MyCarDoesWhat.org

The logo for the MyCarDoesWhat campaign, which is operated by the National Safety Council and the University of Iowa. Permission to reprint granted by the National Safety Council.

Understanding New Technologies in Today’s Car—MyCarDoesWhat?

Thomas J. Bukowski, Associate Digital Content Producer, National Safety Council

Car manufacturers and transportation safety officials share this common goal: Get passenger car drivers to their destination safely.

When drivers do not—and are injured or worse—both parties are invested in determining why. Car manufacturers want their vehicles to withstand crash impacts and like safety officials want to reduce deaths on the road. Further, the courts need as much information as possible to appropriately assign fault in a crash—be it person, machine, environment, or a combination of any of these items.

Accident or crash reconstruction is one of the ways that investigators can research what factors contributed to a crash. According to Professional Analysis and Consulting, Inc., crash reconstruction takes into consideration the circumstances of the crash (environment), the mechanics of the car (vehicle), and the driver’s behavior (human).

Crucial to an accurate understanding of what led to an incident are event data recorders. Manufacturers each use different names for the same type of componentry, commonly called Event Data Recorders (EDRs). Many modern event data recorders are capable of tracking dozens or more variables from steering and braking to airbag deployment. Current data recorders archive about five seconds of inputs before the crash occurred.

However, the advent of new car safety technologies, known as active safety systems, are changing how event data recorders are used to determine crash cause—forcing manufacturers, the courts and technology makers to keep up at a rapid pace.

Advances in vehicle safety technology

Active safety systems are in-vehicle technologies capable of warning drivers about hazards using alerts such as sound, haptic feedback, flashing icons and video streams. Some of the newest systems can even take over steering or braking to help with collision avoidance. A modern-day example includes automatic emergency braking, which can automatically slow or stop a car that is about to crash.

The sensors used by these features, which can include radar, digital imaging or even driver health data, have significantly expanded what event data recorders can track.

“Any vehicle system with a computer could be accessed eventually along with the related system information,” says Timothy M. Hicks, a licensed Professional Engineer and accident Reconstructionist with Professional Analysis and Consulting, Inc. “Additional information from active safety system sensors can improve the results of crash investigations by expanding the amount and types of data available,” he continued.

In some cases, active safety system data can even determine how the crash could have been avoided—providing key information for educators, judges and transportation safety organizations. Hicks, who have completed training from the Northwestern University Traffic Safety Institute on using event data recorders in accident reconstruction, notes that some recently released event data recorders are capable of tracking inputs from modern active safety systems. These include forward collision warning alerts, electronic stability control activation and others.

However, not all stakeholders in transportation safety agree on whether all types of active safety system inputs should be tracked by recorders, or even at all.

Current state of event data recorders

The most current regulatory standards as established in 2006 apply to cars manufactured on or after Sept. 1, 2012. All vehicles produced after this date must allow public accessibility to event data recorder information. That rule’s established variables can be found in 49 CFR 563. But beyond these variables, manufacturers and technology developers have control over which additional factors are tracked. Ideally, this would be any system in the car that could provide information that could be used in crash investigations, Hicks said.
But in reality, this is not necessarily the case. “Most manufacturers may be reluctant to do so since this information could potentially be used in litigation for alleged design defects or other performance issues related to the vehicle,” Hicks said.

This means that accident reconstructionists do not always have all possible information that could have been crucial to determining the cause of a crash. Hicks provided the example of a pedestrian detection system, which alerts drivers to the presence of people through audio or visual alerts. If a manufacturer does not allow inputs from pedestrian detection sensors to be recorded in its car’s event data recorders, then reconstructionists lose a key piece of information that could have easily helped determine cause.

Alternatively, if the detection system data is retrievable but the system reports that a pedestrian was not detected, manufacturers could be asked to determine why that occurred.

The manufacturer perspective

Manufacturers do truly care about how their cars respond during and before an event so they can continually improve their cars, notes Dr. Roch J. Shipley, Principal Engineer and President of Professional Analysis and Consulting, Inc. The firm conducts crash investigation research for manufacturers, courts and transportation agencies, among others.

Common questions are whether an active safety system was present; whether the driver has turned it on or off; and whether it was activated at the time of the crash. Generally, the more safety systems that present, active, and functioning properly at the time of a crash, the less likely that the cause of the crash was mechanical.

One of the firm’s engineers, James F. Lane, notes that while not having all possible safety system sensors represented in event data recorders reduces the data pool reconstructionists can use, event data recorders are not the only data set involved in crash reconstruction.

“Road conditions, weather, sometimes even feeds from roadside cameras, a lot goes into investigations other than onboard systems,” Lane said.

