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Off the Roads & out of the Courts: Enter a Technology Fix for Drunk Driving

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OFF THE ROADS & OUT OF THE COURTS: ENTER A TECHNOLOGY FIX FOR DRUNK DRIVING

NORA J. PASMAN-GREEN*

I. INTRODUCTION - COULD THERE BE A FIX?.....	217
II. HOW BIG IS THE PROBLEM.....	219
III. HOW WELL IS THE FIX WORKING?	225
IV. PROGRESS TOWARD A PERMANENT FIX.....	242
V. A CAUTIONARY TALE.....	247
VI. IN THE MEANTIME	254

I. INTRODUCTION - COULD THERE BE A FIX?

If the statistics are accurate, then like many people in America, I know someone who has been convicted of drunk driving.¹ When this young man (and yes, most convicted drunk driving offenders are men²) was sentenced, a condition of his probation was that he had to install an alcohol ignition interlock device (AIID) on his car. For as long as he was on probation, his car would not start until this machine certified that he had not been drinking. I wished he would be on probation for the rest of his life.

Perhaps I am naïve. AIIDs were news to me. But, once I learned how these devices worked, and how they *will* work in the future, its implications were astounding. AIIDs, it seems, have the potential to virtually eliminate drunk driving liability, both criminal and civil. Even more important, AIIDs could rid the road of drunk drivers who turn their automobiles into deadly weapons. After all, drunk driving is not simply a criminal violation; drunk driving has become a major public health problem. Why, I wondered, isn't this thing *standard equipment* on all vehicles? It turns out that I was way behind the curve on these questions, too.

For years, scholars, scientists, policymakers, and public advocacy groups have been exploring and debating whether AIIDs would effectively prevent someone from driving drunk.³ AIIDs measure blood alcohol content (BAC), which is the underlying scientific evidence of driving impairment.⁴ Indeed, the technology supporting AIIDs has steadily improved. Progress toward a consensus that identifies

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¹ See *infra* notes 18, 30 & accompanying text for specific statistics on drunk driving arrests and convictions.

² Women accounted for 18.8 percent of all DUI arrests in 2007 (a thirty percent increase from the preceding decade). U.S. Dep't of Justice, Federal Bureau of Investigation, *Crime in the United States, 2007, Table 33*, NHTSA.GOV, http://www.fbi.gov/ucr/cius2007/data/table_33.html (last visited Sept. 8, 2011).

³ See *infra* notes 65, 66, 114.

⁴ BAC as evidence of impairment has withstood legal challenges. See *infra* note 42.

and ranks the potential goals that can be achieved with the AIID technology is slowly crystallizing. AIIDs have their found into way into legislation, both nationally and internationally, particularly legislation aimed at repeat offenders. And, installing AIIDs as standard equipment on vehicles has, indeed, been envisioned as the ultimate solution.

But, when asked point-blank whether having an AIID as standard equipment on all cars to prevent *anyone* from driving under the influence, few think this is a good idea. (Except, understandably, my friend whose brother was killed by a drunk driver who entered the interstate through an exit ramp and hurled himself head-on into a car driven by a fifty year-old husband and father of young children.) Most folks react as if the suggestion were the ultimate threat to fundamental freedom. They have the *right* to drink! They have the *right* to drive! But silence reigns when I ask, does anyone, under any circumstances, have the right to drive drunk?

No one in his politically-correct mind would say yes. While Americans have jealously protected their right to drink,⁵ we have long-standing objections to drunk driving. Nonetheless, while we willingly subject ourselves to the “rules of the road,” we believe we have a *right* to drive as long as we obey them.⁶ Would AIIDs be a

⁵ Despite the earnest attempts of the Temperance Movement, the right to drink became constitutionally protected in 1933. U.S. CONST. amend. XVIII, *repealed* by U.S. CONST. amend. XXI. For a full account of the history of the Temperance Movement and the attempts to limit alcohol consumption in America, see David J. Hanson, *National Prohibition of Alcohol in the U.S.*, <http://www2.potsdam.edu/hansondj/controversies/1091124904.html> (last visited July 10, 2010).

⁶ Whether driving is, strictly speaking, a “right” or a “privilege” is a debate that is not particularly helpful in this context. Certainly, most Americans regard the automobile as essential. “[T]he independent mobility provided by an automobile is a crucial, practical necessity; it is undeniable that whether or not a person can obtain a driver’s license or register and operate his motor vehicle profoundly affects important aspects of his day-to-day life.” Victor M. Norris & Michael F. Smith, *Photo Finish: Calling into Question Michigan’s Roadside Driver’s License Confiscation Law*, 74 MICH. B. J. 410, 412 (1995) (quoting *Shavers v. Attorney General*, 402 Mich. 554, 598 (1978)). “American law enveloped the right to drive into an increasingly narrow corner. Although constantly mentioned in the first era of traffic regulation, the right to travel by the vehicle of one’s choice has slowly faded into distant memory and has been lost to history. . . . Since 1950, no court has described driving an automobile as a ‘right.’ The constitutional right to travel became increasingly interpreted not as a right to locomotion by the means of one’s choice, but as a mere right to emigrate between states. . . . Today, traffic bureaus refer to driving a motor vehicle only as a privilege.” Roger Roots, *The Orphaned Right: The Right to Travel by Automobile, 1890-1950*, 30 OKLA. CITY U. L. REV. 245, 266-67 (2005). Nonetheless, courts have stated: “A casual acceptance in the cases that a right to drive in this American society is not ‘fundamental’ lacks both economic and logical application to this present real world. The automobile is of the essence of this country’s functional conduct as a society and is also totally intrinsic to the behavior and aspiration of most Americans, not to mention its foundational place within the national economy. Food might be sacrificed, but never the automobile.” *Johnson v. Wyoming Hearing Examiner’s Office*, 838 P.2d 158, 175 n.12 (Wyo. 1992) (holding unconstitutional a Wyoming statute revoking the driver’s licenses of teenagers convicted of underage drinking). See also *Campbell v. State, Dep’t of Revenue, Div. of Motor Vehicles*, 491 P.2d 1385 (Colo. 1971). Still, as the United States Supreme Court recognized in *Sherbert v. Verner*, 374 U.S. 398, 404 (1962), *overruled by Emp’t Div. Dept. of Human Res. of Ore. v. Smith*, 494 U.S. 872, (1990), the distinction between “privilege” and “right” is not meaningful when the benefit in question, i.e., being able to drive a car and thereby conduct normal life activities, is the same. See also

tolerable infringement of that right in service of the public safety goal of eliminating drunk drivers from our streets? If it were *impossible* for anyone to drive drunk because they simply could not start the car, it could mean that no driver would ever become embroiled in the criminal justice system for drunk driving. It is mind-boggling to imagine how many *other* crimes would be thwarted if no one could drive to the scene to commit it.⁷

Could there come a day when no one who is demonstrably too impaired to drive,⁸ could turn the key in the ignition and drive off? What if people who misjudge their sobriety could no longer drunkenly turn their cars into deadly weapons? What if the daily blood bath on the highways and byways of America finally pulled to a stop?⁹

II. HOW BIG IS THE PROBLEM

In the last thirty years, public intolerance of drunk driving found its voice in a variety of grassroots organizations, most notably, Mothers Against Drunk Driving (MADD).¹⁰ During the early 1980s, concerns about the dangers associated with

Peninna Oren, *Veiled Muslim Women and Driver's License Photos: A Constitutional Analysis*, 13 J.L. & POL'Y 855, 913 (2005).

⁷ Studies of offenders convicted of crimes involving strangers, or committed at locations other than the offender's home, show that nearly a third were severely intoxicated at the time they committed the crime. See United States Department of Justice, Bureau of Justice Statistics, *Alcohol and Crime: An Analysis of National Data on the Prevalence of Alcohol and Involvement in Crime* (1998), available at <http://bjs.ojp.usdoj.gov/content/pub/pdf/ac.pdf> [hereinafter DOJ, *Alcohol and Crime*]. In 1996, for example, the number of persons under correctional supervision who committed a crime after drinking exceeded 1.9 million. *Id.* at 9.

⁸ See *infra* notes 39-41 and accompanying text for discussion of legal standards for impaired driving.

⁹ No street in America is immune from the drunk driver. See generally NHTSA data which demonstrates that alcohol-related fatal crashes occur at any speed, and on all types of streets (e.g., one-way streets, two-way roads, divided highways, interstate freeways). *Fatality Analysis Reporting Trafficway Flow*, NHTSA.GOV, <http://www.nhtsa.gov/FARS> (last visited July 16, 2010).

¹⁰ Mothers Against Drunk Driving was formed in 1980. *History of MADD*, MADD.ORG, <http://www.madd.org/About-Us/About-Us/History.aspx> (last visited Aug. 17, 2010). Numerous groups have been organized in the fight to keep drunk drivers off the roads. See e.g., THE CENTURY COUNCIL, www.centurycouncil.org (last visited Feb. 26, 2011); RADD, *The Entertainment Industry's Voice for Road Safety*, www.radd.org (last visited Feb. 26, 2011); BIKERS AGAINST DRUNK DRIVING (BADD), http://www.baddcentral.com/Page_Main/Main.asp (last visited Feb. 26, 2011); STUDENTS AGAINST DESTRUCTIVE DECISIONS (SADD), www.sadd.org (last visited Feb. 26, 2011); DWI RESOURCE CENTER, INC., www.dwiresourcecenter.org (last visited Feb. 26, 2011); AMERICA CARES, www.drunkdriving.com (last visited Feb. 26, 2011); DWI VICTIMS PANEL, www.dwipanel.org (last visited Feb. 26, 2011); NATIONAL COMMISSION AGAINST DRUNK DRIVING (NCADD), www.ncadd.org (last visited Feb. 26, 2011); DON'T DIE DRUNK, www.dontdiedrunk.org (last visited Feb. 26, 2011); REMOVE INTOXICATED DRIVERS (RID), <http://rid-usa.org/> (last visited Feb. 26, 2011); NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM, www.niaaa.nih.gov (last visited Feb. 26, 2011).

drunk driving entered the political arena.¹¹ Legislators across the country responded by reforming drunk driving laws to mandate stricter enforcement and impose harsher penalties.¹² The National Highway Traffic Safety Administration (NHTSA) has poured millions of dollars into publicity campaigns to heighten public awareness of the dangers of drunk driving.¹³

¹¹ See Joseph R. Gusfield, *The Control of Drinking-Driving in the United States: A Period in Transition?*, in SOCIAL CONTROL OF THE DRINKING DRIVER 109 (Michael D. Laurence, John R. Snortum, & Franklin E. Zimring eds., 1988).

¹² *Id.* See *infra* notes 36, 57-67 and accompanying text.

¹³ Starting in the late 1960s, NHTSA launched its first attempt to address drinking and driving by establishing Alcohol Safety Action Project (ASAP). Congress provided \$88 million to fund the project. National Highway Traffic Safety Administration, *Initiatives to Address Impaired Driving*, 5 (2003), available at <http://www.nhtsa.gov/DOT/NHTSA/Vehicle%20Safety/Studies%20&%20Reports/Associated%20Files/FinalAlcoholIPT-03.pdf> [hereinafter *Initiatives to Address Impaired Driving*]. In 1982, President Ronald Regan formed the Presidential Commission Against Drunk Drivers: “[T]o aid the States in their fight against the epidemic of drunk driving on the Nation’s roads.” Exec. Order No. 12358, 47 Fed. Reg. 16311 (Apr. 14, 1982), available at <http://www.presidency.ucsb.edu/ws/index.php?pid=42395> (last visited Aug. 1, 2010). In 1984, DOT, NHTSA, and other national media organizations launched *Friends Don’t Let Friends Drive Drunk* public service announcement (PSA) campaign, which remains the most recognizable publicity campaign to this day. Top advertising and public agencies in America provided pro bono assistance to design the campaign. In 2002, the campaign received more than \$50 million in donated multimedia ad space. *Initiatives to Address Impaired Driving*, *supra* note 13, at 13. In 1988, Harvard Alcohol Project launched to promote designated drivers. Harvard School of Public Health, *Harvard Alcohol Project*, HARVARD.EDU, <http://www.hsph.harvard.edu/research/chc/harvard-alcohol-project/> (last visited June 27, 2010). In late 1999, Harvard joined forces with the White House and the entertainment industry in a “Designated Driver” media campaign aimed at curbing alcohol-related fatalities during the Millennium New Year’s Eve. The President taped a PSA encouraging the use of Designated Drivers for broadcast on network television between Thanksgiving and New Year’s. The campaign’s message aired on the major broadcast networks and on forty-five national and regional cable networks. In addition, the National Association of Broadcasters distributed the PSA by satellite to all local television stations. U.S. Dep’t of Transp., National Highway Traffic Safety Administration, DOT HS 809 148, *Designated Driver Safe Ride Program*, NHTSA.GOV, <http://www.nhtsa.gov/people/injury/alcohol/DesignatedDriver/med2.html> (last visited Sept. 8, 2011). The Designated Driver Campaign was supported by the AdCouncil, a leading producer of PSAs since 1942. Ad Council, *Drunk Driving Prevention*, ADCOUNCIL.ORG, <http://www.adcouncil.org/default.aspx?id=49> (last visited Aug. 1, 2010). In 2003, NHTSA began its National Impaired Driving High-Visibility Enforcement Campaign, which ran for three years, where fifteen selected states collaborated with NHTSA to plan eighteen days of highly visible law enforcement supported by media advertisements around Labor Day weekend. Thirteen states were originally chosen to participate in the program, and two more states were added in 2005. During the three years of the campaign, each state experienced decreases in alcohol-related fatalities. For the first time, Congress “appropriated funds for national paid media campaign to combat impaired driving.” For all three years, Congress allocated a total of \$39 million for media advertisements with the slogan *You Drink & Drive, You Lose*. U.S. Dep’t of Transp., National Highway Traffic Safety Administration, DOT HS 810 789, *Evaluation of the National Impaired Driving High-Visibility Enforcement Campaign: 2003-2005*, NHTSA.GOV., http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/YDYDYL_2001-05.pdf (last visited Sept. 8, 2011). In 2006, NHTSA replaced *You Drink & Drive, You Lose* with another highly visible law

Initially, these measures seemed to deter drunk driving because the number of arrests decreased by about twenty-eight percent during the late 1980s and early 1990s.¹⁴ Fewer arrests suggested that less people were driving drunk, increasing the safety of roads.

Any initial, modest reductions in alcohol-related crashes, arrests, and convictions during the 1980s did not continue. Despite harsher statutory penalties,¹⁵ more comprehensive treatment opportunities and obligations for offenders,¹⁶ and ongoing public awareness efforts,¹⁷ the sobering evidence is that drunk driving remains

enforcement campaign to deter drunk driving: *Drunk Driving. Over the Limit. Under Arrest.* U.S. Dep't of Transp., National Highway Traffic Safety Administration, DOT HS 810 643, *Grassroots Support for Impaired-Driving Law Enforcement Crackdown Efforts*, NHTSA.GOV, <http://www.nhtsa.gov/people/injury/alcohol/GrassRootsEfforts/> (last visited Sept. 8, 2011). The campaign is still active today. On August 16, 2010, NHTSA unveiled its new slogan titled "Drunk Driving: Over the Limit. Under Arrest." to replace the "You Drink & Drive. You Lose" Campaign. NHTSA committed \$11 million in paid-national advertising to "help put everyone on notice that if they are caught driving impaired, they will be arrested." U.S. Dep't of Transp., National Highway Traffic Safety Administration, *NHTSA: High Visibility Enforcement (HVE) Planner*, NHTSA.GOV, <http://www.stopimpaireddriving.org/planners/HVEPlanner/planner/index.cfm> (last visited Aug. 24, 2010). The new slogan was developed in consultation with the American Beverage Institute (ABI). ABI is a restaurant trade association "dedicated to protecting the on-premise dining experience — which often includes the responsible consumption of adult beverages." AMERICAN BEVERAGE INSTITUTE, <http://www.abionline.org/> (last visited Aug. 1, 2010). ABI objected to the previous slogan because it did not distinguish between drunk driving and drinking responsibly. "The new slogan recognizes the legitimacy of the 40 million adults who drink responsibly and legally prior to driving." *New Drunk Driving Campaign – Over the Limit. Under Arrest.*, DUI.COM, <http://www.dui.com/dui-library/prevention/new-national-drunk-driving-campaign> (last visited Sept. 19, 2010).

¹⁴ Andrew Fulkerson, *The IIS: An Evidentiary Tool Becomes a Sentencing Element*, CT. REV.: J. OF THE AM. JUDGES ASSN., Winter 2003, at 18, 18.

¹⁵ See *infra* notes 36, 57-67 and accompanying text.

¹⁶ See *infra* notes 36, 57-67 and accompanying text.

¹⁷ Isolating the effects of mass media campaigns can be difficult. Mass media campaigns to prevent alcohol-impaired driving are typically carried out in conjunction with other programs and policies that have the same goals. Still, a Centers for Disease Control (CDC) systematic review of the research literature revealed that, under certain conditions, mass media campaigns are effective in preventing alcohol-impaired driving. *Motor Vehicle Safety: Mass Media Campaigns Are Effective in Preventing Impaired Driving*, CENTERS FOR DISEASE CONTROL AND PREVENTION, http://www.cdc.gov/MotorVehicleSafety/Impaired_Driving/massmedia.html (last visited Aug. 1, 2010). See generally S. Ditter et. al., *Effectiveness of Designated Driver Programs for Reducing Alcohol-Impaired Driving: A Systematic Review*, 28 AM. J. PREV. MED. 280 (2005), available at <http://www.thecommunityguide.org/mvoi/mvoi-AJPM-evrev-d-driver.pdf>. There is a fair argument that public awareness campaigns are simply drowned out by overall alcohol advertising. "Responsibility ads," which discourage drinking and driving and underage drinking and promote drinking responsibility, are alcohol industry-supported. But, the statistics are telling. From 2001 to 2005, 1,415,716 alcohol product advertisements aired on US television, as compared with 41,333 "responsibility" advertisements. Alcohol companies spent \$4.9 billion on television advertising of which 2.1 percent (\$104 million) was on responsibility advertisements. Of the 109 alcohol companies advertising on television from 2001 to 2005, eight companies aired responsibility advertising; only six companies aired

largely undeterred. In 2008, there were 1,483,396 arrests for driving under the influence.¹⁸ Arrest and conviction statistics do not tell the whole story: Studies demonstrate that when a first-time offender is arrested he or she, on average, has driven eighty-seven (87) other times while over the legal limit.¹⁹ Research finds up to seventy-five percent of offenders drive illegally after license suspension.²⁰

In 2008, thirty-one percent of the nation's fatal crashes²¹ involved alcohol-impaired driving.²² In total, 11,773 people were killed in these alcohol-impaired-driving crashes.²³ An additional 255,500 are injured in motor vehicle crashes

responsibility ads in 2005. *Contra Drowned Out Alcohol Industry Responsibility Advertising on Television 2001 to 2005*, THE CENTER ON ALCOHOL MARKETING AND YOUTH, http://www.camy.org/research/Drowned_Out_Alcohol_Industry_Responsibility_Advertising_on_Television_2001_2005/index.html (last visited Aug. 2, 2010).

