

“SENSORY ALCOHOL DETECTING DEVICES”
THE ANSWER TO ELIMINATING DUI RELATED FATALITIES

by

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The Command College Futures Study Project is a FUTURES study of a particular emerging issue of relevance to law enforcement. Its purpose is NOT to predict the future; rather, to project a variety of possible scenarios useful for strategic planning in anticipation of the emerging landscape facing policing organizations.

This journal article was created using the futures forecasting process of Command College and its outcomes. Defining the future differs from analyzing the past, because it has not yet happened. In this article, methodologies have been used to discern useful alternatives to enhance the success of planners and leaders in their response to a range of possible future environments.

Managing the future means influencing it-creating, constraining and adapting to emerging trends and events in a way that optimizes the opportunities and minimizes the threats of relevance to the profession.

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SENSORY ALCOHOL DETECTION DEVICES
THE ANSWER TO ELIMINATE DRUNK DRIVING FATALITIES

Driving under the influence (DUI) is not a new problem. Social drinking and the consumption of alcohol continue to be a part of our societal engagements. It is part of many cultures and plays a significant role in numerous events. Spirits are consumed to toast the celebration of a new birth, of a death, sometimes at graduations, and almost always at weddings. So, it should not be surprising that about three in every ten Americans will be involved in an alcohol-related crash at some time in their lives.¹ According to Mothers Against Drunk Drivers (MADD), alcohol is society's legal, oldest and most popular drug.²

If there was a way to eliminate DUI fatalities, would you support it? There was a time this would have been the question, but the truth of the matter is the answers are already out there and readily available. More often than not you will hear people say clichés such as “If I knew then what I know now, I would have made different choices”. The shock from family members affected by an alcohol related DUI fatality will often relay a similar comment; I never thought it could happen to me. Unfortunately, it isn't until this happens that many citizens become actively involved in the passing of stricter laws and imposing higher penalties to the DUI drivers. Mothers Against Drunk Drivers (MADD) is a perfect example of victims who took an active role changing laws and

¹ National Highway Traffic Safety Administration. “The Traffic Stop and You: Improving communications between Citizens and Law Enforcement.” National Highway Traffic Safety Administration, March 2001, DOT HS 809 212.

² Mothers Against Drunk Driving, “A 2008 Summary of Statistics”, updated 09/10/07.

pursing stiffer penalties for those who choose to drink and drive. Certainly, the carnage perpetrated by drunk drivers is perhaps the greatest tragedy on our streets; one that can happen to any family.

Statistics

In 2006, 17,941 people were killed nationally in alcohol related crashes – an average of one almost every half hour.³ This translates to the loss of more than 144 lives senselessly lost due to drunk driving on the next three-day weekend.

In California, 1597 people lost their lives to DUI related collisions in 2006. This number includes drivers, passengers, pedestrians, bicyclists, and motorcyclists. There were 227 deaths for the age range of 0-20 years of age; this is an indication of parents burying their children. For the age range of 21-25 years, the total number of deaths was 300, and from age 26-50 years old, which would represent the average age of parents, the death total was 752. Finally, from the age of 51 and older, 318 lives were lost to DUI.⁴ It is sad to know that more American lives have been lost to DUI related crashes than in all the wars we have fought since 1776.⁵

One does not need to look too far or too hard to find someone who has been involved in a traffic collision where alcohol was a factor. The questions should be asked:

³ National Highway Traffic Safety Administration. 2006 Preliminary Fatality and Injury Assessments, 2007.
<http://www.nhtsa.dot.gov/portal/nhtsa_static_file_downloader.jsp?file=/staticfiles/DOT/NHTSA/NCSA/Content/PPT/810755.PDF>

⁴ <http://www.chp.ca.gov/switrs/index.html#section4>

⁵ MADD and the National Highway Traffic Administration (NHTSA)
http://www.stopdwi.com/impact_of_drunk_driving.html

What would a person be willing to pay to save the life lost in an alcohol related traffic fatality? The answer to this question may be Sensory Alcohol Detecting Devices.