Automotive and engineering associations can provide best practices for what variables manufacturers should track Hicks notes. He is the vice chairman of the Chicago Section of the Society of Automotive Engineers (SAE), and serves on the SAE International Committee responsible for how event data recorders archive information.

However, the only way to fully standardize safety system data is through regulation, he adds. The National Highway Traffic Safety Administration proposed in late 2012 to require EDRs in all light vehicles; see Notice of Proposed Rulemaking.
Another issue affecting what safety system sensors are tracked by EDRs is concern over privacy. In one of many similar bills, a bill introduced in the U.S. Senate Committee on Commerce, Science and Transportation in early 2015 by Sen. John Hoeven (R-ND) and others, proposed to tighten regulations on the access of event data recorder data due to privacy concerns for car owners. The bill is still in committee.

Also, as of March 2016, 17 states have enacted statutes relating to EDRs and privacy that prohibit download of data, except under certain circumstances. Further, courts in some states have ruled on the reliability and admissibility of data from EDRs in criminal and civil litigation, most often finding the evidence reliable and admissible. See for example, Bachman v. General Motors Corp., 776 N.E.2d 262 (Ill. App. Ct. 2002); State v. Shabazz, 946 A.2d 626 (N.J. Super. 2005); Matos v. Florida, 899 So.2d 403 (Fla. Ct. App. 2005); Commonwealth v. Safka, 95 A.3d 304 (2014 PA Super 131); also see, Dorothy J. Glancy, Retrieving Black Box Evidence from Vehicles: Uses and Abuses of Vehicle Data Recorder Evidence in Criminal Trials, 33 Champion 12 (2009).

Unintended consequences

Ultimately, the investigators at Professional Analysis and Consulting, Inc. hope that active safety systems are preventing crashes that otherwise would have come across their desks without those systems installed. However, these improvements in technology may have an unintended consequence, cautions scientist Dr. Michael G. Koehler. Some drivers may believe they don’t need to pay as much attention behind the wheel, since they believe their car is capable of avoiding the crash for them, he said.

Notes Dr. Shipley, “Safety is improving, so people’s expectations are increasing as well. However, it’s important to remember that these car safety features are an assist to drivers to help them get to their destination safely.”

This is also the key message of a new national education campaign known as MyCarDoesWhat, which was officially launched in October 2015 by the National Safety Council and the University of Iowa. The motto of the campaign is “You are your car’s best safety feature,” a sentiment echoed throughout the campaign’s dozens of video clips and animations about active safety systems.

Ultimately, reducing crashes on the roads is the goal of vehicle manufacturers when adding active safety systems to cars. Campaigns such as MyCarDoesWhat aim to help educate drivers on using these active safety systems so they are empowered to help keep themselves and others safer on the roads.

1 http://www.nhtsa.gov/EDR
3 http://www.dhs.gov/xlibrary/statusreports/article/455/2
6 http://www.nsc.org/learn/NSC-Initiatives/Pages/Avoid-the-Dash-to-the-Dashboard.aspx
7 http://www.nsc.org/learn/NSC-Initiatives/Pages/distracted-driving-hands-free-is-not-risk-free-infographic.aspx
8 https://mycardoeswhat.org/safety-features/
10 https://www.congress.gov/114/bills/s766/BILLS-114s766rs.pdf
ACTIVE SAFETY SYSTEMS WITH THE HIGHEST POTENTIAL LIFE-SAVING BENEFIT

<table>
<thead>
<tr>
<th>SAFETY FEATURE ICON</th>
<th>SAFETY FEATURE</th>
<th>DRIVER CRASH PREVENTION BENEFIT</th>
<th>ANNUAL EXPECTED NO. LIVES SAVED</th>
<th>SAFETY FEATURE ICON</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Electronic Stability Control</td>
<td>Helps prevent loss of steering control; this in turn helps prevent road departures and rollovers</td>
<td>5,300 to 9,600¹</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adaptive Headlights</td>
<td>Helps prevent reduced visibility crashes</td>
<td>Up to 2,484² (mitigated or saved)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automatic Emergency Braking</td>
<td>Helps preventing rear-end collisions</td>
<td>About 1,360³</td>
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² http://www.iihs.org/iihs/statusreport/article/45/5/2

FAREWELL/WELCOME

Dr. Linda Fisher
Our heartfelt thanks to Dr. Linda Fisher for her dedication and hard work as the NHTSA COTR for the Fellows/Judicial Outreach Liaison Program since January, 2014. Although Dr. Fisher’s service with the Fellows/JOL program concluded in March of this year, she continues to work with NHTSA and we wish her well in her duties and responsibilities in NHTSA Region 10 headquartered in Seattle, Washington.