¹⁸ U.S. Dep't of Justice, Federal Bureau of Investigation, *Crime in the United States, 2008*, Table 29, September 2009, http://www.fbi.gov/ucr/cius2008/data/table_29.html (last visited Feb. 27, 2011). Follow-up data of conviction rates is much more difficult to identify. See U.S. Dep't of Transp., National Highway Traffic Safety Association, DOT HS 808 970, *Examination of Conviction Rate Procedures, Final Report*, NHTSA.GOV, <http://www.nhtsa.gov/people/injury/research/dwiconviction/dwiconvictions.htm> (last visited Sept. 8, 2011).

¹⁹ Janet Dewey-Kollen & Angela Downes, *Shattering the Misconception About First-Time Drunk Driving Offenders*, 42 PROSECUTOR: J. NAT'L DISTRICT ATT'YS ASSN. 14. A recent study by the Centers for Disease Control found that from 2001-2003, 190 million interviewed drivers reported that they had driven while alcohol-impaired, while 290 million passengers reported having ridden with an intoxicated driver. *Motor Vehicle Safety: Impaired Driving*, CENTERS FOR DISEASE CONTROL AND PREVENTION, http://www.cdc.gov/MotorVehicleSafety/Impaired_Driving/impaired-drv_factsheet.html (last visited Aug. 2, 2010) citing R.A. Shults et. al., *Driver- and Passenger-based Estimates of Alcohol-Impaired Driving in the U.S., 2001-2003*, 36 AM. J. PREV. MED. 515 (2009).

²⁰ U.S. Dep't of Transp., National Highway Traffic Safety Administration, DOT HS 811 246, *Ignition Interlocks – What You Need to Know: A Toolkit for Policymakers, Highway Safety Professionals, and Advocates*, NHTSA.GOV, http://www.nhtsa.gov/staticfiles/nti/impaired_driving/pdf/811246.pdf (last visited Sept. 8, 2011) [hereinafter DOT HS 811 246].

²¹ National Highway Traffic Safety Administration, *Fatality Analysis Reporting, Fatal Crashes and Percent Alcohol-Impaired Driving, by Time of Day and Crash Type – state: USA, Year: 2009*, <http://www-fars.nhtsa.dot.gov/Crashes/CrashesAlcohol.aspx> (last visited July 16, 2010).

²² Alcohol-impaired driving means that at least of one of the motor-vehicle operators had a BAC of .08 or higher. U.S. Dep't of Transp., National Highway Traffic Safety Administration, DOT HS 811 155, *Traffic Safety Facts 2008 Data*, NHTSA.GOV, <http://www-nrd.nhtsa.dot.gov/Pubs/811155.pdf> (last visited Sept. 8, 2011) [hereinafter DOT HS 811 155].

²³ U.S. Dep't of Transp., National Highway Traffic Safety Administration, DOT HS 811 155, *Traffic Safety Facts 2008 Data*, NHTSA.GOV, <http://www-nrd.nhtsa.dot.gov/Pubs/811155.pdf> (last visited Sept. 8, 2011) [hereinafter DOT HS 811 155]. This represented a ten percent decrease from 2007 in which alcohol-impaired driving crashes killed 13,041. *Id.* In 2000, alcohol-involved crashes resulted in 16,792 fatalities and 513,000 nonfatal injuries. U.S. Dep't of Transp., National Highway Traffic Safety Administration, DOT HS 809 446, *The Economic Impact of Motor Vehicle Crashes 2000*, NHTSA.GOV, <http://www.nhtsa.gov/DOT/NHTSA/Communi>

involving an alcohol-impaired driver.²⁴ On average, a drunk driver kills someone every forty-five minutes.²⁵ If this trend continues, studies indicate that thirty percent of all Americans will be involved in an alcohol-related car accident during their lifetime.²⁶

Not only does drunk driving endanger Americans' lives and well being, but alcohol-related crashes cost the country over \$51 billion dollars annually.²⁷ This represents over twenty-two percent of *all* crash costs in this country.²⁸ Crash figures do not tell the whole story, of course. Many drunk drivers do not cause crashes, but the law enforcement and judicial systems suffer substantial economic hemorrhaging nonetheless. The police time consumed in drunk driving stops and arrests is not included, for example. On average, the costs to arrest, prosecute, and convict an offender exceed \$50,000.²⁹ But, the costs don't stop there. Most convicted offenders are placed on probation.³⁰ Each year, offenders placed on probation end

ation%20&%20Consumer%20Information/Articles/Associated%20Files/EconomicImpact2000.pdf (last visited Sept. 8, 2011) [hereinafter DOT HS 809 446].

²⁴ Public Health Law Research, *Ignition Interlock Laws for Convicted Drunk Drivers*, PUBLICHEALTHLAWRESEARCH.ORG, <http://www.publichealthlawresearch.org/public-health-topics/injury-prevention/accidents-involving-alcohol/evidence-brief/ignition-interlock> (last visited Aug. 2, 2010).

²⁵ *Statistics*, MADD.ORG, <http://www.madd.org/statistics/> (last visited July 16, 2010).

²⁶ Dewey-Kollen & Donwes, *supra* note 19, at 16.

²⁷ This figure accounts for twenty-two percent of all crash costs. It includes "productivity losses, property damage, medical costs, rehabilitation costs, travel delay, legal and court costs, emergency services (such as medical, police, and fire services), insurance administration costs, and costs to employers. Values for more intangible consequences such as physical pain or lost quality of life are not included in this estimate . . ." DOT HS 809 446, *supra* note 23, 1-2. What is *not* included in this figure is the impact alcohol-related accidents have on emergency rooms. A recent study disclosed that "drivers in motor vehicle crashes who were discharged from the emergency departments had total charges and lengths of stay that were substantially higher (by \$4,538 and 3.3 hours) when there was evidence of alcohol involvement." Michael H. Lee et. al., *Emergency Department Charges for Evaluating Minimally Injured Alcohol-Impaired Drivers*, 54 ANNALS OF EMERGENCY MED. 593, 597 (2009).

²⁸ The impact of alcohol involvement increases with injury severity. Alcohol-involved crashes accounted for ten percent of property damage only (PDO) crash costs, twenty-one percent of nonfatal injury crash costs; and forty-six percent of fatal injury crash costs. DOT HS 809 446, *supra* note 23, at 9.

²⁹ U.S. Dep't of Transp., National Highway Traffic Safety Administration, DOT HS 811 262, *Key Features for Ignition Interlock Programs*, NHTSA.GOV, http://www.nhtsa.gov/staticfiles/nti/impaired_driving/pdf/811262.pdf (last visited Sept. 8, 2011) [hereinafter DOT HS 811 262].

³⁰ In 1997, an estimated 513,200 drunk driving offenders were under correctional supervision, double the number from a decade earlier. Convicted offenders in jail were sentenced to serve on average eleven months; half were sentenced to at least six months. Offenders sentenced to prison served on average forty-nine months; half were sentenced to serve at least three years. Among those on probation, the average sentence length was twenty-six months; half were sentenced to serve two years or more. Among those on probation, thirty-one percent received a split sentence and were incarcerated for a period for their current

up costing more than \$1.6 billion.³¹ Overall, the penal system is overloaded. “Corrections” has been one of the fastest growing consumers of state budgets.³²

Consider, too, what happens to the life of the offender, quite apart from the effect of drunk driving on the criminal justice system, the people injured and/or the property damaged in a drunk driving incident. A drunk driving arrest has irrevocably tarnished many a reputation.³³ From arrest to completion of probation, the experience is humiliating and costly. Drunk driving convictions often leave the offender in financial ruin, over and above the fines and restitution an offender may

drunk driving offense. An estimated twenty-nine percent had served time in a local jail, and two percent in a State prison. Laura M. Maruschak, *DWI Offenders under Correctional Supervision*, BJS.OJP.USDOJ.GOV, <http://bjs.ojp.usdoj.gov/content/pub/pdf/dwiocs.pdf> (last visited Sept. 8, 2011) [hereinafter DOJ, Marsuchak]. For example, in 1997, almost nine in ten (eighty-nine percent) convicted offenders were on probation. Karen L. Dunlap et. al., *Guidelines for Community Supervision of DWI Offenders*, APPA-NET.ORG, http://www.appa-net.org/eweb/docs/appa_pubs/DWI.pdf (last visited Sept. 8, 2011). Nationally, of the more than four million offenders placed on probation, fifteen percent had been sentenced for driving while impaired or intoxicated. *Id.* According to a Traffic Injury Research Foundation (TIRF) report, “Officers . . . report that their average caseload consists of 112 offenders, including 55 for drunk driving offenses, [and] some officers . . . reported caseloads of up to 1,300 offenders.” *Id.* at 9.

³¹ The average daily cost for managing an offender in the community is \$3.42 per day. Pew Center on the States, *One in 31: The Long Reach of American Corrections*, PEWCENTERONTHESATES.ORG, http://www.pewcenteronthestates.org/uploadedFiles/PSPP_1in31_report_FINAL_WEB_3-26-09.pdf (last visited Sept. 8, 2011) [hereinafter Pew Center on the States]. The average cost/year (\$3.42/day x 26 months) times the number of drunk driving offenders sentenced to probation (600,000, or 15% of 4 million) = \$1.6 billion (approximately). *Id.*

³² “[O]ver the past two decades, its growth as a share of state expenditures has been second only to Medicaid. State corrections costs now top \$50 billion annually and consume one in every 15 discretionary dollars.” Pew Center on the States, *supra* note 31, at 1.

³³ Numerous celebrities, athletes, politicians, and the like have been arrested for drunk driving: Nicole Richie, Paris Hilton, Mel Gibson, Tracy Morgan, Mike Tyson, Khloe Kardashian, Kareem McKenzie (New York Giants), Keifer Sutherland, Heather Locklear, Lionel James (San Diego Chargers), Jim Leyritz (former New York Yankee), Jon Peters (producer), Jason Shirley (Cincinnati Bengals), Jerry Cash (former Quest CEO), Bob Solarski (WEAR-TV news anchor), Mike Brasfield (Jefferson County, Washington sheriff), Lindsay Lohan, Joba Chamberlain (Yankees), Matthew McCoy (Tampa Bay Buccaneers), Lawyer Milloy (Atlanta Falcons), Elliott Rothman (Pomona City, California City Councilman), Brandon Marshall (Denver Broncos), Shia La Boeuf (actor), Bill Brennan (press secretary for Hawaii Mayor Mufi Hanneman), Eugene Maysky (Mayor of a Pennsylvania town), Cynthia Busch (wife of Maryland House Speaker), Mischa Barton, Bob Biggins (Illinois State Representative), Lofa Tatupu (Seattle Seahawks), Jerry Stevens (Tampa Bay Buccaneers), Randy Scott (South Carolina State Senator), Carmelo Anthony (Denver Nuggets), Cedric Benson (Chicago Bears), Ron Menor (Hawaii State Senator), Judge Sheila McGinnis (Cook County, Chicago), Vito Fossella (New York Congressman), Nick Hogan (Hulk Hogan’s son), Richie Sambora (Bon Jovi), Randy Scott (Wisconsin State Senator), Chad Kroger (Nickleback), Tommy Roberston (Former Mississippi State Senator), Sidney Blumenthal (Clinton advisor), John Trebilcock (Oklahoma State Representative), Bobby Rodriguez (California Deputy Parole Commissioner), and the list continues. *Celebrity DUI Spotlight on New Drunk Driving Charges at Total DUI*, TOTAL DUI, <http://www.totaldui.com/news/celebrity-dui-spotlight/default.aspx> (last visited Oct. 1, 2010).

be obligated to pay. If the offender's driver's license is not suspended, the cost of automobile insurance is staggering.³⁴ If the conviction results in license suspension, the offender's employment potential is unquestionably diminished.³⁵ The increased criminalization of drunk driving laws has stigmatized many otherwise upstanding citizens with all the trappings of a criminal conviction. Their lost productivity is incalculable.

III. HOW WELL IS THE FIX WORKING?

By the late 1990s, and well into this decade, at the state and national level, legislation upped the ante with increasingly harsh penalties for drunk driving offenses, particularly for repeat offenders.³⁶ These efforts include provisions requiring AIID installation in offenders' vehicles.

³⁴ According to DUI.com, insurance-rate increases are the highest costs associated with DUIs. If the carrier does not "drop" the drunk driver's policy, the provider will designate the policy as "high risk," which can dramatically increase rates, sometimes as much as 400 percent. For example, Research for the Automobile Club of Southern California estimated that first-time offenders face a total cost of \$12,116 as a result of a drunk driving conviction. Of that total, \$7,300 was attributed to increase in auto insurance. *DUI Car Insurance – SR-22 Auto Insurance for DWI/DUI Drivers*, DUI.COM, <http://www.dui.com/dui-car-insurance> (last visited Oct. 1, 2010). Most state departments of motor vehicles (DMVs) require an offender to secure an SR-22 document which certifies high risk insurance coverage. (Delaware, Kentucky, Minnesota, New Mexico, New York, North Carolina, Oklahoma, and Pennsylvania are the only states which do not require SR-22). *Do All States Require a SR 22?*, DMVANSWERS.COM, <http://dmvanswers.com/questions/3918/Do-all-states-require-a-SR-22> (last visited Oct. 14, 2010). The insurance company must notify DMVs any time the policy is canceled, terminated, or lapses. SR-22 coverage is usually required for a period of three years or longer. For example, in Alaska, lifetime coverage is required for a fourth offense. ALASKA STAT. § 28.20.230 (2010).

³⁵ Studies indicate that employers are reluctant to hire employees with criminal records. For example, sixty percent of employers surveyed indicated that they were not willing to consider hiring someone who has spent time in jail. In addition, a spell of incarceration can reduce earning potential by ten to thirty percent. Harry J. Holzer, Steven Raphael & Michael A. Stoll, *Employment Barriers Facing Ex-Offenders* (Ctr. for the Study of Urban Poverty, Working Paper, 2003). DUI offenders account for about nine percent of prison and jail populations. See also, DOJ, Marsuchak, *supra* note 30, at 1.

³⁶ See, the following states' drunk driving laws: Connecticut (C.G.S.A. § 14-227(a)(West 2010), amended by 2010 Conn. Legis. Serv. P.A. 10-110 (S.B. 414)(West 2010)); Massachusetts (M.G.L.A. 90 § 24 (West 2006), M.C.L.A. 257.625 (2010)); and Vermont (23 V.S.A. § 1206 (West 2010)). These four states require that the offender complete alcohol assessment and treatment programs, participate community service, and pay fines. Fines range from \$100 to \$1,000 for first offenses, \$200 to \$10,000 for second offenses, and \$500 to \$15,000 for third offenses. Massachusetts imposes harsher fines for fourth and fifth violations. Massachusetts considers all convictions obtained during the offender's lifetime rather than obtained within a limited time period, like seven to ten years. These fines can range from \$15,000 to \$50,000. In addition, in these four states, jail time may be imposed for offenses, and licenses will be suspended. Connecticut permanently revokes an offender's license after a third offense within ten years. Similarly, Massachusetts and Vermont permanently revokes an offender's license after a fifth and third violation, respectively, obtained during the offender's life. See generally, *State Ignition Interlock Laws*, NATIONAL CONFERENCE OF STATE LEGISLATURES, <http://www.ncsl.org/default.aspx?tabid=13558> (last updated Jan. 2011).

AIIDs usually employ a handheld breath-testing device wired to a control unit under the dash.³⁷ To start the car, the driver must provide a breath sample into the handheld device to determine whether the driver's BAC is below a preset value.³⁸ The breath-testing device measures the person's breath alcohol concentration (BrAC) to determine the BAC level.³⁹ Evidence shows that a person's driving ability can be impaired with a BAC as low as .02 percent, but all data establishes that everyone's driving ability is seriously impaired with a BAC of .10 percent.⁴⁰

³⁷ Fulkerson, *supra* note 14, at 19.

³⁸ Susan A. Ferguson, Eric Traube, Abdullatif Zaouk & Robert Strassburge, Driver Alcohol Detection System for Safety (DADSS) – A Non-Regulatory Approach in the Development and Deployment of Vehicle Safety Technology to Reduce Alcohol-Impaired Driving, 3, (2009) DRIVER ALCOHOL DETECTION SYSTEM FOR SAFETY, http://www.dadss.org/sites/default/files/ESV_DADSS_PAPER_final.pdf.

³⁹ Gregory T. Neugebauer, *Alcohol Ignition Interlocks: Magic Bullet or Poison Pill?*, 2 U. PITT. J. TECH. L. POL'Y 2, 2 (2002).