Sensory Alcohol Detection Devices

Sensory Alcohol Detecting Devices (SADD) are devices installed in vehicles that do not allow the ignition to start if the driver has more than a certain amount of alcohol in their system. Mothers Against Drunk Driving (MADD) published “Stopping Drunk Driving Before It Starts: A Technological Solution” in 2007. The report’s executive summary states that people who have previous DUI convictions make up approximately one-third of the drunk driving problem in America. It also states that technology is available and has the potential to eliminate repeat drunk driving offenses.⁶ The alcohol ignition interlock is a technology specifically noted as having great promise in the effort to reduce the number of drinking drivers on our roadways. It is also the most prominent example of a Sensory Alcohol Detection Device (SADD).

Often, because the alcohol is consumed at parties or other celebratory events and contributes to the “festive” mood of the party, the drinker may not believe they have a drinking problem, nor do their family and friends. In fact, according to a 1995 national survey of drinking and driving attitudes, first time offenders arrested for drunk driving have driven under the influence of alcohol on an average of 88 times prior to being arrested.⁷

⁶ MADD, “Stop Drunk Driving Before It Starts: A Technological Solution, Executive Summary

⁷ Zador, Paul, Sheila Krawchuk, and B. Moore. (1997) “Drinking and Driving Trips, Stops by Police, and Arrests: Analysis of the 1995 National Survey of Drinking and Driving Attitudes and Behavior,” Rockville, MD: Estat, Inc, 1997.

Regardless if the DUI driver is a first offender or has numerous DUI's, the emotional impact and financial burden left for the families to deal with is devastating. Belva Howard lost her husband in 2002 by a man whose blood alcohol was three times the legal limit and had already been convicted for seven previous DUI arrests.⁸ Ms. Howard was left to raise her three daughters as a single parent and worry about how she was going to make ends meet. She eventually began working three jobs so she wouldn't lose her home. Poignantly, she reflected she would also be the one to walk her daughters down the aisle when they get married. This is only one of thousands of life changing stories resulting from DUI. The numbers are astonishing and all age groups are affected by the results of DUI.

The topic of "why" people put themselves in this position was posed to an expert panel convened in May 2008 to study the use Sensory Alcohol Detection Devices.⁹ The responses varied; a college student on the panel said, "My friends have driven home after parties and made it ok a bunch of times so they don't think anything of it". He continued by saying "sometimes it is just peer pressure and you don't think anything is going to happen". A senior citizen and member of the CA Highway Patrol's Senior Volunteer Program stated "I've seen people leaving family functions after drinking a few cocktails, but I figure they are adults and responsible for their own actions. They should know when they have had too much to drink. Besides, they would be offended if I tried to interject; it's really none of my business". Rather than relying on friends or family,

⁸ Larry Copeland, USA Today, "Drivers return to road after repeat DUIs"
<http://usatoday.printthis.clickability.com/pt/cpt?action=cpt&title=Drivers+return+to+road...>

⁹ Expert Panel Member Study, May 1, 2008, California Highway Patrol, 2434 Whipple Road, Hayward, CA

however, it would be much simpler to prevent the problem at its source: behind the wheel of the drinking driver's car. That is where we could all see SADDs in their best use.

Sensory Alcohol Detecting Devices (SADD)

The implementation of SADD is not a new concept. The use of breath testing (SADD) for preventative purposes have been under consideration since 1970; however, early vehicle breath testing devices were plagued by problems of reliability and circumvention.¹⁰ Once the technology was improved, the stage was set for the widespread usage of the modern ignition interlock system to eliminate repeat DUI offenses which are in use today. Interlock systems have been used as a condition of probation for drunk driving offenders after their driver's licenses have been reinstated.

