California Association of Accident Reconstruction Specialists

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SKID MARKS

No. 23 Winter 2003

In This Issue

Schedule of ACTAR Accreditation Examinations

Currently there are 850 accredited reconstruction professionals worldwide, with an additional 105 pending so why not you? There's no better way to demonstrate your qualifications as a reconstruction professional. The following is a list showing upcoming test dates and locations, so you too can earn your accreditation.

Date	Location
December 12, 2003	East Lansing, MI
December 14, 2003	St Louis, MO
May 1, 2004	Jacksonville, FL

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Personal Assistive Mobility Devices

Deputy Kent E. Boots

Orange County Sheriff's Department/
M.A.R.T.

A new law change for 2003 took effect on the first of March. Senate Bill 1918 provides that beginning March 1st, 2003 and ending at sunset on January 1st, 2008, "electric personal assistive mobility devices" may be allowed on pedestrian walkways. Additionally Cities and/or counties have the option to limit or restrict their use, including prohibiting use of the device in their respective jurisdictions.

The term "electric personal assistive mobility device" or "EPAMD" has been added to the vehicle code and is defined as a self-balancing, nontandem two-wheeled device, that can turn in place, designed to transport only one person, with an electric propulsion system averaging less than 750 watts (1 horsepower), the maximum speed of which, when powered solely by a propulsion system on a paved level surface, is less than 12.5 miles per hour.[1]

The definition of pedestrian was amended to include anyone using an electric personal assistive mobility device.[2] Since a person operating the device is considered a pedestrian, only those vehicle code laws applicable to pedestrians would be enforceable. A device operated upon a roadway would be subject to all vehicle code sections related to pedestrians on the roadway.[3] A person operating the device would not, for example, be required to wear a helmet. There are no alcohol related offenses related to someone operating an EPAMD other than public intoxication.[4]

Presently Segway is the only company that manufactures these types of devices because the design is patented. They have two models that both have a maximum speed of 12.5 mph, and a maximum range of 11-15 miles on a single charge. The ground size is 19" X 25" and they are capable of turning in place creating an approx. 25" diameter circle. This is not a device for physically challenged people.

There is currently a voluntary recall by Segway in conjunction with the U.S. Consumer Product Safety Commission; approx. 6,000 units were affected by the recall. Under certain operating conditions, particularly when the batteries are near the end of charge, some Segway HTs may not deliver enough power, allowing the rider to fall. This can happen if the rider speeds up abruptly, encounters an obstacle, or continues to ride after receiving a low-battery alert. The recall involves all Segway HT i167 ("i Series") models sold to consumers. In addition, Segway LLC is including all e167 ("e Series") and i167 models sold to commercial users, and all p133 ("p Series") models sold to consumers in test markets.

Segway is selling the devices via Amazon.com for $4950.00 (see photo below). They are available for purchase or rental at the following locations in California:

Purchase: Regional Transp. Center
4001 El Cajon Blvd
San Diego, CA 92105

Rental: Seaway Rentals – Belmont Park
3136 Mission Blvd., Ste. G
Pacific Beach, CA 92109

CRASH!

If anyone has an interesting collision reconstruction related photograph that could be published in a future issue of Skidmarks, please forward it to Jim Holder at jamesh@ci.garden-grove.ca.us

This vehicle, a Mazda pick-up, impacted the tree on the driver's side while upside down. It then wrapped around the tree as the tree fell. The Mazda was broken in half right behind the cab.

[1] VC 313
[2] VC 467(a)
[3] VC 21950-21966
[4] PC 647(f)

Blurbs from the Board


Gordon Gray
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Kent Boots
Vice Chair


Bill Focha
Director


Karen Haverkamp
Director


Jim Holder
Director


Chris Kauderer
Director


Richard Shin
Director


Rudy Degger
ACTAR Rep.

Blurbs from the Board for Winter 2003

Dear CAARS Members,

Good Wishes to Each and Every CA²RS Member!