⁴⁰ Effects of BAC on the Body and Performance:

BAC	Effects on the Body
0.1 - 0.5	Increase in heart and respiration rates Decrease in various brain centre functions Inconsistent effects on behavioral task performances Decrease in judgment and inhibitions Mild sense of elation, relaxation, and pleasure
0.5 - 1.0	Physiological sedation of nearly all systems Decreased attention and alertness, slowed reactions, impaired coordination, and reduced muscle strength Reduced ability to make rational decisions or exercise good judgment Increase in anxiety and depression Decrease in patience
1.0 - 1.5	Dramatic slowing of reactions Impairment of balance and movement Impairment of some visual functions Slurred speech Vomiting, especially if BAC is reached rapidly
1.6 - 2.9	Severe sensory impairment, including reduced awareness of external stimulation Severe motor impairment, e.g. frequently staggering or falling

Consequently, all fifty states have set .08 as the BAC level necessary to sustain a drunk driving conviction.⁴¹

The vast majority of cases have upheld the BAC standard as an accurate measure of impairment.⁴² The same has been true for the breathalyzer test. As early as 1971,

3.0 - 3.9	Non-responsive stupor Loss of consciousness Anesthesia comparable to that for surgery Death (for many)							
≥4.0	Unconsciousness Cessation of breathing Death, usually due to respiratory failure							
European Transport Safety Council (ETSC), <i>Drink Driving in Commercial Transport</i> , 7 (2010), available at http://www.etsc.eu/documents/DrinkDriving%20in%20CommercialTransport%20ETSC.pdf . BAC Table (for Men)								
	Body Weight in Pounds							
Drinks	100	120	140	160	180	200	220	240
0	.00	.00	.00	.00	.00	.00	.00	.00
1	.04	.03	.03	.02	.02	.02	.02	.02
2	.08	.06	.05	.05	.04	.04	.03	.03
3	.11	.09	.08	.07	.06	.06	.05	.05
4	.15	.12	.11	.09	.08	.08	.07	.06
5	.19	.16	.13	.12	.11	.09	.09	.08
6	.23	.19	.16	.14	.13	.11	.10	.09
7	.26	.22	.19	.16	.15	.13	.12	.11
8	.30	.25	.21	.19	.17	.15	.14	.13
9	.34	.28	.24	.21	.19	.17	.15	.14
10	.38	.31	.27	.23	.21	.19	.17	.16
Subtract .01% for each 40 minutes of drinking.								
1 drink = 1.25 oz. 80 proof liquor, 12 oz. beer, or 5 oz. wine								

Students: Alcohol's Effect – Estimating Your BAC, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY, <http://www.alcohol.vt.edu/Students/alcoholEffects/estimatingBAC/index.htm> (last visited Aug. 25, 2010).

⁴¹ See U.S. Department of Transportation, National Highway Traffic Safety Administration, DOT HS 810 827, *Digest of Impaired Driving and Selected Beverage Control Laws* (2007), available at <http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/HS810827.pdf>.

the reliability of breathalyzers was well accepted by courts.⁴³ Today, some courts even excuse the prosecution from laying the foundation for the admissibility of the test because admissibility has been pre-determined by statute.⁴⁴ Still, defendants challenge breathalyzers in many drunk driving cases.⁴⁵ However, as long as the prosecutor can demonstrate that the machine measured up to industry standards,⁴⁶

⁴² See, e.g., *State v. Lasworth*, 42 P.3d 844, 847 (N.M. Ct. App. 2001) (“BAC provides an objective and reliable measure that states have recognized as presumptive and/or per se evidence of impairment, depending on the statute.”).

⁴³ See, e.g., *People v. Donaldson*, 36 A.D.2d 37, 39-40 (N.Y. App. Div. 1971) (holding that the prosecution did not have to present expert testimony to establish the reliability of the breathalyzer test: “In approaching the question of the admissibility of the results of the chemical test we examine the history and experience of its use as well as its methodology and manner of operation. The Breathalyzer has been in public use since 1954 and has been widely accepted and adopted by law enforcement agencies for use in testing blood-alcohol content. It operates on the firmly established principle that at normal body temperature the concentration of alcohol in the blood circulating through the lungs is 2100 times greater than in the air discharged from the lungs. The apparatus is a semi-automatic analyzer designed to test a blood-alcohol percentage present in any breath sample. Scientifically, the Breathalyzer wastes all but the last portion of a long exhalation, trapping a measured volume which is then forced through a reagent and is ultimately photometrically measured resulting in a calculated reading of the subject’s blood-alcohol percentage. Studies have shown that this device is considered to be ‘fail safe’ and that as a general rule its readings are slightly lower than those obtained in a corresponding blood test; and any slight error caused either by mechanical defect or operator fault will usually produce lower rather than higher readings.” (citations omitted).

⁴⁴ See, e.g., *Regan v. State*, 590 N.E.2d 640, 645 (Ind. Ct. App. 1992) (holding that the rebuttable presumption for the reliability of a properly administered breathalyzer test created by Indiana state law did not violate the defendant’s constitutional rights); *State v. Vega*, 465 N.E.2d 1303, 1305 (Ohio 1984) (“an accused is not denied his constitutional right to present a defense nor is the state relieved of its burden of proving guilt beyond a reasonable doubt where a trial judge does not permit expert testimony to attack the reliability of intoxilyzers in general.”); *McGough v. Slaughter*, 395 So.2d 972, 975 (Ala. 1981) (“The legislature has by statute remedied many of the problems involved in laying a foundation for admission of intoxication test results . . . A party offering results from tests shown to be given in conformity with the statute is relieved of the burden of laying the extensive predicate generally necessary for admission of scientific test results.”); see Leonard R. Stamm, *Part One: Essential Cases to Know in Handling Challenges to Scientific Evidence*, 27 CHAMP 48, 50 (2003).

⁴⁵ See PATRICK T. BARONE, *DEFENDING DRINKING DRIVERS* §§ 200-260 (2009).

⁴⁶ Breathalyzer machines which are used by police require NHTSA approval. NHTSA has approved the following manufacturers and breathalyzer devices for law enforcement use:

1. Alcohol Countermeasure Systems Corp.: Alert J3AD, Alert J4X.ec, and PBA3000C
2. BAC Systems, Inc.: Breath Analysis Computer
3. CAMEC, Ltd.: IR Breath Analyzer
4. CMI, Inc.: Intoxilyzer Model (26 variations)
5. Draeger Safety, Inc.: Alcotest Model (8 variations), Breathalyzer Model (5 variations)
6. Gall’s Inc.: Alcohol Detection System – A.D.S. 500
7. Guth Laboratories, Inc.: Alcotector BAC-100, Alcotector C2H5OH

and that the operator was qualified, challenges are generally unsuccessful.⁴⁷ In addition, in *Schmerber v. California*, the United States Supreme Court rejected Fifth

8. IntoXimeters, Inc.: Photo Electric Intoximeter, GG IntoXimeter MK II, GC IntoXimeter IV, Auto IntoXimeter, IntoXimeter Model (8 variations), Alcomonitor, Alcomonitor CC, Alco-Sensor III, Alco-Sensor Enhanced, Alco-Sensor IV, Alco-Sensor IV-XL, Alco-Sensor AZ, Alco-Sensor FST, RBT-AZ, RBT III, RBT III-A, RBT IV, RBT IV with CEM, IntoX EC/IR, IntoX EC/IR II, Portable IntoX EC/IR
9. Komyo Kitagawa: Alcoalyzer DPA-2, Breath Alcohol Meter PAM 101B
10. Lifeloc Technologies, Inc.: PBA 3000B, PBA 3000-P, PBA 3000C, Alcohol Data Sensor, Phoenix, EV 30, FC 10, FC 20
11. Lion Laboratories, Ltd.: Alcolmeter Model (4 variations), Intoxilyzer Model (5 variations)
12. Luckey Laboratories: Alco-Analyzer Model (2 variations)
13. National Draeger, Inc.: Alcotest Model (6 variations), Breathalyzer Model (5 variations)
14. National Patent Analytical System, Inc.: BAC DataMaster, BAC Verifier DataMaster, DataMaster cdm
15. Omicron Systems: Intoxilyzer Model (2 variations)
16. Plus 4 Engineering: 5000 Plus4
17. Seres: Alco Master, Alcopro
18. Siemens-Allis: Alcomat, Alcomat F
19. Smith and Wesson Electronics: Breathalyzer Model (4 variations), 2000 (non-Humidity Sensor)
20. Sound-Off, Inc.: AlcoData, Seres Alco Master, Seres Alcopro
21. Stephenson Corp.: Breathalyzer 900
22. U.S. Alcohol Testing, Inc./Protection Devices, Inc.: Alco-Analyzer 1000, Alco-Analyzer2000, Alco-Analyzer 2100
23. Verax Systems, Inc.: BAC Verifier, BAC Verifier Datamaster, BAC Verifier Datamaster II

Model Specifications for Devices to Measure Breath Alcohol, 71 Fed. Reg. 37159-01, 42237-42239 (June 29, 2006).

⁴⁷ Prosecutors only need to produce evidence showing that (1) the test was performed according to the state guidelines, (2) that the operator was properly certified, (3) the test was approved by prevailing law, (4) the machine was tested regularly for accuracy and was in proper working condition when the test was performed, (5) the motorist had been observed for a proscribed amount of time, and during this time the alleged offender did not smoke, vomit, or consume any other alcoholic beverages, (6) proper operation procedures were followed, and (7) the results of the test were properly processed. *See, e.g.* *State v. Sensing*, 843 S.W.2d 412, 416 (Tenn. 1992); *Moore v. State*, 442 So.2d 164, 167 (Ala. Cr. App. 1983) (The court held that the intoxication test was inadmissible because “[t]he test was not shown to be performed in conformity with the requirements of the statute.” In addition, among other things, the prosecution failed to establish that “the intoximeter test was administered by a qualified individual who could properly conduct the test and interpret the results” and that “the instrument used in conducting the test was in good working condition and the test was

Amendment challenges against self-incrimination for to the admissibility of intoxication tests.⁴⁸ The Supreme Court also held that the tests do not violate the Fourth Amendment for being unreasonable searches or seizures.⁴⁹

Beyond the use of breath-testing devices to determine intoxication levels during a traffic stop or arrest, the option of requiring offenders to install AIIDs on their vehicles to prevent further drunk driving has also been available since the 1970s.⁵⁰ Earlier alcohol sensing technology proved unreliable or inaccurate;⁵¹ however, current technology using an electrochemical sensor (also called fuel-cell sensor) has

conducted in such a manner as to secure accurate results.”). However, noncompliance with statute standards may only address the weight of the intoxication test, rather than rendering it inadmissible. *See, e.g.,* *People v. Adams*, 59 Cal.App.3d 559, 567 (Ct. App. 1976) (“[N]oncompliance goes merely to the weight of the evidence. The regulations are an expressed standard for competency of the test results; in effect, they are a simplified method of admitting the results into evidence. Were the rule to provide that the evidence of the test results would be inadmissible if the regulation were not followed there would be the incentive to turn the drunk driving case into a contest to find a technical defect in the test procedure so as to have the evidence excluded. Under the present rule, if the test procedure does not comply with the regulations, a defendant is protected, as the prosecution then must qualify the personnel involved in the test, the accuracy of the equipment used, and the reliability of the method followed before the results can be admitted. In the present case, as the regulations were not followed, appellants were entitled to attempt to discredit the results by showing that noncompliance affected their validity; indeed, the court instructed that any such noncompliance could be considered by the jury in evaluating the test evidence.”).

⁴⁸ *Schmerber v. California*, 384 U.S. 757, 761 (1966) (The Court held that the removal of a blood sample from the defendant by a physician over the defendant’s objection did constitute compulsion. However, the objected removal of blood did not violate the Fifth Amendment because it did not amount to testimony against himself: “We hold that the privilege protects an accused only from being compelled to testify against himself, or otherwise provide the State with evidence of testimonial or communicative nature, and that the withdrawal of blood and use of the analysis in question in this case did not involve compulsion to these ends.”)

⁴⁹ *Id.* at 770-71. (Absent an emergency, search warrants would typically be required for intrusions into the body. However, threatened “destruction of evidence” gives rise to an emergency situation in the case of drunk driving. The Court reasoned that because “the percentage of alcohol in the blood begins to diminish shortly after drinking stops,” law enforcement need not secure a warrant before attempting to acquire evidence of the accused’s BAC.)

⁵⁰ Fulkerson, *supra* note 14, at 19.

⁵¹ Older devices detect alcohol using the semiconductor sensing method. For semiconductor sensing, when alcohol is present in the breath, the electrical conductivity increases proportionally to the alcohol concentration in the breath. Although considered relatively durable and economic, older devices have higher operational costs because they require frequent calibration and servicing. More problematic, the semiconductor sensing method is not alcohol specific. False positive results occur even though an individual has not consumed alcohol. Some sensors will respond to hydrocarbons including vehicle exhaust and even cigarette smoke. Douglas J. Beirness, *Best Practices for Alcohol Interlock Programs*, 8, Proceedings of the First International Symposium on AIIDs, Montreal, 2000, Ottawa: Traffic Injury Research Foundation (2001), available at http://tirf.ca/publications/PDF_publications/BestPracticesReport.pdf [hereinafter Beirness (2000)].

proven to be much more dependable.⁵² AIIDs now prevent driver circumvention⁵³ and have reduced costs.⁵⁴ As one author points out, “[M]any practitioners believe that AIIDs are expensive and not affordable for many offenders when in fact these devices only cost about \$3-4 (USD) per day or about the cost of a drink.”⁵⁵ To be sure, on an annual basis, AIID operating costs add up to a considerable amount. Compared with the cost of high-risk automobile insurance,⁵⁶ however, the costs are negligible.

Federal legislation fueled the eagerness to improve breath-testing devices. In 1998, Congress enacted the Transportation Equity Act for the 21st Century (TEA-21).⁵⁷ Under § 164 of the Act, a state may elect to either transfer 1.5 percent of its highway construction funds to highway safety programs or to enact a federally

⁵² The electrochemical method detects alcohol by converting alcohol and oxygen into an electrical current in order to measure the individual’s BAC. The electrochemical method requires less calibration than earlier versions and is alcohol specific. These two factors significantly reduce the risk of false positives, which causes the device to prohibit a sober person from starting the vehicle. *Id.* at 8-9.

⁵³ Circumvention refers to “any attempt to disable, disconnect or bypass the interlock to allow the intended driver to start the vehicle without providing a natural, unfiltered breath sample.” *Id.* at 10. Earlier AIIDs were easy to circumvent. A study from 1990 revealed that almost half of the installed AIIDs had been bypassed at some point. *Id.* at 21. *See infra* notes 77-79 and accompanying text.

⁵⁴ Beirness (2000), *supra* note 51, at 31. Generally, the offender must pay for the installation of an AIID, which runs between \$100 and \$250, and then pay monthly costs (including installation insurance and basic fees) between \$65 and \$90. Cost variations can be attributed to factors such as program size (economies can often be achieved with larger scale programs), geographic areas to be covered, or even competition between vendors. Many States have taken steps to address concerns that the cost of interlock sanctions acts as a barrier to offender implementation. About twenty States have devised ways to offset costs for indigent offenders. Interlock indigent funds operate in many States. Some are set up with fees from other offenders; other States provide funds through arrangements with interlock providers. A few States impose additional monitoring fees on offenders to offset increased administrative costs, while some experts suggest using revenues from alcohol taxes or insurance surcharges to fund interlock programs. “Research estimates of interlock benefit/cost suggest a \$3 benefit for first-time offenders and a \$4 to \$7 benefit for other offenders accruing for each dollar of program cost.” DOT HS 811 246, *supra* note 20, at 4 (citations omitted).

⁵⁵ Robyn D. Robertson & Ward G.M. Vanlaar, *Alcohol Interlocks: Planning for Success*, 13, Proceedings of the Ninth International Symposium on AIIDs, Tallberg, Sweden, 2008, Ottawa: Traffic Injury Research Foundation (2009), available at <http://www.interlocksymposium.com/index.cfm?id=9753> [hereinafter Robertson & Vanlaar (2008)]; see Douglas J. Beirness & Robyn D. Robertson, *Alcohol Interlock Programs: Pushing Back the Frontiers*, 32, Proceedings of the Fifth International Symposium on AIIDs, Tempe, Arizona, 2004. Ottawa: Traffic Injury Research Foundation (2005), available at http://iirp.tirf.ca/documents/Intro_to_IIS_V_Proceedings.pdf [hereinafter Beirness & Robertson (2004)]. (Because installation and monitoring of AIIDs is largely controlled by private entities, many judges regard the “[AIID] requirement as a moneymaker for the interlock providers and not a reliable method of reducing recidivism.”).

⁵⁶ *See supra* note 34 and accompanying text.

⁵⁷ 23 U.S.C.A. § 154 (West 2005).

approved repeat intoxicated driver law.⁵⁸ Initially, in order to comply with § 164, the repeat offender program must require, among other things, that the driver's vehicles be impounded, immobilized, *or have an AIID installed after the one-year license suspension.*⁵⁹

Before the enactment of TEA-21, only twelve states required AIID installation after completion of license suspension for repeat DUI offenders.⁶⁰ Today, twenty-six states mandate installation for certain offenders.⁶¹ A total of forty-eight states have legislation allowing for AIIDs for certain offenders, while two states (Alabama and South Dakota) have no AIID laws at all.⁶²

⁵⁸ 23 U.S.C.A. § 164 (West 2008); *see* Neugebauer, *supra* note 39, at 4.

⁵⁹ § 164 also required a minimum one year license suspension, periodic assessment of the offender's alcohol intake, treatment for alcohol abuse, and mandatory community service. Congress has recently revised TEA-21 to require either one year of hard license suspension or a combination of hard license suspension for forty-five days followed reinstatement of limited driving privileges for specific purposes as long as an AIID is installed on the offender's vehicle. § 164.

⁶⁰ Neugebauer, *supra* note 39, at 4.

⁶¹ Campaign to Eliminate Drunk Driving, *Status of State Ignition Interlock Laws*, MOTHERS AGAINST DRUNK DRIVING, <http://www.madd.org/Drunk-Driving/campaign/status-of-state-ignition.html> (last visited June 6, 2010).

⁶² *Id.* The following chart appears on MADD's website:

Status of State IID Laws					
Mandatory Conviction	.08	Mandatory with a BAC of at least .15	Mandatory with Repeat Conviction	Discretionary	No Interlock Law at All*
Alaska		Delaware	Massachusetts	All other states	Alabama
Arizona		Florida	Missouri		South Dakota
Arkansas		Kansas	Montana		
California	Pilot Program***	New Jersey	Oklahoma		
Colorado**		North Carolina	South Carolina		
Hawaii		Virginia	Texas		
Illinois**		West Virginia			
Louisiana		Wisconsin			
Nebraska		Wyoming			
New Mexico					
New York					
Utah					
Washington					

In addition to legislative incentives for states to adopt AIID requirements, research has peaked new interest since the turn of the twenty-first century. The Canadian-based Traffic Injury Research Foundation (TIRF) is a key organization involved in this research.⁶³ TIRF's focus has been on reducing recidivism.⁶⁴ Studies indicate that AIIDs reduce recidivism when the device is on the vehicle.⁶⁵ However,

*Until recently, Vermont had no interlock laws. However, approved May 27, 2010, state legislation now provides for discretionary use of interlock devices upon conviction. VT. STAT. ANN. tit. 23 § 1206 (2010), *amended* by 2010 no. 126 Vt. Legis. Serv.