As of 2006, 45 states, the District of Columbia and most Canadian provinces and territories require or allow some offenders to use interlocks.¹¹ In the late 1990's, Sweden utilized the Interlock system as an option for a convicted drunk driver to keep their drivers license. Currently eight states mandate or place high incentives for ignition interlocks for all persons convicted of DUI, this would include New Mexico, Arizona, Louisiana, Illinois, Washington, Nebraska, Alaska, and Colorado.¹²

This technology has proven to be effective in the fight against DUI. Studies show that the use of this technology has resulted in an average of 64% in the reduction of

¹⁰ Andrew Fulkerson, Court Review-Winter 2003, The Ignition Interlock System: An Evidentiary Tool Becomes a Sentencing Element.

¹¹ MADD (2006), State-by-State Alcohol Related Laws, www.madd.org/laws/

¹² Mothers Against Drunk Driving – Campaign to Eliminate Drunk Driving. <http://madd.org/Drunk-Driving/Drunk-Driving/Law.aspx?law=4>

repeat offenders.¹³ In Richmond, Va. On March 5, 2008, MADD sent out a press release titled “MADD Applauds Senate Passage of Lifesaving Drunk Driving Legislation”. This press release stated “Ignition interlocks are proven to be an effective tool in the battle against drunk driving. Studies have shown the devices are up to 90 percent effective in keeping both first-time and repeat offenders from recommitting the crime, as long as the interlock is installed on the vehicle. Because of their effectiveness, the devices have the potential to save more than 4,000 lives now lost in repeat drunk driving crashes annually.¹⁴ . With this data, the number of lives saved using SADD in all vehicles in a proactive manner instead of reactive would reach the thousands.

The good news is that the technology already exists to install SADD’s in all new vehicles to reduce, and ultimately eliminate, DUI-related fatal collisions. They have been tested and numerous upgrades have been done to ensure the device is functioning properly and the data is accurate. The device is fairly simple and not complicated and has proven to be effective.

With the effectiveness of this device, it would make sense to use SADD in a proactive form to prevent DUI from occurring in the first place. Along with the SADD’s currently on the market, there are other technologies emerging on the near horizon that can dramatically impact the number of drunk drivers. Some of these are still being tested while others are currently utilized by convicted DUI offenders as a condition of their driving privilege.

How do they work?

¹³ Mothers Against Drunk Driving – Campaign to Eliminate Drunk Driving.
<http://madd.org/Drunk-Driving/Drunk-Driving/Law.aspx?law=4>

¹⁴ <http://www.madd.org/Media-Center/Media-Center/Press-Releases/PressView.aspx?press=108>

The most popular SADD is an ignition interlock device. The ignition interlock system is typically a handheld device wired to a control unit under the dashboard of the vehicle into the vehicles ignition system. The driver of the vehicle must give a breath sample into the device prior to the vehicle starting. If the driver's breath sample is below the predetermined level the ignition will turn over and the vehicle will start. If the breath sample is determined to be over the predetermined level, the ignition will lock and the vehicle will not start. The ignition interlock is programmed to allow another attempt after a certain amount of time (usually 30 minutes) has elapsed.¹⁵

There are several safeguards built into the device. The driver must blow into the device in a specific pattern. It requires a particular breath pattern and will not accept someone just blowing into the device. The driver must also exhale in a particular manner (which requires some training), which would make it nearly impossible for someone without the training to be successful in starting the vehicle.¹⁶

There are also rolling retests. These retests can occur anywhere from 15 minutes to an hour from the time the driver has started the car. The rolling tests allow the driver ample time to pull over and complete the necessary test. If the driver chooses not to complete the test, or is not successful the computer device records the information and results in a violation for that period. According to a study provided by Hamilton County, those sentenced to alcohol ignition interlock devices 82% believe the system was

¹⁵ Ibid.