CONFERENCE TALK: Our fall conference "CAARS vs. Bikes" once more is in the record book. This year we had 72 of our members attending our 5th annual conference. The conference was held in Anaheim at the Anaheim Sheraton Hotel. I personally wish to express my gratitude to Kent Boots and Karen Haverkamp. These two extraordinary individuals stepped up and really helped me from beginning to end, through some difficult times to make this conference one of our finest. If it was not for their superfluous endeavor the conference would not have gone as smooth as it did. The next time you see Kent and Karen give them a well-deserved pat on the back.

Everyone attending received a black and blue sports bag, complete with a personalized CA²RS water bottle. Additionally, attendees received a notebook filled with each speaker's outlines, notes, and illustrations of their respective topic(s). We have a few extra sports bag left. They can be purchased for $15.00 each at one of our quarterly meetings while supplies last.

Over the course of the conference, those that attended had the opportunity to learn from some of the best in our business. Kent Boots started us off with a California Vehicle Code update and over view of the law as it applies to motorized scooters. Next up was a regular with more knowledge and the willingness to share his research with others, Tim Reust, Accident Science. Tim presented his experience on the Performance Characteristics of Two-Wheeled Push-Type Razor Scooters and Bicycle Performance Information. We ended the day with Bruno Schmidt, Southwest Missouri State University, who brought an outstanding presentation on Excel Spreadsheet Basics.

Bruno opened our second day, Thursday, October 16th, for the second half of Excel Spreadsheet Applications. Before and after lunch came Tom Fugger, Accident Research & Biomechanics, Inc. on Personal Mobility Devices. We ended the day with Collision Investigation Case Studies lead by Kerry Berg, Jerry Eubanks, Sean Shimada, and Dr. Federico Vaca.

On Friday, Bruno finished up his presentation on Excel Spreadsheets covering the feature of Accident Reconstruction. We learned just what a powerful and helpful tool this program can be once the spreadsheets are developed. Jerry Eubanks, Automobile Collision Cause Analysis presented his research on Skateboard/Rollerblade Speeds. Sean Shimada, Biomechanical Consultants of California was the next on the scene presenting Biomechanical Injury Causation. Ending the day was Dr. Federico Vaca, UCI Medical Center who brought us Medical Field/Collision Investigation Efforts.

IN WITH THE NEW: On Thursday afternoon we held our elections for Vice-Chair and three of the five Director positions. The election results are in. It is my pleasure to announce the re-election of Kent Boots, (Orange Co. S/D) as Vice-Chair and William "Bill" Focha (Sonoma Co. S/D) Director. We have two new Board members with the election of Chris Kauderer (Rudy Degger & Assoc.) and Richard Shin (Santa Ana PD). I look forward in working with each and every one of you to improve CA²RS and provide enhanced service our members.

OUT WITH THE OLD: The time has come to say goodbye to close friends and associates within our organization. Many thanks go out to William Jones who has served as a Director, Editor of "Skidmarks," and Treasurer for the past year. We also wish Benn Karne farewell, Benn has served as a Director and Training Coordinator for the past two years. Thank you both for dedicating your time and effort to improve CA²RS. At the January training meeting there will be a special presentation to these dedicated individuals for their service.

THE FUTURE: Speaking of training, members mark your calendars. That's right mark your calendars for we have a full year of training lined up and ready to go. In January 2004, we'll have our Northern Cal. Meeting in Pittsburg at the Contra County Sheriff's Dept. Training Facility on Advanced Lamp Analysis. The same topic will be presented in Southern California at a location TBA. For April and May, 2004 look for Post Collision Passenger Vehicle Inspections and finally in July and August we'll bring you Momentum Review – and Case Study. This class will be an excellent refresher for those with thoughts of taking the ACTAR test.

CONFERENCE 2004: We are in the planning stages of our 2004 Conference. We haven't yet decided where to hold the conference. If you would like to host this event please contact me. We are working on the topics and are open for recommendations. With the popularity of motorcycles and the increase in motorcycle collisions we have had some thoughts concerning focusing on this topic. If you have any thoughts or have any extraordinary talents you would like to present, now is the time to march ahead.