**Interlocks are highly incentivized in that, if the offender chooses not to use the device, he or she has a year-long license suspension and any violation is a felony.

***California's pilot program covers the counties of Los Angeles, Alameda, Sacramento, and Tulare. These counties combined have a population of over 14 million. *Id.*

⁶³ Douglas J. Beirness & Robyn D. Robertson, *Alcohol Interlock Programs: Enhancing Acceptance and Compliance*, 2005 TRAFFIC INJURY RESEARCH FOUNDATION § 1.1, §1.2, at 2, http://tirf.ca/publications/PDF_publications/Hilton_Head_Proceedings.pdf. The purpose of the symposium is to provide "a forum for researchers, program specialists, vendors, policy makers and others to learn from each other about the latest developments, strategies, and tactics and to discuss current and emerging issues in interlock programs." Only about twenty-five individuals attended the first symposium in 2000. Attendance nearly tripled at the second symposium, which focused on mandating AIIDs as condition of license reinstatement for offenders to increase participation in the programs. As a result of the symposium, TIRF issued guidelines for programs mandating AIIDs before license reinstatements. By 2004, TIRF had attracted broad international interest, with over 150 delegates from twelve countries and twenty-three states in attendance. Beirness & Robertson, *Enhancing Acceptance*, *supra* note 55, at 2. With each passing year, joined by automobile manufacturers, these symposiums have examined emerging technologies and worldwide implementation of AIIDs, including commercial and public transport interlock programs. *See, e.g.*, Robyn D. Robertson, Ward G.M. Vanlaar & Douglas J. Beirness, *Alcohol Interlock Programs: A Global Perspective*, 2006 TRAFFIC INJURY RESEARCH FOUNDATION, http://iiip.tirf.ca/documents/Summary_of_Papers_from_6th_Interlock_Symposium.pdf.

⁶⁴ *E.g.*, in 2008, the Swedish Road Administration (SRA) and the Swedish Abstaining Motorists Association (MHF) hosted the ninth Annual International Interlock Symposium in Tallberg, Sweden. Under the theme "Planning for Success," the symposium discussed program features necessary for program acceptance and success. Presentations were developed "to assist jurisdictions that have implemented, that are implementing or that are considering implementing alcohol interlocks 'to plan for success' by sharing with them how to build and develop the essential ingredients of a successful interlock strategy." Robertson & Vanlaar, *Planning for Success*, *supra* note 55, at 2i, 3.

⁶⁵ According to fifteen different studies, the reduction of the rate of recidivism varies between thirty-five to seventy-five percent. DOT, HS 811 262, *supra* note 29 at 9; *see also* Dewey-Kollen & Downes, *supra* note 19, at 16 ("Specific findings include: a seventy-seven percent decrease in recidivism among interlocked first offenders in West Virginia, an eighty percent reduction in recidivism among interlock Quebec, and a ninety-five percent reduction in recidivism among interlocked first offenders in Alberta.") (citations omitted); *see also* *Alcohol Ignition Interlock Devices*, POSITION PAPER (INT'L COUNCIL ON TRAFFIC SAFETY/Working Group on Alcohol Ignition Interlocks, Ann Arbor, Mich.), July 2001, at 10, 11, <http://www.icadts.org/reports/AlcoholInterlocksReport.pdf> (ICADTS looks at eight different studies, comparing recidivism during and after the interlock program); *see also* Beirness, *Best Practices*, *supra* note 51, at 16-17 (nine studies conducted in the 1990s are summarized).

successful reduction in the rate of recidivism only persists while the device is installed on the vehicle: “[T] here is no residual effect in preventing impaired driving after the device is removed from the vehicle.”⁶⁶ Consequently, recommendations have focused on expanding AIID use to reduce recidivism by including first-time offenders, or by offering AIIDs as a diversion from the criminal justice system.⁶⁷

Outside the criminal justice system, several countries have experimented with and implemented mandatory AIID installation for commercial and public transport vehicles.⁶⁸ In 2004, the Swedish Road Administration (SRA) required that all trucks weighing over seven tons be equipped with AIIDs.⁶⁹

In the United States, AIIDs have not made their way onto commercial vehicles or public transport. Breathalyzers have become available for purchase in the consumer market, however.⁷⁰ But, AIID usage is required *only* in connection with sentencing (or diverting) a drunk driver within the criminal justice system. As a sentencing tool, AIIDs could make a much greater difference than they currently do.

Despite statutory mandates, however, judges rarely order it.⁷¹ History proves that a mere mandate will not successfully implement a program.⁷² Only ten to

⁶⁶ Beirness, *Best Practices*, *supra* note 51, at 17.

⁶⁷ Pre-conviction diversion programs allow judges to dismiss drunk driving charges after the offender has completed the program requirements. Many pre-conviction diversion programs include a combination of educational classes with the use of interlock devices. If an offender receives a subsequent drunk driving charge, he or she is treated as a first-time offender. *See Initiatives to Address Drunk Driving*, *supra* note 13, at 26.

⁶⁸ *See* Robertson & Vanlaar, *Planning for Success*, *supra* note 55, at 54.

⁶⁹ In 2006, The SRA reduced the weight to 3.5 tons. *See* Robertson & Vanlaar, *Planning for Success*, *supra* note 55, at 54.

⁷⁰ Consumer devices must be approved by the FDA. *See Home Health and Consumer Devices*, FDA.GOV <http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/default.htm> (last visited Aug. 25, 2010). Approved AIID devices appear on the FDA’s website. *See Product Classification*, FDA.GOV <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPCD/PCDSimpleSearch.cfm?db=PCD&id=DJZ> (last visited Aug. 25, 2010). The personal breathalyzer market was valued at \$215.2 million in 2009, up from \$27.9 million in 2005. *See* Katharine Lackey, *Sales of Personal Breathalyzers Spike*, USA TODAY, Dec. 22, 2009, available at http://www.usatoday.com/news/nation/2009-12-22-personal-breathalyzers-sales-increase_N.htm. They range in price from \$3 to \$299 for high-end digital devices. *See id.* There is even a new iPhone application that doubles as a breathalyzer! *See Preview of DrinkTracker Breathalyzer*, iTUNES APP STORE, <http://itunes.apple.com/us/app/drinktracker-breathalyzer/id316993951?mt=8> (last visited Aug. 25, 2010).

⁷¹ *See* Beirness & Robertson, *Enhancing Acceptance*, *supra* note 63, at 10. During the 1990’s, Washington legislatures required judges to order AIIDs when the offender’s BAC was 0.15 or greater. Rather than seeing an increase in the number of AIIDs, the number of plea bargains and charge reductions for DUI offenders increased. *See* Beirness & Robertson, *Pushing Back Frontiers*, *supra* note 55, at 32. Similarly, a California study revealed that judges do not necessarily believe that AIIDs reduce recidivism despite evidence to the contrary. *See* Beirness & Robertson, *Enhancing Acceptance*, *supra* note 63, at 26. Other studies indicate that “[m]any judges perceived the [AIID] requirement as a moneymaker for the interlock providers and not a reliable method of reducing recidivism.” Beirness & Robertson, *Pushing Back Frontiers*, *supra* note 55, at 32.

⁷² *See* Robertson & Vanlaar, *Planning for Success*, *supra* note 55, at 13.

twenty-five percent of eligible offenders are required to install devices as a condition of their punishment.⁷³ In 2008, with nearly 1.5 million arrests, the number of installed AIIDs was estimated to be about 146,000.⁷⁴ Even when a court orders a convicted offender to install an AIID, the order is often ignored.⁷⁵

Judges and lawyers are reluctant to require AIID installation in sentencing offenders because, in part, they hold outdated views about the technology.⁷⁶ Two of the most prominent misconceptions concern the user's ability to circumvent the system and the rate of false positives. Neither concern is particularly relevant given today's technological progress.

Current AIIDs limit a driver's attempts to circumvent the device by employing three technologies: (1) rolling retests, which require the driver periodically to give breath samples after the vehicle has been started;⁷⁷ (2) electronic data recording, which registers any attempts to disconnect or otherwise tamper with the AIID;⁷⁸ and (3) driver-recognition systems, which prohibit anyone but the driver from providing a sample.⁷⁹ False positives, if they occur, mean that the device incorrectly precludes

⁷³ See *id.*

⁷⁴ See Richard Roth, *Estimates of Currently Installed Interlocks in the U.S.*, 1 (2009) <http://www.rothinterlock.org/2009currentlyinstalledinterlocksbystate.pdf> (state-by-state estimates were calculated from estimates provided by ten U.S. interlock distributors: Autosense, ACS, ADS, CST, Draeger, Guardian, Interceptor, Lifesafar, Moneitech, and Smart Start).

⁷⁵ One study indicated that twenty-five percent of offenders ordered to have an AIID installed never do even though failure to do so is a violation of the offender's probation. See Beirness, *Best Practices*, *supra* note 51, at 20.

⁷⁶ See Dewey-Kollen & Downes, *supra* note 19, at 18. "[T]heir knowledge is contaminated by the 'myths' that plague interlock programs. This is particularly true of older, more established programs (e.g., CA) because many of these professionals have first-hand experience with the difficulties experienced by some of the earlier interlock programs." Beirness & Robertson, *Enhancing Acceptance*, *supra* note 63, at 40.

⁷⁷ See Beirness & Robertson, *Enhancing Acceptance*, *supra* note 63, at 10-11. Rolling retests prevent a sober person from providing a sample for an alcohol-impaired driver and detect drivers whose BAC increases after they start the car because they have continued drinking *while* driving. Failure to provide a breath sample or a breath sample that registers above the threshold value does not stop the engine to avoid creating unsafe traffic conditions. Rather, a retest violation triggers an alarm that can result in flashing lights, continuous horn beeping, or an internal alarm. Hopefully, these measures will prompt the driver to stop the vehicle. In addition to a visual or auditory alarm, the retest violation will also be recorded on the data logger. See Beirness, *Best Practices*, *supra* note 51, at 11 (emphasis added).

⁷⁸ Data loggers record date and time of all successful and unsuccessful attempts to start the vehicle, including all breath sample results. They provide information like the number of times the participant tried to start the car while intoxicated. See Beirness, *Best Practices*, *supra* note 51, at 10.

⁷⁹ Driver-recognition systems require the driver to hum, or reproduce a specific breath-pulse code while providing a breath sample. They are designed to be difficult for first-time users, so they prevent sober bystanders from providing a breath sample for an alcohol-impaired participant. See Beirness, *Best Practices*, *supra* note 51, at 11. They prevent the participant from trying to simulate breath samples by storing samples in balloons or using air compressors. See Jay M. Zitter, *Validity, Construction, and Application of Ignition Interlock Laws*, 15 A.L.R. 6th 375, §2 (2006).

a legally sober driver from starting the vehicle.⁸⁰ Current electrochemical sensors, however, eliminate the possibility of the device detecting anything but alcohol.⁸¹ The technology is not the culprit.

Flaws in program designs also contribute to underutilization. Although TEA-21 sought to impose AIID programs, it provided little direction.⁸² Many offenders are AIID-ineligible until it is too late. For example, TEA-21 mandates a period of “hard” license suspension, where offenders lose all driving privileges and cannot participate in any monitored driving programs, including an AIID program.⁸³ Evidence indicates, however, that the *sooner* an offender enters an AIID program, the less likely recidivism will occur.⁸⁴ Moreover, license suspension does not keep

⁸⁰ False positives “diminish confidence in the system and may increase the probability of users attempting to circumvent the system or driving another vehicle not equipped with an [AIID].” For earlier systems, false positives were the most commonly reported problem. The testing devices often responded to nonalcoholic substances. See Beirness, *Best Practices*, *supra* note 51, at 14, 21-22.

⁸¹ Today, most false positives result when unmetabolized alcohol is present in the body although the individual has not consumed any alcohol for many hours. Typically, the presence of unmetabolized alcohol can be attributed to excessive drinking the previous night. In other words, a driver wakes up drunk and is still too impaired to drive. See Beirness, *Best Practices*, *supra* note 51, at 22.

⁸² The legislation was described as “ambiguous, making it difficult to interpret,” “too complicated,” or “convoluted.” Beirness & Robertson, *Enhancing Acceptance*, *supra* note 63, at 40. In 1992, NHTSA did issue program guidelines called Model Specifications for Breath and Alcohol Ignition Interlock Devices (BAIIDs) for states, but these recommendations were designed to allow flexibility for states to design their own programs. See generally Model Specifications for BAIIDs, 57 Fed. Reg. 11772, 11787 (Apr. 7, 1992); see also ICADTS, *supra* note 65, at 9. Primarily, recommendations set minimum requirements for AIIDs to prevent false positives (i.e., an AIID must allow an individual with a very low or zero BAC to operate the vehicle), and advised states to require data recording systems and running retests to prevent circumvention. See Model Specifications for BAIIDs, 57 Fed. Reg. at 11775; see also Beirness, *Best Practices*, *supra* note 51, at 13. In addition, NHTSA recommended mandatory re-calibration to allow the supervising authority to review the data recorder. However, NHTSA provided no means of certification for properly functioning equipment. Many proponents of AIIDs criticize the program for having no central agency or certified laboratories to evaluate the equipment. See Model Specifications for BAIIDs, 57 Fed. Reg. at 11776; see also Beirness, *Best Practices*, *supra* note 51, at 13.

⁸³ Congress has amended the Act to allow for a forty-five day period of hard license suspension followed by limited license reinstatement when an AIID is installed. 23 U.S.C.A. § 164(A)(ii) (West 2008). This amendment has most likely contributed to the increase of AIIDs. Still, any offense, whether alcohol-related or not, committed by DUI offenders during hard suspension time can preclude participation when they would have otherwise become eligible. One study indicates that these

“[I] neligible” offenders had the highest re-offense rate *during the period of time that the [AIID] would have been installed in their vehicles* had they been accepted into the program. These high-risk offenders are most in need of the control provided by the [AIID] program to prevent repeated DUI occurrences, yet they are the very ones systematically excluded from participation.

Beirness, *Best Practices*, *supra* note 51, at 29 (emphasis added).

offenders off the road: fifty to seventy-five percent of offenders whose licenses are suspended continue to drive anyway.⁸⁵

In addition, many first-time offenders are AIID-ineligible. One author notes that drunk driving laws have been lenient on first time offenders: “offenders simply had ‘a little too much to drink’” and they will “learn from their mistakes.”⁸⁶ However, evidence contradicts these notions.⁸⁷ In over ninety percent of alcohol-related fatal crashes, the alcohol-impaired driver has not been convicted of a drunk driving offense during the previous three years, indicating that he or she would be considered a first-time offender.⁸⁸ Studies also demonstrate that most first-time offenders have BAC levels *twice* the legal limit, increasing the likelihood of an accident. First-time offenders are just as likely to have issues with alcohol as repeat offenders.⁸⁹ In a clinical evaluation, researchers concluded that eighty percent of the group comprising first-time offenders had problems with alcohol abuse.⁹⁰ Only eighteen percent were considered social drinkers.⁹¹

To be sure, there has been a push for tougher laws for first-time offenders. Recently, NHTSA formed a panel to create more guidelines for state programs. The panel issued a report in May 2010.⁹² Overall, the panel recommended early program entry, harsher penalties for noncompliance, standardization of reporting and information flow, and alcohol-treatment incorporation.⁹³

⁸⁴ Many proponents of AIIDs advocate for a reduction in hard license suspension: “If the offender has already served a lengthy period of hard suspension and has experienced the ease, convenience, and low risk of detection for driving while suspended, the ‘benefits’ of participating in an [AIID] program may pale in comparison.” Beirness *Best Practices*, *supra* note 51, at 26.

⁸⁵ See Dewey-Kollen & Downes, *supra* note 19, at 15. For drunk drivers involved in fatal crashes, between twenty-two and thirty-four percent were driving without a valid license at the time of the accident. See DOJ, *Alcohol and Crime*, *supra* note 7, at 19. License restoration may still be even an insufficient incentive to encourage participation in AIID programs. A study conducted in California indicated that “only 16.4 percent of repeat offenders applied for license reinstatement within three years of having become eligible.” Beirness, *Best Practices*, *supra* note 51, at 26-27.

⁸⁶ Dewey-Kollen & Downes, *supra* note 19, at 14.

⁸⁷ *Id.*

⁸⁸ Ferguson et al., *supra* note 38, at 4.

⁸⁹ Dewey-Kollen & Downes, *supra* note 19, at 15.

⁹⁰ *Id.*

⁹¹ Studies also show that seventy to eighty percent of *all* offenders abuse alcohol. Dewey-Kollen & Downes, *supra* note 19, at 15 (emphasis added).

⁹² See generally DOT HS 811 262, *supra* note 29. Because NHTSA’s 1992 guidelines addressed technical standards like circumvention protocols and threshold BAC levels for lockout, the recent panel focused on “how those devices should be used in the interest of safety.” DOT HS 811 262, *supra* note 29, at 19.

⁹³ See DOT HS 811 262, *supra* note 29, at 21, 30-33, 35, 41-42. Currently, states take varying approaches to ensuring that a DUI offender complies with an AIID order. For example, in eight states, the Department of Motor Vehicles administers the program; in eight states, courts administer the program; in two states, probation departments administer the

In November of 2006, MADD launched its “Campaign to Eliminate Drunk Driving,” which called for mandating AIIDs for all offenders.⁹⁴ Similar recommendations have been urged by the Centers for Disease Control,⁹⁵ the nonprofit organization Don’t Die Drunk,⁹⁶ and The Century Council.⁹⁷

In 2005, New Mexico became the first state to pass legislation mandating an AIID program for first-time offenders.⁹⁸ Among other states, Arizona, Illinois, and Louisiana now also require AIIDs for all offenders, including first-time offenders.⁹⁹ New Mexico’s effort to eliminate drunk driving, however, is worth a closer examination.¹⁰⁰

program; and in seventeen states multiple agencies administer the program. Beirness & Robertson, *Enhancing Acceptance*, *supra* note 63, at 23. Even with the new NHTSA recommendations, they are only guidelines. What this all means is that when a judge orders the convicted (or diverted) offender to install an AIID, there is rarely enough accountability in the judicial system to make sure that happens. State agencies involved with AIID programs must have a reporting system. *See* Beirness & Robertson, *Enhancing Acceptance*, *supra* note 63, at 42. Many convicted (or diverted) drunk drivers have access to a vehicle that is not equipped with an AIID. Even when offenders are ordered to have AIIDs installed, they do not. This goes undetected due to a lack of communication between program administrators and courts. *See* Beirness *Best Practices*, *supra* note 51, at 23. Monitoring is the only way to ensure compliance. In addition, monitoring also ensures that the AIID is functioning properly and has not been circumvented. *See* Beirness *Best Practices*, *supra* note 51, at 40-41.