¹⁶ SmartStart of California: Nationwide Leader in Ignition Interlock.
http://smartstartofcalifornia.com/what_is_smartstart.html

successful in preventing them from drinking and driving. Additionally, 68% believed it was successful in changing their drunk driving habits.¹⁷

Success Rate

Studies of ignition interlock devices over a ten-year timeframe from 1993-2002 in North Carolina, West Virginia, New Mexico, Colorado and Illinois reflected consistent significant positive results. In North Carolina, the recidivism reduction rate of DUI drivers utilizing an ignition interlocking system resulted in a 68% average decrease in subsequent offenses, according to Author Popkin.¹⁸ Illinois reported a recidivism reduction rate of 81% in 2002¹⁹ in their "Illinois Ignition Interlock Evaluation".

On December 5, 2008, NBC's Los Angeles affiliate aired "DMV tout success of ignition interlocks".²⁰ The news story reported that in 2007 there were 67 thousand attempts to start cars by a person who had been drinking in New Mexico, which means that 67 thousand times ignition interlocks have prevented an intoxicated person from being able to start a vehicle and drive down the highways in New Mexico. According to National Center for Statistics and Analysis (NHTSA), in 2007, there were 494 alcohol impaired drivers involved in fatal crashes in New Mexico. This is a decrease from 572 in

¹⁷ Morse, BJ and DS Elliott. Hamilton county Drinking and Driving Study: 30 Month Report. Boulder, Colorado: University of Colorado 1990.

¹⁸ Popkin, CL et al. "An Evaluation of the Effectiveness of Interlock Systems in Preventing DWI Recidivism among Second-Time DWI Offenders. Alcohol, Drugs and Traffic Safety – T-92: Proceedings of the 12th Interlock Conference on Alcohol Drugs and Traffic Safety. Ed H-D Utzelmann, G Berghaus, G Kroj, 1992

¹⁹ Frank, JF et al. "Illinois Ignition Interlock Evaluation". Alcohol Drugs and Traffic Safety – T2002. Proceedings of the 16th International Conference on Alcohol, Drugs and Traffic Safety. Ed DR Mayhew and C Dussault, 2002.

²⁰ <http://video.aol.com/video-detail/dmv-touts-success-of-ignition-interlocks/827095876>

2006.²¹ Sixty seven thousand attempts to drive intoxicated deterred by SADD undoubtedly saved lives. This has drawn the attention of both advocates and our elected leaders.

Support

On April 9, 2008, a news conference was held in Los Angeles for a bill coauthored by Assembly Members Benoit, Blakeslee, DeSaulnier, Portantino, and Senator Cox, and supported by Assemblyman Mike Feuer (D-Los Angeles) that would require first time DUI offenders to install ignition lock devices in their cars.²² The ignition device would not allow a driver with an alcohol level of 0.03 percent and above to start the car.

On Thursday, March 27, 2008, Karina Rusk reported a story on KABC Channel 7, surrounding the proposal of a bill to crack down on first time drunk driving offenses. If the bill is passed, it would require Californians convicted of a DUI offense to install breathalyzers in their vehicle as a condition of driving. Assemblyman Todd Spitzer (R) of Orange was quoted as saying “We have the ability to put a police officer in the front seat of every single car in California.” Additionally, the California Highway Patrol and Mothers Against Drunk Driving are supporting the efforts to expand the use of in car breathalyzers.²³

2008 Assembly Bill No.2784 Introduced by Assembly Members Feuer, Carter, and Galgiani, with the principal coauthors Assembly Members Spitzer and Wolk and

²¹ National Highway Traffic Safety Administration (NHTSA) 2007 Traffic Safety Annual Assessment –Alcohol-Impaired Driving Fatalities. August 2008 www.nhtsa.gov

²² Mike Feuer, “Public Safety as priority”, Sherman Oaks Sun: 04/24/08

²³ <http://abclocal1.go.com/kgo/story?section=news/state&id=6046705>

Coauthors: Assembly Members Benoit, Blakeslee, DeSaulnier, and Portantio and Senator Cox introduce DUI ignition interlock as a condition for driving privileges. This would require all convicted drunk drivers, including those facing their first conviction, to install an interlock on their vehicle for a specified period of time in order to have their license reinstated.²⁴ The installation of the device is done by a certified installer from one of the many authorized companies. The cost to install ranges from \$70-150 and \$60-80 per month for monitoring and calibration.