CA²RS is beginning our 6th year with a full plate. Hope to see everyone at the quarterly trainings, in 2004.

Gordon W. Gray

CA²RS Chair

Just a reminder...

If there is any information you would like changed, added, or deleted from your mailing address, please contact CA²RS Headquarters immediately. If you would like information to appear in our newsletters you must submit your materials to Jim Holder. For deadlines please e-mail jamesh@ci.garden-grove.ca.us or call (714) 741-5823

Test your Skills 

The front of a Ford strikes a Chevy nearly broadside on the driver's side. The principal direction of force was directed through each of the vehicles' center of mass. The vehicles remained engaged and moved together, basically in a straight line to their final position of rest, without significant rotation. The Ford weighed 2500 lb and the Chevy weighed 3500 lb. The Ford has a weight distribution of 60/40, and the Chevy has a weight distribution of 70/30. You conduct testing at the scene of the collision and determine a roadway coefficient of friction of 0.75 for all non -rotating wheels. You estimate free-rolling friction values of .05 for all rolling rear wheels and .01 for all rolling front wheels from prior testing.
There was no evidence of pre-impact or post-impact braking on either vehicle. However, the collision caused the right front wheel of the Ford to become caged, and non-rotating. All other wheels were freely rolling and rotating. (Answers on Page 11)

1. **What is the drag factor for the two vehicles as they moved off as a combined unit?**
   Hint: For the methodology refer to Reconstruction Tips & Techniques in CA²RS Newsletter #20.
2. **If the vehicles traveled 40' post impact, what is their post collision velocity?**

The Ford had an approach angle of 0 degrees, and the Chevy had an approach angle of 95 degrees. The two vehicles moved off together as a unit at an angle of 37 degrees.

3. **What is the Ford's pre-impact speed?**
4. **What is the Chevy's pre-impact speed?**

The driver of the Chevy claimed that he stopped at the stop sign. You measure the travel distance from the limit line to the area of impact for the Chevy to be 23 feet. You conduct some tests with an exemplar Chevy and determine the maximum acceleration rate for the Chevy over that distance to be 10.2 fps.

5. **Did the driver of the Chevy stop?**

Newsletter #22 Test Your Skills Correction: Question number three's correct answer is 19.63 fps or 13.39 mph.

Quarterly Training Dates for 2004

Dates	Locations	Topics

January 28th, 2004	Pittsburg, CA	Advanced Lamp Analysis
February 18th, 2004	Garden Grove, CA	Advanced Lamp Analysis
April 23rd – April 26th	See Cruise Time below	Post Collision Passenger Vehicle Inspections
July 28th, 2004	Northern California, TBA	Momentum Review – Case Study
August 18th, 2004	Southern California, Anaheim	Momentum Review – Case Study
The dates, locations, and topics are tentative but we wanted to give you an idea what to expect for the coming year		

Cruise Time! on Carnival Cruise Line's Fun Ship "Ecstasy"
Departs on Friday, April 23, 2004 and returns on Monday, April 26, 2004. Saturday is spent in Ensenada, Mexico and Sunday is a fun day at sea. Eight hours of training will be separated into two segments, with one half presented on Friday afternoon and the second on Sunday morning. Our members and their guests will have a private party on Friday evening (with an open bar) and other surprise extras (including something for spouses)!!! Any non-members wishing to attend the training will still pay $50.00 and receive a 1 year membership in CA²RS. All payments will go to CA²RS making this a nice training tax deduction. All info and registration will be going out soon but everyone should mark their calendars for the first CA²RS sea adventure. Deposits of $100.00 per person will be due by January 15th, with final payment due by March 1st. Total cost will be approx. $400.00 per person, double occupancy, for an inside stateroom. Outside staterooms will be available for additional cost. The training will be on Post Collision Passenger Vehicle Inspections, presented by Alan Coulter and Wesley Van Diver from CHP M.A.I.T.

This training should be a great opportunity to get to know your fellow CA²RS members better and have a little fun!