⁹⁴ *See Campaign to Eliminate Drunk Driving*, MOTHERS AGAINST DRUNK DRIVING, <http://www.madd.org/drun-driving/campaign> (last visited Feb. 22, 2011). Campaign efforts seek to permanently eliminate drunk driving by concentrating on four issues: (1) *mandating AIIDs for all offenders*; (2) expanding law enforcement efforts by implementing more sobriety checkpoints and saturation patrols; (3) advancing vehicle technology to make it impossible for a drunk person to circumvent; and (4) increasing public support and awareness. *Id.*

⁹⁵ *See Motor Vehicle Safety: Impaired Driving*, CTRS. FOR DISEASE CONTROL AND PREVENTION, http://www.cdc.gov/motorvehiclesafety/impaired_driving/impaired-drv_fact_sheet.html (last visited Feb. 22, 2011).

⁹⁶ *See* DON’T DIE DRUNK, <http://www.dontdiedrunk.org> (last visited Feb. 22, 2011).

⁹⁷ *See Drunk Driving Legislation & Public Policy*, THE CENTURY COUNCIL, <http://www.centruycouncil.org/fight-drun-driving/public-policy> (last visited Feb. 22, 2011).

⁹⁸ N.M. STAT. ANN. § 66-8-102(N) (West 2010); *see also* Dewey-Kollen & Downes, *supra* note 19, at 14.

⁹⁹ Dewey-Kollen & Downes, *supra* note 19, at 14. ARIZ. REV. STAT. ANN. §28-1381 (West 2010); 625 ILL. COMP. STAT. ANN. 5/6-205 (West 2010); LA. REV. STAT. ANN. § 32:378.2 (2009). In addition, the following states require AIIDs whenever the offender’s BAC exceeds .08: Alaska (ALASKA STAT. §11.76.140 (2010), *amended by* 2010 ALASKA SESS. LAW Ch. 85 (S.B. 239)); Arkansas (ARK. CODE ANN. § 56-65-118 (West 2007)); Colorado (COLO. REV. STAT. ANN. § 42-2-132.5 (West 2004)); Hawaii (HAW. REV. STAT. ANN. § 291 E-41 (West 2010), *amended by* 2010 HAW. SESS. LAWS 166 (2010)); Nebraska (NEB. REV. STAT. § 60-498.02 (2010), *amended by* 2010 N.H. LAWS 924); New York (N.Y. VEH. & TRAF. LAW § 1193 (McKinney 2009), *amended by* 2010 N.Y. SESS. LAWS A. 9706-C (McKinney 2010)), Utah (UTAH CODE ANN. § 41-6a-505 (West 2005)); and Washington (WASH. REV. CODE ANN. § 46.61.5055 (West 2001), *amended by* 2010 WASH. LEGIS. SERV. 269 (West)).

¹⁰⁰ Many have commended New Mexico’s progress. A panel created to issue a report to NHTSA to develop recommendations for state AIID programs repeatedly cited New Mexico’s program as a model for other states. U.S. Department of Transportation, National Highway

At one time, New Mexico had one of the country's highest rates of alcohol-related crashes, prompting New Mexico legislatures to address the issue.¹⁰¹ As a result, New Mexico has developed one of the most comprehensive programs to reduce drunk driving. In fact, Governor Bill Richardson boasts that New Mexico has gone from having some of the worst problems with alcohol-impaired driving to being a forerunner in fighting alcohol-impaired driving.¹⁰²

With fifty percent of offenders installing AIIDs, New Mexico has developed one of the most successful AIID programs in the country.¹⁰³ With a total of 8625 AIIDs, per capita, installed in 2009, New Mexico far surpasses any other state in total number of devices installed.¹⁰⁴ Mandatory AIID installation for *all* offenders is one reason New Mexico's participation rates are higher than other states. New Mexico was the first state to require AIIDs for all offenders.¹⁰⁵ New Mexico laws encourage prompt program participation, rather than hard license suspension. A first-time offender must participate in the program for one year, with two years for a second-time offender, and three years for a third-time offender. Offenders with four or more previous DUI convictions are mandated for *lifetime* participation with review after five years.¹⁰⁶

New Mexico's efforts have resulted in a thirty-five percent decrease in the number of alcohol-related deaths since 2002.¹⁰⁷ In addition, since 2002, there are about thirty percent fewer crashes involving alcohol, and consequently, fewer injuries resulting from these crashes.¹⁰⁸ Increased AIID use has definitely contributed to the reduction of alcohol-related crashes. As Governor Richardson put it: "Our solutions are working. We have changed the culture in New Mexico. No one thought it was possible, but it has happened."¹⁰⁹

Traffic Safety Administration, *supra* note 29. Chuck Hurley, retired chief executive of Mothers Against Drunk Driving (MADD), stated that MADD wanted all fifty states to follow New Mexico's lead. Kate Linthicum, *New Mexico Turns a Corner on Drunk Driving*, L.A. TIMES, (July 7, 2009), <http://articles.latimes.com/2009/jul/07/nation/na-new-mexico-dwi7>.

¹⁰¹ See U.S. Department of Transportation, National Highway Traffic Safety Administration, *supra* note 29.

¹⁰² U.S. Department of Transportation, National Highway Traffic Safety Administration, *News and Notes from New Mexico: The Comprehensive Impaired Driving Project, Issue 4*, 1 (2010), http://www.nhtsa.gov/staticfiles/nti/impaired_driving/pdf/newsNM-issue4.pdf.

¹⁰³ U.S. Department of Transportation, National Highway Traffic Safety Administration, *supra* note 29, at 22.

¹⁰⁴ Roth, *supra* note 74, at 2.

¹⁰⁵ Haya El Nesser, *States Turn on to Idea of Ignition Locks*, USA TODAY, June 23, 2005, http://www.usatoday.com/news/nation/2005-06-23-drunk-driving_x.htm.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ See Richard Roth, *Interlocks Up, Drunk Driving Down* (2008), <http://www.rothinterlock.org/interlocksudrunkdrivingdown081027.pdf>.

¹⁰⁹ U.S. Department of Transportation, National Highway Traffic Safety Administration, *supra* note 102, at 1.

Still, the easiest way to bypass an AIID is to drive an unequipped car. Consequently, some states have devised ways for law enforcement to detect when a program participant drives a vehicle not equipped with an AIID.¹¹⁰ For example, Maryland denotes the restriction on the front of the offender's driver's license in red ink.¹¹¹ Recently, some states have been incorporating license restrictions into data recovered from "automatic tag readers."¹¹² Automatic tag readers allow law enforcement to scan the license plate of a moving or stationary car to determine if the vehicle owner has a suspended driver's license.¹¹³

Clearly, AIIDs have gained a foothold in the criminal justice system's response to a drunk driving arrest. Nonetheless, while progress has been made toward keeping convicted (or diverted) drunk drivers off the roads because AIIDs keep their cars from starting, the focus has been limited to *identified* offenders for a *limited* period of time. Once the AIID comes off the car, all bets are off. AIIDs do not prevent recidivism.¹¹⁴ They do not, standing alone, treat alcohol abuse problems. If AIIDs help offenders change their lifestyle, it is only when they are part of a comprehensive treatment program.¹¹⁵ The cost of a probation term that includes an AIID order - even without a stay in a local jail or prison - is all but wasted if recidivism is not prevented.¹¹⁶ Unless an offender is slapped with an AIID order *for the rest of his or her life*, and the offender complies with that order, nothing in the current approach will keep offenders off the roads. Offenders will drive with suspended licenses; offenders will drive unequipped cars; offenders will ignore an AIID order, escape detection, and keep right on down the road.

¹¹⁰ See Beirness & Robertson, *supra* note 63, at 11.

¹¹¹ See MD. CODE ANN., Transp. § 27-107 (West 2010); MD. CODE REGS. 11.11.13.03 (2010).

¹¹² See Beirness & Vanlaar, *supra* note 55, at 14. See also Beirness & Robertson, *supra* note 63, at 11. MADD recommends license restriction: "If the Court orders an [AIID], the Court shall order the DMV to issue the Defendant a restricted interlock license which indicates the defendant is allowed to operate a motor vehicle only if it is equipped with an [AIID]." MADD's Model AIID Law Provisions, MOTHERS AGAINST DRUNK DRIVING, <http://www.madd.org/getfile/0c1aa3dd-afc6-4860-9a61-351011b3ddfe/MADD-s-Concise-Model-Interlock-Law-9-24-2008.aspx> (last visited Aug. 25, 2010). The Century Council recommends AIID "restrictions be clearly marked on the driver's license of all program participants." The Century Council, *IIDs: What you should Know*, 3 (2009), available at <http://www.centurycouncil.org/files/ignitioninterlockfacts.pdf>.

¹¹³ See Beirness & Vanlaar, *supra* note 55, at 14.

¹¹⁴ Researchers examined fourteen studies in the United States and Canada evaluating the effects of AIID programs on drunk-driving recidivism. The bottom line: AIID programs reduce drunk-driving recidivism, but only while the devices are attached. See *Motor Vehicle Safety: Impaired Driving*, CTRS. FOR DISEASE CONTROL, http://www.cdc.gov/motorvehiclesafety/impaired_driving/impaired-drv_factsheet.html (last visited Aug. 23, 2010).

¹¹⁵ See Beirness & Robertson, *supra* note 63, at 1.

¹¹⁶ For example, in New Mexico, it is estimated that each DUI costs the state \$50,000. However, studies indicate that an effective AIID program can offset the cost by a \$5-to-\$1 benefit-to-cost ratio. The cost is passed to the offender, saving the state money. U.S. Department of Transportation, National Highway Traffic Safety Administration, *supra* note 29, at 26.

Moreover, the exclusive focus for requiring AIIDs on *identified* offenders is too narrow. What about the rest of us? Most of us drive without having consumed any alcohol.¹¹⁷ But, a good number of us leave a party, a restaurant, or a picnic having had “one too many” and manage to arrive safely home without getting stopped.¹¹⁸ We are not deterred by the threat of getting stopped on the way home. Nevermind that we, too, might flunk a breathalyzer test. If we think about it at all, we take a minute to thank our lucky stars. Or, we congratulate ourselves on being accurate judges of our sobriety. Research shows, however, that our self-assessment is frequently off – we are more drunk than we know.¹¹⁹ Still, many know they have had too much, but still drive “safe” in the knowledge that there could never be enough police officers in enough places to haul every drunk driver off the streets. If we are serious about removing drunk drivers from the road, and technology provides prevention, employing it solely within the criminal justice system means that only unlucky drunk drivers will be stopped. Unlucky, of course, only in the sense that we all feel that we have been lucky if we do not get caught doing something wrong or dangerous. The goal should be to keep *anyone* from ever being able to “roll the dice” and drive drunk, undetected or not.

Indeed, many organizations have initiated research to improve the technology of AIIDs with the long-term goal of incorporating devices into all vehicles. They recognize that AIIDs must function accurately and efficiently before AIIDs can even be a consideration for non-offenders.¹²⁰ The movement to use technology to prevent drunk driving is well underway.

¹¹⁷ From 1990 to 2006, the number of licensed drivers grew from 167 million to 202 million. From 1980 to 1990, total miles vehicle miles traveled (VMT) increased from 1.5 to 2.1 billion, or approximately forty percent. Between 1990 and 2000, this figure increased an additional twenty-eight percent. By 2005, total highway VMT had increased to three billion. This means that VMT doubled in the twenty-five years between 1980 and 2005. U.S. Department of Transportation, National Highway Transportation, DOT HS 811 040, *Technology Application for Safety Programs: A Primer*, 2 (Sept. 2008), available at <http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811040.pdf> [hereinafter DOT HS 811 040].

¹¹⁸ Surveys suggest that drinking drivers made between 809 million and one billion trips in 2001. Drivers with BAC levels of 0.08 and above made between 40 and 50 million trip. *Why Undertake This Research? Alcohol Detection*, DADSS: DRIVER ALCOHOL DETECTION SYSTEM FOR SAFETY, <http://www.dadss.org/taxonomy/term/6> (last visited Aug. 23, 2010) (citing NHTSA, 2003).

¹¹⁹ In a recent study in England, more than forty percent of individuals with BAC level at .08 or above self-assessed themselves as not being drunk. More than seventy-nine percent of those who regarded themselves as drunk intended to consume more alcohol before returning home. Mark A. Bellis, Karen Hughes, Zara Quigg, Michela Morleo, & Paulo Lisboa, *Cross-sectional Measured and Modelled Estimates of Blood Alcohol Levels in UK Nightlife and Their Relationship with Drinking Behaviours and Observed Signs of Inebriation*, SUBSTANCE ABUSE TREATMENT, PREVENTION, & POL’Y, Apr. 20, 2010, available at <http://www.substanceabusepolicy.com/content/5/1/5>. See also, Maria Teresa Munoz Sastre, Etienne Mullet, & Paul Clay Sorum, *Self-Assessment of Inebriation from External Indices*, 25 ADDICTIVE BEHAVIORS 5, 663 (2000).

¹²⁰ See Beirness & Robertson, *supra* note 55, at 17.

IV. PROGRESS TOWARD A PERMANENT FIX

In 2004, New Mexico, New York, and Oklahoma considered legislation mandating that all new vehicles be equipped with AIIDs.¹²¹ New Mexico established a Governor's Task Force to address broader AIID implementation.¹²²

In 2008, NHTSA entered into a five-year cooperative agreement with the Automotive Coalition for Traffic Safety (ACTS)¹²³ to develop universal AIIDs. The coalition, entitled Driver Alcohol Detection System for Safety (DADSS), is conducting comprehensive research regarding universal alcohol AIIDs.¹²⁴ The goal, by the end of the five-year agreement, is to present "the practical demonstration of an alcohol detection subsystem, suitable for subsequent installation in a vehicle."¹²⁵ The initial funding for this effort exceeds \$10 million.¹²⁶

DADSS wisely recognizes that, to be suitable for general public use, "alcohol detection technologies must be far less intrusive – they must not impede sober drivers from starting their vehicles."¹²⁷ Admittedly, this is no small goal. We drivers are a touchy, impatient bunch. The idea of having to blow air into a handheld recording device is offensive in its own right. Actually, we do not want to have to touch *anything* besides the steering wheel and, where necessary, the keyless ignition button. We do not want to have to do anything once we get in the car, but turn the key and put the pedal to the metal. And, if we're sober enough, our cars better start, or there'll be hell to pay!

Yes, for the most part, we have finally been willing to buckle up.¹²⁸ Grudgingly. But, we're insulted at the notion that we should have "to prove" we are sober in order to get on with our lives. To be questioned at this point of personal assessment strikes at some fundamental notions about our right to exercise self-control and, even more deeply, our desire to feel we are in control of our lives and our destiny. Let's be honest – most social drinkers *enjoy* the feeling of legal intoxication. We do not believe that our competence to make judgments is adversely affected by an

¹²¹ Ferguson et al., *supra* note 38, at 4.

¹²² *Id.*

¹²³ ACTS is a private organization formed by vehicle manufacturers to address safety concerns. It is primarily funded by BMW, Chrysler, Ford, General Motors, Jaguar, Land Rover, Mazda, Mercedes Benz, Mitsubishi, Nissan, Porsche, Toyota, and Volkswagen. *Id.* at 5.

¹²⁴ *Id.* at 1. DADSS's primary goal is to "explore the feasibility, potential benefits of, and the public policy changes associated with a more widespread use of in-vehicle technology to prevent alcohol-impaired driving." *Id.* at 5.

¹²⁵ *Id.* at 5.

¹²⁶ *Why Are We Here?*, DADSS: DRIVER ALCOHOL DETECTION SYSTEM FOR SAFETY, <http://www.dadss.org/> (last visited Feb. 26, 2011) (follow "Who are the players in the DADSS program"). "The Automotive Coalition for Traffic Safety (ACTS) and the National Highway Traffic Safety Administration are engaged in a cooperative research agreement. Costs of the 5-year, \$10 million agreement will be shared by both organizations." *Id.*

¹²⁷ DADSS, *supra* note 126 (without the parenthetical). "They would need to be capable of rapidly and accurately determining and measuring alcohol in the blood. They would also need to be small, reliable, durable, repeatable, maintenance free, and relatively inexpensive." *Id.*

¹²⁸ *See infra* notes 170-185 and accompanying text.

evening's merriment. We believe we have the right to be left alone to judge when enough is enough. If we have had a few drinks at dinner, our private, individual judgment about our sobriety should be respected.¹²⁹ Ideally, drivers should not have to *do anything* beyond being in the driver's seat, breathing normally. Even then, we do not want to have to wait too long for the engine to start. Oh, and we do not want a passenger's boozy exhalations to trip us up. What a blow to the Designated Driver Program if that were to happen!¹³⁰

Fortunately, DADSS's specifications anticipate and respond to these inchoate arguments. The alcohol detection systems under development must disable a vehicle *only* if the driver's BAC exceeds .08.¹³¹ Further, the system must detect the driver's BAC within .325 to .4 seconds from the time the driver enters the vehicle and closes the door.¹³² Additionally, when determining the driver's BAC level, the system must be able to identify alcohol and, at the same time, ignore other non-intoxicating substances that might contain alcohol.¹³³ For many folks, the issue of personal control over the decision to drive drunk is alleviated because the technology will not allow for a false positive.

The technologies under development – distant spectrometry¹³⁴ and electrochemical spectrometry¹³⁵ -- use sophisticated air and tissue sensors that are

¹²⁹ DADSS is searching for ways to assuage fears that AIID-equipped cars will impinge on our right to exercise this judgment. *See generally* Susan Ferguson, *Star Wars Meets Drunk Driving: A Technological Solution to Eliminate Drunk Driving*, DADSS, 39-41 (Aug. 19, 2009), http://www.dadss.org/sites/default/files/Ferguson_NM_Traffic%20Safety%20Summit_08-19-09_.pdf [hereinafter Ferguson Presentation (2009)] (noting the different concerns drivers may have regarding the technology).

