence available to judge how effective these devices will be in deterring alcohol impaired driving and related crashes.

"In the absence of evidence that these devices are effective it is not appropriate for these devices to be used in lieu of other sanctions that have evidence of beneficial effects (e.g., license suspension). Use of this technology as an additional

condition of probation or for reinstatement of a restricted driving privilege does appear appropriate." (Page viii)

Further, the NHTSA report states:

"These existing programs are so new that it is too early to have meaningful information about the effectiveness of the ignition interlock devices. A number of evaluation projects are planned or have been recently initiated to examine the impact of the use of ignition interlock devices. California, for example, is required by its legislature to conduct an evaluation of its ignition interlock program to determine the effect on recidivism and the reliability of the devices. Oregon, in its authorizing legislation, is also required to evaluate the impact of its one-year pilot program. In addition, privately sponsored studies are under way in Calvert County, Maryland and in Hamilton County, Ohio. results from these studies are not expected to be available for a couple of years." (Pages 20-21)

Although some states have initiated evaluations of the ignition interlock devices, the NHTSA report expresses some concern about the usefulness of those studies:

"A number of evaluation studies are now planned or under way in California, Oregon, Ohio, and Maryland. Results should be available in two years. These studies are not using methods designed to provide unambiguous evidence about the effectiveness of ignition interlock devices in reducing recidivism. Some participants expressed concern that a number of research efforts were being funded by manufacturers, rather than by an independent source (without a vested interest in the outcome)." (Page 23)

Finally, the NHTSA report raises the following issues:

"Research is needed to determine how effective ignition interlock devices are in reducing alcohol impaired driving. This information will be needed for the different application of this technology. Difference in effectiveness may exist depending upon the population using the devices (e.g., convicted DWI offenders, persons with a drinking problem, commercial operators, etc.).

"The extent to which people with alcohol problems will voluntarily abide by an order to operate only a vehicle with an ignition interlock device installed is a major question. How much tampering and circumvention will occur is unknown. Current devices are designed to prevent or record obvious attempts at tampering and circumvention. However, testing conducted for NHTSA has shown that a motivated individual could fool the device. Also, the extent to which offenders violate the conditions of their restricted permission to drive by operating vehicles not equipped with an ignition interlock must be determined." (Page 27)

(B) Should the use of ignition interlock devices be mandated for all convicted drunk drivers, or should their use be a discretionary matter for the courts and the Department of Public Safety?

The NHTSA report does not specifically address this issue except to note that the laws in the five states, rather than mandate the use of ignition interlock devices for all convicted DWI offenders, provide for discretion on the part of the courts. In some cases, the devices are used as a condition

of probation; at other times, the device is required as a condition for a restricted driving permit. (Pages 17-19)

(C) What technical or operational problems do ignition interlock devices present and how can these problems best be resolved?

Although the NHTSA report makes several comments about the technical or operational problems that may be associated with ignition interlock devices, the recurring comment is that there is insufficient data on which to base any conclusion:

"Laboratory tests have shown the current breath test ignition interlock devices to be relatively accurate in detecting low driver BAC (blood alcohol concentration) levels (i.e., 0.04% BAC). The accuracy and reliability of these devices under real world conditions is unknown. There is no apparent reason why any operation problems cannot easily be overcome." (Page viii)

NHTSA conducted tests on three different brands of ignition interlock devices: "Autosense", manufactured by Autosense Corp. of California; "Guardian Interlock", manufactured by Guardian Interlock System, Inc. of Colorado; and "Safety Interlock", manufactured by Safety Interlock, Inc. of California. In an expanded discussion of the laboratory tests, the NHTSA report states:

"During 1987, NHTSA tested the three devices described above to determine their accuracy in distinguishing BACs above and below a given threshold value, to assess how well the pressure and temperature sensors would prevent bogus (non-breath) air samples from passing the test, to determine how easily a simulated alcoholic breath sample could be filtered to remove the alcohol and pass the test, and to determine how easily a naive person could learn the breath code (CPBA) required on the Guardian device.

"Two units of each device were evaluated during this study. All the devices were set to a threshold of .03% BAC. BACs at or above this level were supposed to prevent a user from starting the car.