It is time to take advantage of the success of SADD and utilize the technology in a proactive manner, rather than as a reactive tool for current DUI convictions. It needs to be a part of the safety equipment in every car, as common as a seatbelt. If SADD's were a part of standard equipment in vehicles in 2007, 3,974 lives could have been saved in California alone. Nationally, the number of lives saved could be an astonishing 41,059.²⁵

New Technology

There are numerous SADD's currently in use or nearing a market-ready state. Some of the Ignition Interlock Devices already in use are Smart Start®, Ignition Lock-Out (IID), LifeSafer™ Interlock, Guardian Interlock, and Sens-O-Lock(TM).²⁶ Along with these Ignition Interlock Devices, there are more on the way. According to www.freepatentonline.com, there were at least seven patent numbers issued to detecting devices being tested and manufactured.²⁷

²⁴ Assembly Bill No.2784, California Legislature – 2007-08 Regular Session

²⁵ NHTSA'S National Center for Statistics and Analysis. Traffic Safety Facts 2007 Data. www.nhtsa.gov.

²⁶ <http://www.google.com/search?hl=en&q+alcohol+sensor+ignition+locks>

²⁷ <http://www.freepatentonline.com/7413047.html>

In 2007, Nissan Motor Co. built a concept vehicle to showcase advances in alcohol detection. The two-part system featured a sensor on the shifter/transmission stalk that measures the alcohol content in sweat from the drivers hands and a “sniffer” that detects alcohol present in the cabin of the vehicle. According to Nissan, the sensor could disable the starter, or shut off the vehicle when coming to a complete stop. The National Highway Traffic Safety Administration and the Automotive Coalition for Traffic Safety recently decided to fund research into a “Driver Alcohol Detecting System for Safety” (DADSS). The goal is for the technology to be unobtrusive, inexpensive and maintenance free. The hopes are with the advancement of technology, this type of system will be mandatory in all vehicles by 2018.²⁸

With the advancement of technology and research, the “sniffer” is still out of range. It is still in the research stages with many unanswered questions and problematic issues to resolve. The question was posed “Should In-Car Alcohol Detection Systems Be Mandatory”? on a Toyota Tundra website,²⁹ allowing the public to provide input. The response was split, with about 50% support, while the other 50% either opposed or needed more information. There was a comment made by “Kaylie” on March 3, 2009 which stated “Maybe getting morons to stop drinking and driving – or outfitting cars with a breathalyzer and free alternate rides home – would work better”.³⁰

Perhaps stated too bluntly, but have truer words ever been said? The gravity of lifesaving efforts must be at the forefront for our legislators and the auto industry.

²⁸ <http://www.autospies.com/news/In-Car-Alcohol-Detectors-Mandatory-by-2018-29138/>

²⁹ <http://www.tundraheadquarters.com/blog/2008/04/28/should-in-car-alcohol-detection-syst...>

³⁰ <http://www.tundraheadquarters.com/blog/2008/04/28/should-in-car-alcohol-detection-syst...>
Kaylie/March3rd,2009@12:37pm

SADDs are a viable means by which to reduce the number of deaths attributed to drinking and driving. Now that we know what can be done, and how easy it may be to do it, isn't it time?

Conclusion

The time has come to embrace the new technology and garner support for legislation to implement SADD in California. Our State could become the model for the rest of the nation to implement similar legislation to save thousands of lives each year. We must call for legislation that allows the newer SADD's to be installed that locks the ignition at the faintest detection of an intoxicated driver. In a comprehensive program, we would be able to eliminate first-time offenders as well as those who have already come to the attention of the justice system.

The research on the effectiveness of SADD shows it will become as common as buckling up. Instead of finding ways to stop second and third DUI offenses from occurring, the focus must be to eliminate DUI before it occurs.