Caroline Cash
We also extend a warm welcome to Caroline Cash, NHTSA Highway Safety Specialist who is now serving as the NHTSA COR for the Fellows/Judicial Outreach Liaison Program. Caroline has been with NHTSA since July of 2013, after serving for 7 years as Executive Director of Mothers Against Drunk Driving in the State of Maryland. In addition to the Fellows/JOL program, she works with the National Center for State Courts, the National Judicial College, National Center for DWI Courts, coordinates the State Impaired Driving Assessments, and she serves on the LifeSavers National Conference planning committee.
Mark Stodola, American Probation and Parole Association (APPA) Probation Fellow

According to the Bureau of Justice Statistics, in 2014 there were approximately 4.7 million people on community supervision (probation or parole) in the United States. Of this population, approximately 15% of individuals on probation have been convicted of one DWI while 8% have been convicted of multiple DWI offenses. These 8% are the individuals who are statistically at greatest risk of committing another DWI.

The high risk drunk driving population offers many significant challenges for supervision. Yet, there is considerable promise that the use of evidence-based practices, including validated DWI risk/needs assessments, as well as placing supervision and treatment focus on criminogenic factors rather than just the use of alcohol, can reduce recidivism. Additionally, there is a broad array of alcohol technology including ignition interlock, transdermal alcohol monitoring devices and mobile alcohol monitoring technology that can greatly enhance the level and quality of community supervision for individuals convicted of DWI.

Despite the promise of these evidence-based practices in reducing the threat of recidivism with the DWI population, the reality is that these interventions all cost money. As a former probation officer, one of my favorite adages for individuals on community supervision for DWI was “if you can afford to buy alcohol, you can afford to pay your probation service fees.” While I thought I was being exceptionally clever, what I didn’t consider was treatment providers, ignition interlock installers, judges, prosecutors, defense attorneys and department of motor vehicle officials were essentially saying the same thing about the fines, fees and reimbursements they were owed. The costs associated with DWI convictions include fines, attorney costs, probation service fees, treatment expenses, which may include alcohol, drug and mental health counseling, jail reimbursement, ignition interlock and other alcohol technology interventions and restitution if there was a victim in the case. Additional costs might include an increase in the individual’s insurance rates or public transportation after the loss of driver license.

In fact, the overall cost of supervision for individuals convicted of DWI may surpass most other populations placed on community supervision. Depending on the jurisdiction, the monthly fee to the individual on probation for DWI might range from $300-$500 a month. Given that research has also shown that this same population is typically underemployed or unemployed and has minimal formal education, ordering these fines and fees without examining the individual’s ability to pay can be a recipe for disaster. When the financial burden of community supervision and adherence to court orders is such that compliance is unattainable, the tendency of the probationer can be to simply give up. According to the National Center for Victims of Crime, motivating individuals with court-ordered financial obligations can be key to making payment plans work. Motivations may include the use of incentives, such as travel privileges or permits, access to special education or work programs, or a reduced number of in-person supervision visits for a probationer who is current with restitution payments.

As with all individuals who have been convicted of a criminal offense, individuals on supervision for DWI must be held accountable for their behavior. Statutorily mandated fines and fees, as well as treatment and supervision costs, won’t just simply go away. The ultimate goal of community supervision is that these individuals change their criminal behaviors and ideally become productive members of society.

Here are some suggestions and strategies designed to promote financial compliance for the DWI offender, while recognizing the need to realistically assess fines and fees in a manner that will promote success:

Don’t determine financial sanctions in a vacuum: When determining fine schedules and payment plans, give consideration to all costs associated with supervision and treatment. By staggering the start dates for payment, monies may still get paid, while the probationer has better opportunities for financial compliance.

Payment priorities should reflect supervision plans: If completing detox and alcohol treatment or obtaining employment is the first priority for an indigent or “financially challenged” probationer, consideration should be given to delaying the monthly payment of court fines and fees until it is anticipated that addiction issues are addressed.

Use available tools and resources to determine the ability to pay: There is no such thing as the perfect payment ability tool. The college student working part time while living rent free with parents may be better able to pay court costs than the middle class individual with 4 children. However tools such as Maricopa County’s Payment Ability Evaluation FormC:\Users\mayesc\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\22F2HZY4\NHTSA\Article submissions\Payment ability NEW.doc or Colorado Judicial Department Financial Disclosure Form give clarification to the individual’s financial situation and can play a key role in developing a payment plan. Using a detailed financial disclosure form, collecting pay stubs, performing a credit check, looking at the entire household income and whenever possible, conducting a home visit also help gauge the individuals ability to pay.