EDR Technology and CVC Section 9951

by W. R. "Rusty" Haight

In early 2000, the Vetronix Corp of Santa Barbara made the "Crash Data Retrieval (CDR) System" publicly available. The CDR System - essentially a diagnostic "scan tool" like the other scan tools they make for activities such as emissions checks and engine diagnostics - extracts crash data from the air bag control module in some of the cars capable of saving that data in the event of a crash. The system was first capable of extracting data from General Motors (GM) vehicles and in 2003 it was extended to allow access to a limited number of Ford vehicles. In the near future, the system will be expanded to additional Ford models and, before long; other manufacturer's vehicles will be accessible using this system.

After the system's release, it was inevitable that crash data would begin to find its way into the courts and, of course, catch the attention of the media. Naturally, since criminal cases generally find their way to trial sooner than civil cases, crash data extracted using the CDR System started to appear in criminal cases around the country in late 2000 and into 2001.

One of the earliest well known cases occurred in Jefferson County, Colorado, and involved a teenage driver who, while speeding, lost control of his car in a yaw and the car ended up going sideways into a utility pole. The prosecution offered the CDR data at trial and showed that the car had been going, at one point, some 78mph - well in excess of either the posted limit or what would be safe on that road. The defense seized on the fact that, at one point, the driver appeared to apply the car's brakes and the crash data showed what appeared to be a substantial speed loss - as though the driver tried to slow the car - before impact. In the end, the driver was acquitted of felony vehicular assault charges (relative to injuries to occupants). Rather than focusing on the fact that the data was ultimately used in part to actually acquit the driver, the media seized on the notion that this was a secret "black box" installed by the manufacturers without the knowledge of unsuspecting owners/drivers and was an extension of some "evil corporate big brother" technology installed to spy on us. More recent media accounts have similarly overlooked this case and focused instead on, for example, "your car as a witness for the prosecution..."

Over time, there have been other similar high profile cases involving the Event Data Recorder (EDR) technology. One relatively recent case in south Florida made national headlines starting in USA Today and then other media outlets where data from a crash was used in trial together with the normal reconstruction done and the driver was convicted. Articles about this technology have appeared in national news magazines as well as on the television and radio news nationally in the US and Canada as well as locally. Most, if not all, media

accounts ultimately turn their attention from the case at hand - away from the actions of the involved driver who killed or maimed others - and focus on the red herring issue of "privacy" instead.

Without going too much into a discussion of how factually the media "reports" the news as opposed to the sensationalism of the news, "some" knowledge of this system ultimately made its way to the office of California Assemblyman Tim Leslie of the 4th District in California, the Roseville area. In January 2003, Assemblyman Leslie introduced Assembly Bill 213: "Vehicles: Event Data Recorders."

As part of an exchange of correspondence between Assemblyman Leslie and myself, he wrote to me as the bill found its way through committee defending it this way: "AB 213 is a warranted and measured response aimed at protecting consumers from recording devices installed on their vehicles without their permission." In that same correspondence, he continued, "The bill will not stop advancements in motor safety (sic) - it will however prevent unwarranted seizures of the information contained on (sic) these devices." (For my part, I asked Assemblyman Leslie, pointedly, why consumers needed to be "protected" from these devices? I wonder, are there sharp edges or small parts that could be swallowed I wasn't aware of...?)

In the end, over objections by myself directly to Assemblyman Leslie and others in the state legislature in addition to objections forwarded by police officers from throughout California, AB 213 was passed, signed by the former governor and will become California Vehicle Code Section 9951 to take effect in 2004.

But what IS that actual effect? How will it effect our handling of EDR data using the CDR system? There's been a lot of hand wringing since the passage of the section about how it will keep us from getting at EDR data, but will it?

For starters, the section is one of those found in the vehicle code, which might be described as an "enabler" or administrative section. It's going to be found after section 9950 which is "statement of horsepower rating of engine" in the Vehicle Code under the "Vehicle Sales" division as it relates to advertising brochures and manuals. The section does not specify that any "violation" or act or omission opposite to the terms of the section is a "crime" whether infraction, misdemeanor or felony. It's actually broken into several pertinent sub sections and each warrants individual examination here.