¹³⁰ *See generally supra* note 13 and accompanying text for a history of the Designated Driver Program.

¹³¹ *Draft Subsystem Performance Specification*, DADSS, 1 (Oct. 9, 2008), http://www.dadss.org/sites/default/files/dadss001-draft_100908.pdf [hereinafter DADSS Performance Specifications]. The Performance Specifications issued by DADSS identify its mission or theme: "The DADSS Subsystem provides information to the Vehicle Decision Module to deter operation of motor vehicles by drivers who are at or above 0.08 Blood Alcohol Content (BAC)." *Id.* This conforms with the European Standard "EN 50436-2: Alcohol interlocks. Test methods and performance requirements. Part 2. Instruments for general preventive use." *Id.* at 15. In addition, the specifications require that the range of error for BAC at .07 to .09 BAC be no greater than .0003 standard deviations. *Id.* at 8.

¹³² *Id.* at 4.

¹³³ *Id.* at 16-20. For example, perfume, after shave, tobacco, antibacterial soap, lotion, hand cleaner, suntan lotion, vehicle fuel, paint, grease, dirt or soil, and food. *Id.*

¹³⁴ Unlike tissue spectrometry, which measures the amount of light absorbed when a Near-Infrared (NIR) beam is shone on the driver's skin, but requires skin contact, distant spectrometry assesses the skin's chemical makeup without requiring contact. Ferguson Presentation (2009), *supra* note 129, at 34.

¹³⁵ Electrochemical spectrometry causes chemical reactions to detect alcohol either in the breath or through the skin. *Using Technology to Eliminate Drunk Driving*, NHTSA, 7 (Apr. 12 2010), <http://www.nhtsa.gov/DOT/NHTSA/NVS/Public%20Meetings/Presentations/2010%20Meetings/HyundaiDADSS.pdf> [hereinafter DADSS, Hyundai Presentation]. Using semiconductor technology, it detects the presence of ethanol in the driver's exhalation. Bud

positioned on the steering wheel and other strategic vantage points in the vehicle to detect a driver's BAC from breathing, and from the driver's skin when a start button is touched.¹³⁶ In 2009, three companies each received \$400,000 to perfect the research underlying these technologies.¹³⁷ So far, DADSS reports that it is on schedule to meet its 2013 delivery of a prototype. DADSS estimates that the earliest that vehicles equipped with alcohol detection systems would hit the market is eight to ten years after the prototype is perfected.¹³⁸

Even if a detection system that accurately prevents drunk driving gains traction, many folks are stalled at the notion that a detection system will retain the current use of a data logger.¹³⁹ Indeed, data loggers would still record BAC, regardless if the vehicle starts.¹⁴⁰ Do they have legitimate privacy concerns? There is, at least, an argument that evidence from data loggers, to the extent they are standard equipment and, thus, involuntarily imposed on the driver, will invade a driver's reasonable expectation of privacy in his or her vehicle.¹⁴¹ It turns out that data loggers – often called event data recorders (EDRs) or black boxes -- have been lurking inside our vehicles for years.

Zaouk, *Driver Alcohol Detection System for Safety (DADSS): A Cooperative Research Effort Between Industry and Government*, DADSS, 11 (Apr. 12, 2010), http://www.dadss.org/sites/default/files/04-11-10_LifeSavers.pdf. It has the ability to “capture [an] entire ethanol fingerprint.” *Id.* A related technology, “near-infrared (NIR) absorption spectroscopy,” detects alcohol in the driver's skin tissue. DADSS, Hyundai Presentation, *supra* note 135, at 6.

¹³⁶ Zaouk, *supra* note 135, at 8.

¹³⁷ Press Release, DADSS, Major Advancement for Efforts to Eliminating Drunk Driving: Research Awards Granted to Three Companies, 1 (Sept. 25, 2009), *available at* http://www.dadss.org/sites/default/files/DADSS_press_release_2009.pdf [hereinafter Press Release, DADSS] (noting that the three companies are: Autolive Development AB (Varagarda, Sweden), Alcohol Countermeasures Systems, Inc. (ACS) (Toronto, Canada), and Trutouch Technologies (Albuquerque, NM)). Eventually, funding that totals \$2.5 million per awardee will be available to continue development of the prototype. *Id.* at 1.

¹³⁸ Telephone Interview with Susan Ferguson, Program Manager, DADSS (Aug. 9, 2010) [hereinafter Ferguson Interview].

¹³⁹ The Ferguson Presentation (2009), *supra* note 129, at 39-41. The objection to having “Big Brother” control access to driving our vehicles is another question DADSS must answer. *Id.*

¹⁴⁰ Intra-Subsystem Component to Component: “Interfaces between the DADSS sensor and the DADSS SPU shall perform in a manner to minimize the risk of manipulation by the vehicle owner, its authorized drivers, or other parties. Such techniques may include shielding of interfaces, rolling counters, or encrypted communication.” DADSS Performance Specifications, *supra* note 131, at 5. Tampering: “The DADSS Subsystem shall be designed and built such that it cannot be put out of service or be rendered ineffective or destroyed, without visible changes to the installation. The access to the data memory, to means for setting parameters and to adjustment possibilities shall be designed so as to minimize unauthorized or inadvertent interference.” *Id.* at 9.

¹⁴¹ See generally Janet Brewer & Ogan Gurel, *Nanomedicine: Issues of Privacy and Informed Consent*, 6 NANOTECHNOLOGY L. & BUS. 45 (2009) (asserting that when personal medical information is collected by nanotechnological diagnostic methods, certain privacy concerns of the individual are implicated); Neugebauer, *supra* note 39, ¶ 60-65 (discussing alcohol ignition interlocks and guidelines to protecting privacy).

NHTSA defines an EDR as “a device or function in a vehicle that records the vehicle’s dynamic, time-series data during the time period just prior to a crash event or during a crash event, intended for retrieval after the crash event.”¹⁴² Events that trigger the EDR to save such data can include sudden deceleration, air bag deployment, or manual activation by the driver.¹⁴³ Current automobile production models that incorporate this technology must record fifteen operating parameters. These parameters, which include elements such as vehicle speed, change in velocity, and driver seat belt status, are instrumental in accident investigation and air bag deployment.¹⁴⁴

Whether we know it or not, most of us are driving with EDRs: approximately eighty-five percent of current vehicles are equipped with an EDR.¹⁴⁵ NHTSA has recommended that all cars manufactured after September 1, 2010 be equipped with an EDR.¹⁴⁶ Still, how data from EDRs should be used, particularly as admissible evidence in both civil and criminal trials, is fiercely debated.¹⁴⁷ Typically, however, a challenge that asserts that the EDR does not meet the scientific standard for admissibility is unsuccessful.¹⁴⁸ Few cases have considered constitutional challenges

¹⁴² DOT HS 811 040, *supra* note 117, at 12.

¹⁴³ U.S. Dep’t of Transp., *A Report to Congress on Electronic Control Module Technology for Use in Recording Vehicle Parameters During a Crash*, 4 (Sept. 2001), <http://www.nhtsa.gov/DOT/NHTSA/NRD/Articles/EDR/PDF/Research/4thRpt2congr.pdf> [hereinafter DOT-MC-01-110].

¹⁴⁴ *Id.* at 14.

¹⁴⁵ In 2006, NHTSA estimated that eighty-five percent of vehicles would be equipped with EDRs. Event Data Recorders, 71 Fed. Reg. 50998, 51010 (Aug. 28, 2006) (codified at 49 C.F.R. pt. 563). “NHTSA estimated that about 64 percent of 2005 model passenger vehicles had the devices. By 2005, General Motors, Ford, Isuzu, Mazda, Mitsubishi, Subaru, and Suzuki were all voluntarily equipping all of their vehicles with EDRs, according to NHTSA. Recent information from vehicle manufacturers indicates that all new passenger vehicles have EDRs, although those EDRs may not include all of the data elements specified in the NHTSA rule.” *Q&As: Event Data Recorders*, INSURANCE INSTITUTE FOR HIGHWAY SAFETY, <http://www.iihs.org/research/qanda/edr.html#cite1> (last visited July 28, 2010).

¹⁴⁶ 71 Fed. Reg. 50998, 51025. Although EDRs are not mandatory, NHTSA has specified “uniform, national requirements for vehicles equipped with [EDRs] concerning the collection, storage, and irretrievability of onboard motor vehicle crash event data” for all vehicles manufactured after September 1, 2013. Event Data Recorders, 49 C.F.R. § 563.1 (2011). “It also specifies requirements for vehicle manufacturers to make tools and/or methods commercially available so that crash investigators and researchers are able to retrieve data from EDRs.” *Id.*

¹⁴⁷ See generally Andrew Askland, *The Double Edged Sword That Is the Event Data Recorder*, 25 TEMP. ENVTL. L. & TECH. J. 1, 4-14 (2006), available at <http://www.temple.edu/law/tjstel/2006/spring/v25no1-Askland.pdf>. Donald W. Garland & Carol M. Bast, *Is the Government Riding Shotgun? Recent Changes in Automobile Technology and the Right to Privacy*, 46 NO 2 CRIM. L. BULL. 295, 297-303 (2010).

¹⁴⁸ See *Commonwealth v. Zimmermann*, 873 N.E.2d 1215, 1220 (Mass. App. Ct. 2007) (holding that the admission of EDR data was proper because the prosecution’s expert was “amply qualified as an expert, had conducted 200 tests on EDRs, had taught and published on the subject, and had testified as an expert on EDRs in other States; that the technology behind the EDR had been known for many years; that he and others had tested the speed of motor

to the introduction of EDRs in criminal trials.¹⁴⁹ A concurring opinion from the Tennessee Criminal Court of Appeals in *State v. Holladay* argued that data seized under a warrantless search was admissible.¹⁵⁰ In *People v. Christmann*,¹⁵¹ the court held that after a fatal accident, an immediate download of EDR data does not violate the driver's constitutional rights.¹⁵² It is possible to say more conclusively that a defendant's Fifth Amendment self-incrimination challenge will likely be rejected.¹⁵³

vehicles by other methods to compare information provided by the EDRs and had found the EDRs to be reliable; that EDRs need no maintenance and calibration for ten years; and that his calculations based on the physical and other evidence in this case were consistent with the EDR data from the defendant's vehicle"); *New Jersey v. Shabazz*, 946 A.2d 626, 630-35 (N.J. Super. Ct. App. Div. 2005) (discussing in detail the reliability of EDR); *Matos v. Florida*, 899 So. 2d 403, 406-07 (Fla. Dist. Ct. App. 2005) (rejecting the defendant's argument that the EDR didn't meet the test from *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923)); *Bachman v. Gen. Motors Corp.*, 776 N.E.2d 262, 283 (2002) ("[W]e conclude that the trial court did not abuse its discretion by (1) finding that the process of recording and downloading SDM data is sufficiently established to have gained general acceptance in the relevant scientific community, and, thus, (2) determining that the *Frye* admissibility standard had been satisfied. This process is simply not the sort of method 'new to science that undeservedly create[s] a perception of certainty when the basis for the evidence or opinion is actually invalid.' Accordingly, we hold that the court did not err by allowing evidence regarding data downloaded from [driver's] SDM and related opinion testimony."); see *Garland & Bast*, *supra* note 147, at n. 31.

¹⁴⁹ *Garland & Bast*, *supra* note 147 ("The majority of criminal cases involving EDRs to date either did not involve a challenge by the defendant to the fact that no search warrant was obtained or there was a search warrant held to have been properly obtained."); Dorothy J. Glancy, *Retrieving Black Box Evidence in Criminal Trials*, CHAMPION MAGAZINE, May 2009, at 12, 15 ("It is difficult to find very many reported criminal cases in which EDR data has been introduced or excluded."). See, e.g., *Kirsch v. Texas*, 306 S.W.3d 738, 740-41 (Tex. Crim. App. 2010) (The defendant failed to challenge the use of information retrieved from a black box demonstrating that he had been driving 69 m.p.h. four seconds before a collision and 67 m.p.h. one second before the crash.); Lawrence E. Wines, *Understanding DUI Scientific Evidence: Leading Lawyers on Understanding New Forensic Science, Challenging Testing Procedures and Results, and Consulting Experts for Defense Arguments*, 2010 WL 1976218, 24 (2010).

¹⁵⁰ *Tennessee v. Holladay*, No. E2004-02858-CCA-R3-CD, 2006 WL 304685, at *7 (Tenn. Crim. App. 2006). The judge argued that the warrantless search fell under the warrant exception first established in *Carroll v. United States*, 267 U.S. 132, 149 (1925), because the defendant's car contained possible evidence of a crime: if the search and seizure without a warrant are made upon probable cause, that is, upon a belief, reasonably arising out of circumstances known to the seizing officer, that an automobile or other vehicle contains that which by law is subject to seizure and destruction, the search and seizure are valid. *Id.* The Tennessee Criminal Court of Appeals did not reach the merits of the suppression issue because it held that it lacked jurisdiction. *Id.* at 3.

¹⁵¹ *New York v. Christmann*, 776 N.Y.S.2d 437 (N.Y.S. 2004).

¹⁵² The Court found only a diminished expectation of privacy in the mechanical areas of the vehicle and further found that that expectation must yield to the overwhelming state interest in investigating fatal accidents. *Id.* at 441-42.

¹⁵³ See, e.g., *Shabazz*, 946 A.2d at 635.

The Fifth Amendment will only be violated where the evidence is testimonial.¹⁵⁴ The United States Supreme Court has held that blood tests, breath tests, and DNA tests are not testimonial because they do not require communication from the offender;¹⁵⁵ therefore, it is unlikely that retrieving data from the EDR will be considered testimonial in nature either.¹⁵⁶

Like it or not, when AIIDs are standard equipment, data loggers will be part of the package. If we drive with detectable levels of BAC, that evidence will be available.¹⁵⁷ Even if we are not legally drunk, but we cause an accident or drive recklessly, our vehicles will attest to our sobriety. The one thing we will not be able to do is drive drunk. If we accept the notion that we do not have the right to make ourselves or others unsafe when we drive and, further, that our ability to assess our sobriety is faulty, there is an alternative on the horizon - a sober piece of technology to make the call that we are too drunk to drive.

How long will the journey take to remove drunk driving from the roads? If DADSS completes its work on time, there is a long administrative process ahead before NHTSA approves the device for manufacturing. Even with the quickest passage, AIID-equipped cars may not be rolling off the line until well into the mid-2020s. And there is no guarantee that passage will be easy, or will escape political controversy. To the extent that DADSS has the support of manufacturers, the political road may stay smooth. But, not every constituency favors AIIDs. The American Beverage Institute,¹⁵⁸ for example, has already mounted a campaign charging that AIIDs on all cars would bring a “new prohibition” to the land.¹⁵⁹ The warning should read, “proceed with caution.”

V. A CAUTIONARY TALE

Assuming DADSS achieves its goal and identifies a passive AIID technology that will be feasible, effective, and affordable, the next step would be to submit the technology to the NHTSA for approval. On its face, the administrative process is

¹⁵⁴ *Doe v. United States*, 487 U.S. 201, 207 (1988) (citing *Fisher v. United States*, 425 U.S. 391, 409 (1976)); *United States v. Wade*, 388 U.S. 218 (1967); *Gilbert v. California*, 388 U.S. 263 (1967).

¹⁵⁵ *Schmerber v. California*, 384 U.S. 757, 763 (1966) (“[T]he prohibition of compelling a man in a criminal court to be witness against himself is a prohibition of the use of physical or moral compulsion to extort communications from him, not an exclusion of his body as evidence when it may be material.” (citing *Holt v. United States*, 218 U.S. 245, 252-53 (1910))).

¹⁵⁶ *Shabazz*, 946 A.2d at 635.

¹⁵⁷ According to the DADSS specifications, AIIDs will be able to detect and record BAC levels as low as .01. DADSS Performance Specifications, *supra* note 131, at 3.

¹⁵⁸ See generally AMERICAN BEVERAGE INSTITUTE, <http://www.abionline.org/> (last visited July 7, 2011).

¹⁵⁹ INTERLOCK FACTS, <http://www.interlockfacts.com/> (last visited Aug. 24, 2010). “The universal application of [AIIDS] will translate into a *de facto* Prohibition. . . Say goodbye to enjoying a glass of wine with dinner, a beer at a ball game, or a champagne toast at a wedding.” *Id.*

relatively straightforward.¹⁶⁰ When it comes to safety equipment for vehicles, however, NHTSA has found itself ensnared in a political traffic jam that slowed progress to a crawl. History does not bode well.

When the nation's highway death toll reached 50,000 annually in the 1950s, critics and consumers demanded safer automobiles.¹⁶¹ Individual states tried to respond to the nation's highway death toll crisis by mandating certain safety features for vehicles.¹⁶²

Because of the high number of deaths and injuries resulting from traffic accidents, Congress enacted the National Traffic and Motor Vehicle Safety Act of 1966 (NTMVSA) and the Highway Safety Act of 1966.¹⁶³ For over forty years, NHTSA has directed the highway safety and consumer programs that these Acts required.¹⁶⁴ Because of the difficulty in managing state-specific safety requirements, automobile manufacturers welcomed the establishment of an agency that would create uniform safety standards.¹⁶⁵

One of the first regulations the agency¹⁶⁶ promulgated was Federal Motor Vehicle Safety Standard (FMVSS) 208.¹⁶⁷ FMVSS 208 mandated installation of lap

¹⁶⁰ NHTSA must follow the Administrative Procedures Act specifications for notice, comment, and publication of proposed rules. *See generally* 5 U.S.C. § 553 (1981). The notice must include the nature of the rule, reference to the legal authority under which the agency acts, and means for commenting on the rule. § 553(b). After notice in the Federal Register, "the agency shall give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation." § 553(c). After the agency considers the information and concerns presented during the comment phase, it will publish the rule in the Code of Federal Regulations, and thirty days later it will become effective. § 553(d). However, Congress tightly monitors NHTSA's rule-making authority. Before a promulgated rule is published, Congress must review the rule. 5 U.S.C. § 801(a)(1)(A) (1996). When a rule is submitted, Congress will review the cost-benefit analysis conducted by NHTSA. § 801(a)(1)(B). In 1981, President Reagan was the first President to require a cost-benefit analysis. Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 19, 1981). President Clinton issued a new executive order regarding cost-benefit analysis that is still effective today. Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993). The purpose of the cost-benefit analysis is to ensure "a regulatory system that protects and improves [the American people's] health, safety, environment, and well-being and improves the performance of the economic without imposing unacceptable or unreasonable costs on society." *Id.*

¹⁶¹ Mike Davis, *The Great Safety Belt Interlock Fiasco*, THE DETROIT BUREAU (Nov. 30, 2009), <http://www.thedetroitbureau.com/2009/11/the-great-safety-belt-interlock-fiasco/>.