"All of the devices prevented a start 100% of the time for breath samples at .04% BAC (except one unit that was obviously out of calibration). Breath samples at .03% BAC prevented a start 0%, 50%, and 100% of the time by the Guardian, Autosense and Safety-Interlock devices, respectively. Breath samples at a .02% BAC prevented a start 0% of the time by the Guardian units, 10% of the time by the Autosense devices, and 90% of the time by the Safety Interlock units. None of the devices prevented a start after testing a 0.0% BAC sample. Thus, the three devices all appeared reasonably accurate in detecting low BAC levels and hence preventing persons with even moderate BACs from passing the test." (Pages 15-16)

The NHTSA test specifically tried to circumvent the interlock devices, with the following results:

"Attempts to introduce bogus air samples into the devices met with varying degrees of success depending on the techniques used and the anti-circumvention measures contained in the devices. For example, use of a toy rubber balloon and a plastic produce bag (obtained from a grocery store) fooled one of the devices, and a mylar balloon could be used to pass the test in all three devices. The Safety

Interlock device, with the temperature sensor, could be fooled by warmed samples in many cases.

"The filtering tests were designed to take a simulated breath sample with a BAC ranging from .03% to .10% BAC, filter it through some readily available medium to remove the alcohol, and present it to the devices. Filtering systems were a common styrofoam coffee cup partially filled with warm water and a paper tube packed with a commercial absorbent.

"The water filter effectively removed enough of the alcohol from the simulated breath sample to pass two of the devices. It was not possible to generate sufficient pressure blowing through the water filter to satisfy the higher pressure requirement of the Autosense device. Use of paper tubing packed with an absorbent passed all three systems. With the Safety Interlock device (which had a temperature requirement), it was necessary to blow through the tube several times to warm the sample before it would be accepted.

"In summary, it appears that there are relatively uncomplicated strategies that can be used to "fool" these devices in spite of their anti-circumvention features. These devices contain features that make circumvention more difficult, and further improvements are possible by combining available techniques." (Page 16)

Finally, the NHTSA report raises the following issues regarding operational performance of ignition interlock devices:

"Documented evidence is needed regarding the basic operational characteristics of these devices when used in a real world environment. How accurate and reliable are the BAC test devices when placed in people's cars? The effects of subfreezing and roasting temperatures, high humidity, intense vibration and accidental misuse are unknown. Similarly, the maintenance and calibration requirements of the devices are not known at this time." (Page 27)

(D) What process and criteria should the state adopt to certify ignition interlock devices?

The NHTSA report recognizes the difficulties associated with developing certification criteria for ignition interlock devices, and the difficulties for manufacturers of the devices if the criteria vary from state to state:

"Prior to use of the devices, States need to set certification standards and test procedures and to determine which devices meet those standards. The certification standards address such issues as the BAC at which the device interlocks, the accuracy of the devices, operation under various environmental conditions, electrical and vehicle safety, operational features (e.g., vehicle restart within one minute after ignition has been turned off, no more than two or three tests permitted within a 60 minute interval), tampering detection and anti-circumvention capability. The widespread implementation of this technology will be facilitated if the states adopt uniform or at least consistent certification standards." (Page 27)

Beyond the issue of certification of devices is the issue of installation, maintenance, and calibration of the devices. The NHTSA report lists a number of options:

"Responsibility for installing, maintaining and calibrating the devices in persons' vehicles needs to be determined. Options range from a state agency responsible for this activity, to state licensed and certified installers, to unregulated manufacturers' agents or dealers." (Page 27)

(E) Who should bear the responsibility for paying for the installation of ignition interlock devices?

For the most part, states that have laws authorizing the uses of ignition interlock devices require the offender to pay the costs associated with the device. The laws in California, Michigan, and Texas state that the offenders are to pay for the devices. In Oregon, the cost of using the device is paid by the offender unless he or she is indigent; in that case, the state's alcohol program fund pays the costs associated with the device. The law in Washington does not address the issue of who is to pay for the device.

The NHTSA report cites several concerns related to the cost of the devices:

"Concern was expressed regarding the cost of these devices (a one year lease is approximately \$400 - \$500) and who would pay for them (especially in the case of indigent offenders). There is evidence of judicial reluctance to adopt use of a sanction that is not available to everyone regardless of ability to pay. Oregon's new legislation authorizes use of DWI funds to pay for indigent offenders. Other states currently considering legislation are confronting this issue." (Page 23)

For more detailed information, please read the entire NHTSA report.