The first, section 9951(a) basically tries to bring state law on parity with Federal law by directing manufacturers that any car manufactured and sold or leased in California after July 1, 2004 (we're talking about model year 2005 for the most part now) "...which is equipped with one or more recording devices commonly referred to as 'event data recorders (EDR)' or 'sensing and diagnostic modules (SDM),' shall disclose that fact in the owner's manual for the vehicle."

This text truly highlights the glaring, utter lack of research conducted on this technology by the Assemblyman's office in preparation of the legislation. Had they stopped mid-hype to check, they'd have learned that General Motors, for example, has been installing this technology in cars going back to about 1990 in one fashion or another and, once it reached the point where their cars truly had an EDR capability, all owner's manuals in all GM vehicles included text which addressed this very point. One example direct from a GM owner's manual I use when conducting the CDR Operator's Certification Course reads: "your vehicle is equipped with a crash sensing and diagnostic module which records information about the frontal air bag system. The module records information about...driver's safety belt usage at deployment. Some modules also record speed, engine rpm, brake and throttle data." How much more clear can it be?

In short, we can easily see that sub-section "a" of CVC 9951 is really rendered meaningless before the law even takes effect. Not only has GM already included this information but Ford began putting this type of information in their owner's manuals in 2001 and other manufacturers with similar capabilities have long put such notice in their owner's manuals. GM has, in fact, devoted a full page in the 2004 owner's manual to a description of the system and it's specifically listed in the index as an individual information item.

One might argue that "no one reads the owner's manual anyway, so what good is that?" While the legislature at least recognized case law in this regard such that the courts have long held that the owner's manual was sufficient notice to the consumer and that the consumer has a specific responsibility for having read the owner's manual for their car, what other method of dissemination of this information would one suggest? The very inclusion of this text in the CVC section is an acknowledgment that this type of notice is sufficient.

While on one hand, one of the intended safety benefits of this system is relative to the issue of driver awareness, on the other hand, unless the government takes stops to increase that awareness, how can it be done effectively? For example, the manufacturers put extensive seat belt use information in the owner's manual but it's the government who stresses the importance of seat belt use thru "click it or ticket" campaigns and the "Vince and Larry" commercials. But the manufacturers aren't required to take any further action to push seat belt use so why should they be so required in this respect? From a practical perspective we can't, after all, require manufacturer's to take out expensive ads in newspapers or buy airtime to supplement the standing requirement the consumer has

to be familiar with the content of their owner's manual.

Studies from Europe suggest that the sheer number of crashes can be reduced by as much as 25-30% where people know that the car they're driving has a data recorder installed. So, while I'm very supportive of the effort to make knowledge of the EDR component's existence and installation more commonplace - more well known so long as it's accurately portrayed to the general public - I'm open to suggestions as to how to do it apart from the unwitting role the media has already played in this regard by sensationalizing the privacy issue.

I suggested to Assemblyman Leslie that, as with seat belt use, the government might reasonably assume that role and he replied that there was no state money available for such a program. He wrote to me: "The state should not expend taxpayer dollars that will only serve to educate those drivers who own GMs and Fords about a device that can be, as you mentioned in your correspondence, easily read about in the owner's manual."

But let's assume that section "a" has application, the test of that application is then the "b" subsection, which defines a "recording device:"

"...as used in this section, 'recording device' means a device that is installed by the manufacturer of the vehicle and does one or more of the following, for the purpose of retrieving data after an accident:
(1) Records how fast and in which direction the motor vehicle is traveling.
(2) Records a history of where the motor vehicle travels.
(3) Records steering performance.
(4) Records brake performance, including, but not limited to, whether brakes were applied before an accident.
(5) Records the driver's seatbelt status.
(6) Has the ability to transmit information concerning an accident in which the motor vehicle has been involved to a central communications system when an accident occurs."