Use available community resources to assist the individual on supervision in gaining/maintaining financial compliance: Many communities offer financial budget classes to assist individuals in money management. For individuals on supervision who live paycheck to paycheck (assuming they are working) these classes can be a revelation. For individuals who are trying to manipulate the system in order to avoid payment, these classes can be enough of an annoyance that they may be
more willing to abide by their payment plan. Job assistance programs also can be a benefit for individuals on supervision by providing them information on finding and keeping a job. It is important that supervision officers not assume these individuals have any experience in filling out an application or interviewing for a job. Any available resources in the community that can help provide individuals on supervision that type of assistance can be valuable.

Consider incentives as well as sanctions: The criminal justice system is adept at providing a variety of sanctions to individuals convicted of DWI offenses, but what about incentives for demonstrated compliance? For example, some jurisdictions have the discretion to reduce fine amounts when individuals complete treatment. Others have arranged to reduce the monthly cost of ignition interlock if the individual goes a number of months without any violation or incident. In other jurisdictions, compliance with all terms of supervised probation can result in early termination or reduced reporting requirements which can result in a reduction or elimination of probation service fees. Simply providing affirmations to the individual for successful payments also can promote future compliance.

Make payments a priority: Maricopa County Adult Probation Department has developed a list of tips and techniques for encouraging payment of court ordered financial obligations. They include:

- Engaging the probationer in a discussion about lifestyle choices, i.e. cell phone, cable television, smoking, jewelry, acrylic fingernails, designer clothing, new vehicles, vacations, gifts purchased by others for the probationer, electronic and/or furniture rentals, non-paying roommates, etc.
- Make contact with the probationer’s natural support systems (e.g. spouse, significant other, employer) to discuss the importance of paying Court-ordered financial obligations.
- Promptly follow-up on missed or partial payment, and agree upon a pay date. Follow-up to verify that the payment was made on the promised date.
- When supervision staff makes payment of Court-ordered monies a priority, the probationer will make payment a priority. Remember, the goal is long-term behavioral change rather than short-term compliance.5

By realistically balancing the financial obligations of the individual placed on probation for DWI with the resources and tools that promote compliance and recovery we have the opportunity to achieve our goal of a safer community and highways.

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1 The Bureau of Justice Statistics-Probation and Parole in the United States 2014
2 The Century Council/American Probation and Parole Association-Hardcore Drunk Driving Community Supervision Guide, 5-6
3 Robertson, Robyn-DUI-Impaired Drivers and Risk Assessment, What Have We Learned? APPA Perspectives Magazine-Volume 38, number 3
5 National Center for Victims of Crime, Making Restitution Real Tool Kit https://www.victimsofcrime.org/docs/restitution-toolkit/c8_tips-for-encouraging-payments.pdf?sfvrsn=2
The Judicial Division’s National Conference of Specialized Court Judges is pleased to report that the 2016 National Traffic Court Seminar held March 16-18, 2016 at the Hotel Monteleone in New Orleans was an unqualified success with more than 90 participants representing jurisdictions from across the country. The annual program, which is held at a different location each year, provides judges, prosecutors, defense attorneys and other criminal justice stakeholders an unmatched traffic related legal education program with more than a dozen sessions on vitally important and cutting edge topics such as: search and seizure, drugged driving, evidence and technology, ethics, pre-trial supervision, pharmacology, interpreters in traffic court, and evidence based sentencing approaches, including DWI Courts.

In addition to the formal sessions presented by an outstanding faculty that included nationally recognized judicial leaders, experienced and highly qualified criminal justice practitioners and traffic safety professionals, as well as experts from other disciplines, the Seminar was enhanced by the cooperation and support of such entities as the National Highway Traffic Safety Administration, National Safety Council, the Louisiana State Police and the Louisiana Highway Safety Commission.

One of the highlights for participants and faculty was the reception at the impressive and historical Louisiana Supreme Court building (The Great White Hall) during which program attendees toured the fully restored building, including the Supreme Court courtroom as well as the Supreme Court Museum.

With plans for next year moving forward and an announcement as to date and location forthcoming, the NCSCJ would like to extend a heartfelt thank you to Cheronne Mayes and everyone at the Judicial Division for all the hard work that resulted in such a successful 2016 program.

Questions about the National Traffic Court Seminar or other judicial education programs available through the National Conference of Specialized Court Judges should be directed to Cheronne Mayes at the Judicial Division, NCSCJ Chair Judge Beth Gibson or NCSCJ Traffic Court Committee Chair, Judge Earl Penrod.