¹⁶² Davis, *supra* note 160.

¹⁶³ 15 U.S.C.A. § 1381 (1966), *repealed by* Pub. L. No. 103-272, § 7(b), 108 Stat. 1379 (1994).

¹⁶⁴ *About NHTSA*, NHTSA.GOV, <http://www.nhtsa.gov/About> (last visited June 22, 2010).

¹⁶⁵ Davis, *supra* note 161.

¹⁶⁶ Transportation Research Board, Special Report 278, *Buckling Up: Technologies to Increase Seat Belt Use*, 4 (2003), <http://onlinepubs.trb.org/onlinepubs/sr/sr278.pdf> (citing S.R. Kratzke, *Regulatory History of Automatic Crash Protection in FMVSS 208*, in SEAT BELTS: THE DEVELOPMENT OF AN ESSENTIAL SAFETY FEATURE 51 (Society of Automotive Engineers ed., 2003)).

¹⁶⁷ 49 C.F.R. § 571.208 (2011).

and shoulder belts in all new vehicles manufactured during or after 1968.¹⁶⁸ FMVSS 208 was among several safety standards initially promulgated by the agency.¹⁶⁹

¹⁶⁸ Transportation Research Board, *supra* note 166, at 4 (citing S.R. Kratzke, *Regulatory History of Automatic Crash Protection in FMVSS 208*, in SEAT BELTS: THE DEVELOPMENT OF AN ESSENTIAL SAFETY FEATURE 51 (Society of Automotive Engineers ed., 2003). Transportation Research Board, *supra* note 166, at 4 n.5.

¹⁶⁹ Title 49 of the United States Code, Chapter 301 authorizes NHTSA to promulgate safety standards. 49 U.S.C. § 301 (2011). These standards can be found in Title 49 of the Code of Federal Regulations, Part 571. See 49 C.F.R. § 571.101-500 (2011). NHTSA then issued nineteen subsequent standards, effective 1-1-68. Those standards still effective today include:

1. Standard No. 101: Controls and Displays. This standard requires that essential controls be located within the reach of the driver when the driver is restrained by a lap belt and upper torso restraint, and that certain controls mounted on the instrument panel be identified.
2. Standard No. 102: Transmission Shift Lever Sequence, Starter Interlock, and Transmission Braking Effect. This standard specifies the requirements for the transmission shift lever sequence, a starter interlock, and for a braking effect of automatic transmissions, to reduce the likelihood of shifting errors, starter engagement with vehicle in drive position, and to provide supplemental braking at speeds below 40 km/h (25 mph).
3. Standard No. 105: Hydraulic and Electric Brake Systems. This standard specifies requirements for vehicles equipped with hydraulic and electric service brake systems and associated parking brake systems to ensure safe braking performance under normal conditions and emergency conditions.
4. Standard No. 106: Brake Hoses. This standard establishes performance and labeling requirements for hydraulic, air, and vacuum brake hoses, brake hose assemblies, and brake hose fittings for all motor vehicles. The purpose of this standard is to reduce brake system failure from pressure or vacuum loss due to hose or hose assembly rupture.
5. Standard No. 108: Lamps, Reflective Devices, and Associated Equipment. This standard specifies requirements for original and replacement lamps, reflective devices, and associated equipment. Its purpose is to reduce traffic crashes and deaths and injuries resulting from traffic crashes, by providing adequate illumination of the roadway, and by enhancing the conspicuity of motor vehicles on the public roads so that their presence is perceived and their signals understood, both in daylight and in darkness or other conditions of reduced visibility.
6. Standard No. 109: New Pneumatic Tires. This standard specifies tire dimensions and laboratory test requirements for bead unseating resistance; strength, endurance, and high-speed performance; defines tire load rating; and specifies labeling requirements.
7. Standard No. 111: Rearview Mirrors. This standard specifies requirements for the performance and location of inside and outside rearview mirrors. Its purpose is to reduce the number of deaths and injuries that occur when the driver of a motor vehicle does not have a clear and reasonably unobstructed view to the rear.

8. Standard No. 116: Motor Vehicle Brake Fluids. This standard specifies requirements for fluids for use in hydraulic brake systems of motor vehicles, containers for these fluids, and labeling of the containers. The purpose of this standard is to reduce failures in the hydraulic braking systems of motor vehicles which may occur because of the manufacture or use of improper or contaminated brake fluid.

9. Standard No. 201: Occupant Protection in Interior Impact. This standard specifies performance requirements to provide head impact protection for occupants. Provides requirements for instrument panels, seat backs, sun visors, and arm rests. Interior compartment doors are required to remain closed during a crash.

10. Standard No. 203: Impact Protection for the Driver from the Steering Control System. This standard specifies requirements for minimizing chest, neck, and facial injuries by providing steering systems that yield forward, cushioning the impact of the driver's chest by absorbing much of his or her impact energy in front-end crashes. Such systems are highly effective in reducing the likelihood of serious and fatal injuries.

11. Standard No. 204: Steering Control Rearward Displacement. This standard specifies requirements limiting the rearward displacement of the steering column into the passenger compartment to reduce the likelihood of chest, neck, or head injuries.

12. Standard No. 205: Glazing Material. This standard specifies requirements for glazing materials for use in motor vehicles and motor vehicle equipment for the purpose of reducing injuries resulting from impact to glazing surfaces. The purpose of this standard is to ensure a necessary degree of transparency in motor vehicle windows for driver visibility, and to minimize the possibility of occupants being thrown through the vehicle windows in collisions.

13. Standard No. 206: Door Locks and Door Retention Components. This standard specifies requirements for side door locks and side door retention components including latches, hinges, and other supporting means, to minimize the likelihood of occupants being thrown from the vehicle as a result of impact.

14. Standard No. 207: Seating Systems. This standard establishes requirements for seats, attachment assemblies, and installation, to minimize the possibility of failure as a result of forces acting on the seat in vehicle impact.

15. Standard No. 208: Occupant Crash Protection. This standard originally specified the type of occupant restraints (i.e., seat belts) required. It was amended to specify performance requirements for anthropomorphic test dummies seated in the front outboard seats of passenger cars and of certain multipurpose passenger vehicles, trucks, and buses, including the active and passive restraint systems identified below. The purpose of the standard is to reduce the number of fatalities and the number and severity of injuries to occupants involved in frontal crashes.

16. Standard No. 210: Seat Belt Assembly Anchorages. This standard establishes requirements for seat belt assembly anchorages to ensure proper location for effective occupant restraint and to reduce the likelihood of failure. The requirements apply to any component, other than

Despite the well-documented benefits of seatbelts, they were not effective in reducing the national highway death toll because people were not wearing them -- over eighty percent of the public refused to wear them once they were installed¹⁷⁰ even though seatbelts could reduce the risk of fatal injury for front-seat passengers by as much as forty-five percent.¹⁷¹

Because NHTSA had no way of requiring people to wear seatbelts, it responded to public resistance by requiring automobile manufactures to install "passive restraint systems," which primarily focused on airbags, but also included automatic belt systems.¹⁷² In 1972, NHTSA required automobile manufacturers to install an alternative to passive restraint systems, such as a buzzer-light seatbelt reminder system.¹⁷³

Frustrated by technological delay and lack of public cooperation with seatbelts, NHTSA issued a rule, effective August 15, 1973, requiring that all 1974 model automobiles be equipped with a seatbelt ignition interlock device (SIID).¹⁷⁴ Its demise was swift.

Design flaws quickly emerged.¹⁷⁵ Strong public outcry against the mandate followed. Many learned to disable the system, while others complained to state

the webbing or straps, involved in transferring seat belt loads to the vehicle structure.

17. Standard no. 301: Fuel System Integrity. This standard specifies requirements for the integrity of motor vehicle fuel systems. Its purpose is to reduce deaths and injuries occurring from fires that result from fuel spillage during and after motor vehicle crashes.

49 C.F.R. 571.101-102, 105-106, 108109, 111, 116, 201, 203-208, 210, 301 (2011).

¹⁷⁰ Richard J. Pierce, Jr., *What Factors Can an Agency Consider in Making a Decision?*, 2009 MICH. ST. L. REV. 67, 74 (2009).

¹⁷¹ Charles J. Kahane, *Fatality Reduction by Automatic Occupant Protection in the United States*, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, 1 (1994), <http://www-nrd.nhsta.dot.gov/Pubs/94S5O08.pdf>.

¹⁷² Transportation Research Board, *supra* note 166, at 4 (citing Kratzke, S.R. 1995. *Regulatory History of Automatic Crash Protection in FMVSS 208*. SAE Technological Paper 950865. International Congress and Exposition, Society of Automotive Engineers, Detroit, Mich., Feb. 27-Mar. 2, at 1).

¹⁷³ *Id.* When the driver started the vehicle, the buzzer-light system had to beep and flash for at least one minute, continuously. To deactivate the sound and light, the driver only had to extend the driver's seatbelt. *Id.* at 42-43. Transportation Research Board, *supra* note 166, at 42 (citing L.S. Robertson, *Safety Belt Use in Automobiles with Starter-Interlock and Buzzer-Light Reminder Systems*, 65 AM. J. OF PUB. HEALTH 1319, 1320). Transportation Research Board, *supra* note 166, at 43 (citing A. Westefelt, A. and B.M. Phillips, *Effectiveness of Various Safety Belt Warning Systems*, DOT-HS-801-957 (July 1976), <http://ntl.bts.gov/lib/25000/25400/25428/DOT-HS-801-953.pdf>).

¹⁷⁴ 37 Fed. Reg. 3911 (1972). If the seatbelt was unfastened after the car had been started, an alarm would sound to warn the passenger to re-fasten the seatbelt. If the seatbelt was unfastened after the car had been started, an alarm would sound to warn the passenger to re-fasten the seatbelt. Transportation Research Board, *supra* note 166, at 43.

¹⁷⁵ For instance, any object weighing enough in the front seat triggered the IID. In addition, there were times when drivers had legitimate reasons not to initially fasten their

representatives.¹⁷⁶ Consequently, in 1974, just one year after the SIID mandate became effective, Congress enacted legislation prohibiting NHTSA from requiring SIIDs and buzzer systems lasting for more than eight seconds.¹⁷⁷ As of 1975, vehicles are only required to have a warning light reminding the driver to fasten his or her seatbelt, which is activated when the car is started and also a chiming alarm that lasts up to eight seconds or until the driver fastens the seatbelt.¹⁷⁸ Seatbelt IIDs, if not dead, will not be a front-line weapon for the foreseeable future.¹⁷⁹

It was not until 1984 that NHTSA initiated a nationwide effort to increase seatbelt use through state-based seatbelt laws, and issued regulations requiring seat belts in all newly manufactured vehicles by 1990.¹⁸⁰ As of 1983, no state had seatbelt laws.¹⁸¹ Perhaps the powers-that-be believed, correctly, as it turned out, that energy would be much better spent changing public perceptions about seatbelt usage. NHTSA was joined by the automobile industry's "Traffic Safety Now," a large-scale lobbying campaign to encourage states to pass seatbelt-use laws.¹⁸² The campaign ended in 1993, when ninety-three percent of the country's population was subject to buckle-up laws.¹⁸³ In addition to the car industry campaign, NHTSA also launched "Operation Buckle Down" in 1990.¹⁸⁴ The "Click It or Ticket" campaign,¹⁸⁵ considered the "cornerstone" of NHTSA's seatbelt communications program, has undoubtedly contributed to the nation's eighty-four percent seatbelt usage rate.¹⁸⁶

seatbelts; for instance, some drivers complained that they could not turn around to back up with the seatbelt fastened. Davis, *supra* note 161.

¹⁷⁶ Transportation Research Board, *supra* note 166, at 5.

¹⁷⁷ 15 U.S.C. § 1410b(b)(1)(B) (1988), repealed by Pub.L. 103-272, § 7(b), July 5, 1994, 108, stat. 1379.

¹⁷⁸ Transportation Research Board, *supra* note 166, at 43.

¹⁷⁹ In 2003, the Transportation Research Board stated, "At this time, the committee does not see any compelling need to delete the prohibition on requiring interlock systems." Transportation Research Board, *supra* note 166, at 12.

¹⁸⁰ 49 C.F.R. § 571.208 (1992); *see* Kahane, *supra* note 171, at 1.

¹⁸¹ But ten years later, forty-five states, Puerto Rico, and Washington D.C. had passed them. Kahane, *supra* note 171, at 1.

¹⁸² Transportation Research Board, *supra* note 166, at 49.

¹⁸³ Transportation Research Board, *supra* note 166, at 49.

¹⁸⁴ The campaign, which lasted until 1992, sought to encourage local law enforcement to enforce seatbelt laws. *Id.* at 50.

¹⁸⁵ This federal funded program modeled after Canada's comprehensive program, Canadian Selective Traffic Enforcement, was first introduced in North Carolina in 1993. Transportation Research Board, *supra* note 166, at 50 (citing P.W. Haseltine, *Seat Belt Use in Motor Vehicles: The U.S. Experience*, in 2001 SEAT BELT SUMMIT, Automotive Coalition for Traffic Safety, Inc., Jan. 11-13). Today, most states administer an annual month-long "Click It or Ticket" campaign in May or November, warning motorists or heightened policing of seatbelt violations. Transportation Research Board, *supra* note 166, at 50 (citing U.S. DOT, NHTSA Launch "Click It or Ticket" Seat-Belt Campaign, 103 AASHTO JOURNAL 16).

¹⁸⁶ *Click It or Ticket*, NHTSA.GOV, <http://www.nhtsa.gov/CIOT> (last visited June 22, 2010).

The campaign involves more than 10,000 police agencies, and is supported by \$8 million in national advertising.¹⁸⁷

There is a flip side to this ostensible success story: even with an eighty-four percent seatbelt use rate, forty-five million Americans still do not buckle up.¹⁸⁸ Apparently, some of us are resistant to advertising. The message either does not permeate or is ignored. Some people are willing to “roll the dice” and drive “unclicked.” They are confident they will not get stopped, or they are tacitly willing to suffer the consequences of a seatbelt violation. Or, possibly, they believe that driving off in the car without taking the time to buckle up is more important than complying with seatbelt laws. In short, if standard safety equipment can be ignored, to some extent it will be.

Without seatbelt interlocks, we are forced to accept a certain degree of civil disobedience. As long as a driver can operate a vehicle without buckling up, eliminating violations is impossible. Given current compliance levels, however, there is reason to hope that the NHTSA initiatives will continue to lower the risk that unbuckled vehicle occupants will be unnecessarily injured in a collision.

When it comes to drunk driving, of course, the risk extends well beyond the vehicle occupants. Given current compliance levels, there is still a long road to travel before drunk drivers are off the road. Any plan to increase public acceptance of AIIDs must accept that public resistance to using safety equipment takes a long time to overcome. And, public resistance is not limited to using safety equipment that requires time-consuming tasks for the vehicle occupants. Even airbags, which do not require driver manipulation to operate, were objectionable.¹⁸⁹

Nonetheless, no one can seriously argue that advertising has not had an impact on getting folks to use seatbelts. The public relations goal has been to make buckling up as automatic as turning the key in the ignition. To a great degree, the ploy has worked. There is some reason to hope that a public awareness campaign to promote AIID use will have similar success.¹⁹⁰

¹⁸⁷ The ads, which air on television, radio, and online, in English and Spanish, are designed to increase awareness of the increased enforcement efforts and the increased chance of getting a ticket if you are not buckled up. *U.S. DOT Targets 45 Million Americans Still Not Buckling Up*, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., <http://www.nhtsa.gov/PR/DOT-101-10> (last visited Oct. 14, 2010).

¹⁸⁸ NAT'L HIGHWAY TRAFFIC SAFETY ADMIN, *supra* note 187.

¹⁸⁹ The public quickly lost confidence in the airbag due to the number of deaths or severe injury experienced by infants and young children who occupied the front-right passenger seat. Bryon Block, *The Tragedy of Airbag Fatalities to Children and Short Drivers, and How to Reduce the Hazard*, AUTOSAFETYEXPERT.COM, <http://www.autosafetyexpert.com/Assets/Docs/article-airbagdefects.pdf> (last visited Oct. 22, 2010). Additionally, “[f]rom the time NHTSA began to consider whether to require air bags or similar passive restraints, elements within the auto industry resisted. Automobile industry executives went so far as to meet secretly with President Richard M. Nixon in 1971 to urge him to call a halt to the efforts by NHTSA to force manufacturers to include air bags in their vehicle.” Ralph Nader & Joseph A. Page, *Automobile-Design Liability and Compliance with Federal Standards*, 64 GEO. WASH. L. REV. 415, 435 (1996).

¹⁹⁰ Surveys conducted by MADD found that there is public support for devices as punishment: sixty-five percent for mandatory installation for first time offenders and eighty-five percent of the public support it for repeat offenders. Dewey-Kollen & Downes, *supra* note 19, at 18.

VI. IN THE MEANTIME

Even if AIID-equipped cars are available by the mid-2020s, unequipped vehicles will still be used for many years to come: it takes approximately twenty years for a generation of cars to “die out.”¹⁹¹ As a result, drunk driving will continue to pose a law enforcement and public safety threat throughout most of the first half of the century. What role should current (after-market equipment) AIIDs play in the interim? Several approaches come to mind, which involve both the criminal justice system and the motor vehicle regulatory system.

One regulatory approach recommended here is to require installation of AIIDs on commercial vehicles, especially those used for public transportation, public safety, and shipping of potentially dangerous or toxic materials. Sadly, we have known our share of commercial vehicle tragedies where the operator’s sobriety was at issue.¹⁹² Yet, just because we have not tried that approach in this country, does not mean others have not. Sweden’s example is worth considering.

In 2000, the Swedish Road Administration (SRA), starting with three companies - a bus, a taxi, and a truck company - funded installation of 100 AIIDs into 100 vehicles of each company. The goal was to gradually introduce AIIDs for all commercial use and, over time, other buses, taxis, and truck companies were included.¹⁹³ Initially, Sweden planned to require all new trucks and buses to be equipped with AIIDs by 2010.¹⁹⁴ Currently, Sweden requires AIIDs for all vehicles purchased for government agencies, and requires that private contractors working for the government equip AIIDs on any truck weighing over 2.5 tons.¹⁹⁵ Many other commercial employers have voluntarily adopted programs.¹⁹⁶ Of the 200,000 commercial vehicles in Sweden, which includes heavy good vehicles, buses, taxis, and some light trucks and company cars, it is estimated that 60,000 are equipped with AIIDs.¹⁹⁷ Significantly, there has been widespread public support for these

¹⁹¹ See Don Pickrell & Paul Schimek, U.S. DOT Volpe Center, *Trends in Personal Motor Vehicle Ownership and Use: Evidence from the Nationwide Personal Transportation Survey*, at 20-21 (Apr. 23, 1998), available at <http://nhts.ornl.gov/1995/Doc/Envecon.pdf> (demonstrating with Figure 6 that the majority of household vehicles are between three and ten years old and that after twenty years, a vehicle is almost obsolete).

¹⁹² The most notable example involved the Exxon Valdez, a supertanker carrying 53 million gallons of crude oil which ran aground on Bligh Reef, tearing the hull open, and spilling 11 million gallons of crude oil into the Prince William Sound. *Exxon Shipping v. Baker*, 129 S.Ct. 2605, 2612 (2008). Eleven hours after the spill, the Coast Guard administered a BAC test on Captain Joseph Hazelwood, which reported .061 blood-alcohol level. *Id.* at 2613. Experts testified that “to have this much alcohol in his bloodstream so long after the accident, Hazelwood at the time of the spill must have had a blood-alcohol level of around .241.” *Id.*

¹⁹³ Robertson & Vanlaar, *supra* note 55, at 54.

¹⁹⁴ And on all new cars by 2012. European Transport Safety Council, *supra* note 40, at 28.

¹⁹⁵ European Transport Safety Council, *supra* note 40, at 29.

¹⁹⁶ European Transport Safety Council, *supra* note 40, at 29.

¹⁹⁷ This number continues to increase, making suppliers “hard pressed to keep up with the demand.” European Transport Safety Council, *supra* note 40, at 29.

efforts.¹⁹⁸ Overall, most drivers experienced very little interference with routine driving responsibilities from the AIIDs.¹⁹⁹ Skelleftea, one of the cities that hosted a portion of the pilot program, reported “[T]he municipality is very pleased with the use of [AIIDs]. . . . There is a wide acceptance and understanding among staff. . . . There is also a political consensus that [AIIDs] are needed and the public strongly supports the use of this technology.”²⁰⁰

In this country, there has been growing concern about the safe operation of commercial vehicles.²⁰¹ In 1995, for example, 376,000 large trucks (gross vehicle weight rating greater than 10,000 pounds) were involved in traffic crashes in the United States; 4453 were involved in fatal crashes. One out of nine traffic fatalities resulted from a collision involving a large truck.²⁰² The percentage of large truck drivers involved in fatal crashes who were intoxicated, with BAC levels of 0.10 or higher, was 1.3 percent in 1995.²⁰³

Numerous efforts aimed at improving commercial vehicle driver safety have been adopted.²⁰⁴ Equipping trucks, buses, taxis, ambulances, and government vehicles with AIIDs would make it impossible to turn those vehicles into weapons of mass destruction.

Another recommendation for effective deployment of current after-market AIIDs would expand New Mexico’s approach of requiring all offenders, particularly first

¹⁹⁸ European Transport Safety Council, *supra* note 40, at 24. Also, a survey conducted in Norway revealed that sixty-nine percent of passengers would accept delays due to technical problems with interlock devices if Norway implemented a commercial interlock program. However, only thirty-four percent of those surveyed would be willing to accept a price increase. European Transport Safety Council, *supra* note 40, at 24.

¹⁹⁹ European Transport Safety Council, *supra* note 40, at 24. Single evaluation studies revealed that “[t]he drivers no longer felt that alcohol interlocks interfered in a negative way with their role as a driver, notwithstanding the long warming-up period in the wintertime.” European Transport Safety Council, *supra* note 40, at 29.

²⁰⁰ Robertson & Vanlaar, *supra* note 55, at 56.

²⁰¹ U.S. Dep’t of Transp., Nat’l Highway Traffic Safety Admin., *Commercial Motor Vehicle Traffic Enforcement – Targeting Crash-Causing Violations* (2002), http://www.nhtsa.gov/people/injury/enforce/cvm/CMV_targeting.html.

²⁰² Nat’l Highway Traffic Safety Admin., *Large Trucks Traffic Safety Facts 1995*, NHTSA.GOV, <http://www.nhtsa.gov/people/ncsa/FactPrev/trkfacts.html> (last visited Oct. 7, 2010). A total of 4903 people died (twelve percent of all the traffic fatalities reported in 1995) and an additional 116,000 were injured in those crashes. *Id.*

²⁰³ Intoxication rates for drivers of other types of vehicles involved in fatal crashes in 1995 were 19.2 percent for passenger cars, 22.4 percent for light trucks, and 29.1 percent for motorcycles. *Large Trucks Traffic Safety Facts*, *supra* note 202.

²⁰⁴ See, e.g., U.S. Dept. of Transp. & Nat’l Highway Traffic Safety Admin., DOT HS 809 883, *Assessment of Truck Driver Distraction Problem and Research Needs* (2005), available at <http://www.nhtsa.gov/DOT/NHTSA/NRD/Multimedia/PDFs/Human%20Factors/Reducing%20Unsafe%20behaviors/DOT%20HS%20809%20883.pdf>; Battelle Center for Human Performance and Safety, *Integrated Vehicle-Based Safety System Heavy Truck Driver Vehicle Interface (DVI) Stage 1 Jury Drive Protocol* (2007), <http://www.nhtsa.gov/DOT/NHTSA/NRD/Multimedia/PDFs/Crash%20Avoidance/2007/04%20-%20IVBSS%20HT%20DVI%20Stage%201%20Jury%20Drive%20Protocol.pdf>.

offenders, to drive with an AIID-equipped vehicle.²⁰⁵ New Mexico attempts to address recidivism, once offenders complete the term of probation when they must use an AIID, cannot be ignored. New Mexico provides for a *lifetime* AIID order only for a fourth or fifth conviction. But by then, it is way too late -- for both the public safety and for the offender. Given the grisly statistics of the carnage that even first-time offenders leave on the roads, a more targeted legal punch is needed to keep offenders forever off the roads if they are impaired. The better approach would be to “decriminalize” drunk driving in favor of a stronger restriction on an offender’s driver’s license.

The recommendation here is that *all* first-time offenders be diverted out of the criminal justice system, and that motor vehicle departments (DMVs) be given the mandate to impose up to a *lifetime* AIID requirement, which would be a noted restriction on the offender’s driver’s license.²⁰⁶ The DMV would retain the authority to remove the AIID restriction and restore full driving privileges after a minimum period of five years, upon a showing that the offender has completed an alcohol treatment program, and has not been involved in any criminal conduct where alcohol was involved.

The most obvious advantage of this approach would be the elimination of recidivism among first-time offenders. Additionally, all the costs of prosecution, and especially probation supervision, would be avoided if the consequence of drunk driving automatically led to driving restrictions. As with all moving violations, once a state’s DMV is notified of the ticket, license restrictions can be imposed. Driving privileges are typically suspended until the driver provides proof of compliance with the restriction. For drunk driving, offenders would be required to provide proof that they have an AIID-equipped vehicle to obtain or renew a driver’s license. To the extent that criminal prosecution has a deterrent effect on the recalcitrant drinking driver, driving in violation of the AIID license restriction could be met with harsher penalties.

Granted, the cost of lifetime AIID operation would be substantial, but if a first-time offender is never convicted of drunk driving, the back-breaking cost of SR-22 insurance would be avoided.²⁰⁷ Further, once AIID-equipped vehicles are available, an offender would no longer incur the costs of after-market AIID operation. In the meantime, the indignity, stigma, and lost productivity caused by a conviction would no longer plague a first-time offender whose crime has been to misjudge his or her sobriety. The possibility that full license privileges could be restored after a minimum five-year period would protect the offender whose initial drunk driving incident was not the culmination of chronic misjudgments.

²⁰⁵ See *supra* notes 98-109 and accompanying text. MADD also supports this recommendation. *In-Car Breathalyzers*, MADD, <http://www.madd.org/drunk-driving/campaign/ignition-interlock.html> (last visited Oct. 15, 2010). See also *Guide to Community Preventive Services – Reducing Alcohol-Impaired Driving: Ignition Interlocks*, THE COMMUNITY GUIDE, <http://www.thecommunityguide.org/mvoi/AID/ignitioninterlocks.html> (last visited Oct. 18, 2010).

²⁰⁶ Offenders whose driving causes property damage, personal injury, or endangerment, would still face other criminal charges (from reckless driving to vehicular manslaughter).

²⁰⁷ See *supra* note 34 and accompanying text.

Some would argue that lifetime license restriction would violate the prohibition against cruel and unusual punishment.²⁰⁸ Yet, courts have routinely rejected the argument that an extended license suspension constitutes cruel and unusual punishment.²⁰⁹ Statutes that provide for a *lifetime* license suspension upon conviction of a drunk driving offense have also withstood constitutional challenge.²¹⁰ Under the proposed recommendation, which would not result in a conviction, any constitutional challenge to a lifetime AIID restriction holds even less weight.

The final suggestions for interim AIID use to deter drunk driving concern the public relations campaign that must take place to pave the way for acceptance of AIIDs as standard equipment.²¹¹ As noted previously, consumer breathalyzers are

²⁰⁸ The Eight Amendment of the United States Constitution guarantees that “[e]xcessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.” U.S. CONST. amend. VIII.

²⁰⁹ See, e.g., *Heninger v. Charnes*, 613 P.2d 884 (Colo. 1980) (holding that a five year suspension of the defendant’s driver’s license after three DUI convictions was not cruel and unusual punishment). Based on prior jurisprudence, the Colorado Supreme Court reasoned that license revocations are “remedial action[s] designed to assure the general public safety in the use of its highways.” *Id.* at 889. Further, the revocation cannot be characterized as “grossly excessive, nor was it arbitrarily imposed in a severe or cruel manner.” *Id.* Similarly, in *Yeargin v. South Carolina Dep’t of Highways and Public Transp.*, 438 S.E.2d 234, 236 (S.C. 1993), the South Carolina Supreme Court held that cruel and unusual punishment clause was not applicable to extended license suspension because the suspension was proportion to the severity of the crimes: “The length of each of respondent’s license suspensions are not disproportionate to the individual DUI and DUS [driving under suspension] convictions. The fact that the suspensions . . . constitute a substantial period of time is due to respondent’s repeated violations of the law.” *Id.* Likewise, a Pennsylvania court rejected the offender’s cruel and unusual punishment challenge for a seven-year license revocation after four convictions of drunk driving. *Yeckley v. Commnw. Dep’t of Transp.*, 474 A.2d 71, 72 (Pa. Commw. 1984). *Id.* See also *Owens v. State*, 382 N.E.2d 1312 (Ind. Ct. App., 1978) (holding that a ten year license suspension under the Habitual Traffic Offenders Statute did not violate the cruel and unusual punishment clause); *Dragowski v. Commonwealth*, 503 A.2d 104 (Pa. Commw. 1986) (holding a cruel and unusual punishment challenge insufficient for a five year license revocation under a habitual traffic offender statute); *Constitutionality of a Specialty License Plate for DUI Offenders*, No. 04-11, slip op. (Tenn. A. G. 2004) (rejecting an Eight Amendment challenge against a law requiring a person convicted of drunk driving to have a special license plate indicating that the offender was convicted).

²¹⁰ See *State v. Myers*, 411 N.W.2d 402 (S.D. 1987), which upheld a lifetime license suspension against an Eighth Amendment challenge: “This court will not extend an Eighth Amendment proportionality analysis to that part of a felony sentence which consists in the lifetime revocation of a driving privilege. . . . Revocation of Myers’ driver’s license was done for the protection of the public and not merely for the purpose of enhancing his punishment.” Similarly, in *State v. Ringler*, No. 09-COA-008, slip op. (Ohio Ct. App. 2009), the Court held “a lifetime driver license suspension . . . is not so grossly disproportionate to the offense as to shock the sense of justice in the community.” See also, *Cormier v. Commissioner of Motor Vehicles*, 938 A.2d 1258 (Conn. App. Ct. 2008); *Shaw v. Vermont Dist. Court, Unit No. 3, Franklin Circuit*, 563 A.2d 636 (Vt. 1989); *State v. McGuire*, 188 P.3d 425 (Or. Ct. App. 2008), all upholding lifetime license suspension against challenges under the Equal Protection Clause (U.S. CONST. amend XIV, § 1).

²¹¹ DADSS has a long range public relations plan to promote acceptance of AIID-equipped vehicles. Ferguson Presentation (2009), *supra* note 129, at 43. DADSS has received an

currently available for purchase.²¹² What is recommended here is substantial funding for public service announcements and other advertising to encourage the use of consumer breathalyzers. Many bars have installed breathalyzers for customer use.²¹³ A further recommendation is for development of incentives to encourage drinking establishments to install breathalyzers and direct customers to use them. For example, dram shop liability insurance premiums could be reduced for drinking establishments that install breathalyzers.²¹⁴

In general, law enforcement and MADD do not endorse consumer breathalyzers, because they are (allegedly) imprecise, which might lead to a false sense of security. Both MADD and law enforcement recommend the alternative of finding a sober driver.²¹⁵ Not everyone agrees that consumer breathalyzers should be discouraged. For example, Don't Die Drunk, a nonprofit organization fighting to reduce drunk driving accidents, advocates their use and placement in establishments that serve alcohol.²¹⁶ This makes imminent sense. The best way to get the public used to the idea of AIID-equipped cars is to increase the presence and voluntary use of breathalyzers in daily life. Getting folks to voluntarily purchase and use breathalyzers to check their own sobriety could go a long way toward overcoming resistance to a pre-market AIID-equipped vehicle.

additional \$250,000 in funding to support its public awareness efforts. Ferguson Interview, *supra* note 138.

²¹² See *supra* note 70 and accompanying text.

²¹³ See generally *Breathalyzers: No Longer Just a Tool for Police*, ALCOHOLALERT.COM, <http://www.alcoholalert.com/breathalyzers-1.html> (last visited Oct. 8, 2010). See *Coin/Bill Operated Vending Breathalyzer Machine*, ADVANCED SAFETY DEVICES, <http://www.safety-devices.com/alcoscan-al3500-coin-bar-breathalyzer.htm> (last visited Oct. 8, 2010) (displaying vending breathalyzer machine for sale).

²¹⁴ Dram shop laws establish the liability of establishments arising out of the sale of alcohol to visibly intoxicated persons or minors who subsequently cause death or injury to a third party as a result of alcohol-related car crashes and other accidents. Dram shop insurance provides protection for dispensers of alcoholic beverages against suits arising out of bodily injury and/or property damage caused by its customers to a third party. Establishments covered include bars, restaurants, hotels, motels, or wherever alcoholic beverages are dispensed. These claims are excluded from coverage under general liability insurance. See generally *Drunk Driving and Dram Shop Laws*, ALCOHOLALERT.COM, <http://www.alcoholalert.com/drun-driving-dram-shop.html> (last visited Oct. 25, 2010).

²¹⁵ Barbara Harrington, state executive director of MADD, cautioned, "Some folks who drink are searching for that sweet spot between sobriety and being illegal at .08. But it doesn't make sense that a person can manage drinking by testing themselves and making a judgment based on test results." Cindy Atoji, *Personal Alcohol Testers: Worth the Price?*, THE BOSTON GLOBE, Dec. 23, 2007, available at http://www.boston.com/business/globe/articles/2007/12/23/personal_alcohol_testers_worth_the_price/. In addition, law enforcement discourages the use of consumer breathalyzers because the devices cannot be calibrated, rendering them less accurate. James Houram, *Personal Breathalyzer vs. the Cops*, NBC LOS ANGELES, <http://www.nbclosangeles.com/news/local-beat/PERSONAL-BREATHALYZERS-DO-THEY-WORK-80740347.html> (last visited Oct. 15, 2010).

²¹⁶ Its motto is "Breathalyzers are Prevention NOT Prosecution Tools!" DON'T DIE DRUNK, <http://www.dontdiedrunk.org/> (last visited Oct. 8, 2010).

Of course, people who do not drink and drive have no reason to use a consumer breathalyzer. For them, paying for AIIDs as standardized equipment may be a harder sell. Obviously, the cost will be inevitably passed onto the consuming public. But, the cost society already pays from the repercussions of drunk driving – medical expenses, property damage, lost productivity, strain on the legal and corrections system -- is borne equally among the drinking and non-drinking public. Paying for pre-market AIID-equipped cars only changes the point in time when society is charged the cost of drunk driving. Further, the cost would undoubtedly be less, particularly if the non-monetary impact of drunk driving (loss of loved ones, pain and suffering, etc.) is added to the mix. The response to non-drinkers who object to paying for AIID-equipped vehicles is to remind them that *no one* is invincible before the drunk driver's advance. Whether or not any given driver drinks or not is almost beside the point. As long as anyone can drink and drive, everyone is a potential victim. A parent's worst nightmare – a child killed by drunk driver, or a child-turned-killer from taking one drink too many – does not spare the non-drinker.

And, what about the young man I know who has completed probation? He hated every minute he had to breathe into a machine to start his car, not to mention the rolling retests when he had to repeat the whole process. He hated the embarrassment and humiliation he experienced as passengers -- co-workers, dates, family, and the children of friends – watched him. If he were still forced to blow into a breathalyzer because he had been slapped with a five year-to-lifetime interlock order, would his life be intolerably burdened? Would it matter that he has not had a drink in two years? Or, is it more important that after the interlock order was lifted, he was twice convicted of drunk driving? Had that interlock order remained in place, chances are he never would have driven drunk again. On his current record, with three drunk driving convictions to his name, no matter how he may have reformed his life, a DMV would be unlikely to lift a lifetime restriction, if that option were available. Until the day that AIID-equipped cars are on the market, the option to permanently keep offenders off the roads should be available. Eventually, offenders will be able to provide proof of purchase of an AIID-equipped vehicle and get their full license privileges restored. Hopefully, that day will come sooner rather than later.