First, the sub-section specifies that a "recording device" is something installed by the manufacturer for "the purpose of retrieving data after an accident." The actual device we're talking about - the specific term SDM is used in the language of this section and the legislative counsel's digest over and over - is installed for the purpose of controlling the supplemental restraint system: the air bags and seat belt pretensioners. The device runs the diagnostic on the air bag system in the car then analyzes crash pulse data to make the deployment/no-deployment decision in a crash event and is a safety component first, last and always. It is installed for the express purpose of protecting the occupants using supplemental restraints (air bags and seat belt pretensioners). As something of a bonus, it MAY also record crash data. It was not installed for "the purpose of retrieving data after an accident."

More to the point, in the law, when it says "if one does x AND y, it is a violation..." that means one has to do BOTH "x" AND "y" or it's simply not a violation of that section. So taking that into consideration, let's see what's actually then covered by this section starting with item (1) which says it's a "recording device" if it "records how fast and in which direction the motor vehicle is traveling." None, not one, of the air bag control modules in cars, trucks and other SUVs on the road record both speed AND direction. None, period. So this first item just doesn't apply but it demonstrates the unadulterated ignorance of the system and lack of meaningful research done by the people who cobbled this legislature together.

Item (2) would be that the device "records a history of where the motor vehicle travels." Again, none, not one of these modules does that. In the end, this item is really laughably irrelevant.

Item (3) suggests the device would be covered if it "records steering performance." None do so this is again an irrelevant and meaningless description.

Item (4) requires that the device: "records brake performance, including, but not limited to, whether brakes were applied before an accident." While no device records "brake performance" - a term not really defined in the section as written but suggesting everything from some manner of a braking friction coefficient to how well the brakes performed to stop or slow the car - it does go on to suggest that one aspect would be "whether the brakes were applied before the accident."

In reality, some - but not all - GM air bag control modules (SDMs) record whether or not the brake SWITCH was in an "on" or "off" condition for some period essentially before a crash, but that doesn't necessarily mean that the brakes were actually APPLIED "before the accident" nor does that describe any measure of "performance." Moreover, when one considers that (a) this doesn't apply to all GM vehicles because some don't have what's known as "pre-crash" data to include brake switch position recording nor does it apply to (b) any Ford vehicle because none of those systems record ANY "pre-crash" data, then one might argue that this item is (1) overly broad or vague, (2) doesn't provide "equal protection" (applies to one manufacturer and not another) and/or (3) singles out only certain makes and models of vehicles with systems which have that capability. In any case, we see again clearly the utter lack of research done by the legislator in the preparation of this bill.

Item (5) stipulates that this law will apply to a vehicle

which “records the driver's seatbelt status.” But what is the “status” of a seat belt? I think this demonstrates that someone showed the legislator a CDR report because that wording is direct from the report for a GM download, but in terms of a Ford download the word “status” is simply not used. Again, one might easily argue that this item is overly broad or vague, it doesn’t provide “equal protection,” or targets only certain makes of vehicles with systems which have the capability to capture “status.” In other places in the law, the word “status” is used to refer to “under or over a certain age” - curfew is, for example, a “status” crime - or could it mean it’s “status” is “present in the car” or that it’s “tangled...” In any event, we see again the utter lack of reasonable research done by the legislator in the preparation of this bill.

Item (6) is interesting because it’s clearly written with a specific system in mind where it describes a unit, which “has the ability to transmit information concerning an accident in which the motor vehicle has been involved to a central communications system when an accident occurs.” In the legislative legal counsel’s analysis it specifically mentions the GM optional subscription service known as OnStar. In Assemblyman Leslie’s correspondence to me, he writes “OnStar is entirely different than EDRs and SDMs because by subscribing to the service, car-owners are opting-in to having a device on their car...”

While he starts out correctly pointing out that OnStar is entirely different than an SDM or EDR, he misses the more important difference: the air bag control module (whether the GM SDM or Ford RCM) simply does not have the ability to transmit anything to any “communications system” (system?). So, this item doesn’t apply either.

OnStar, for example, is an optional package installed in a GM vehicle using equipment that is separate and apart from the air bag control module. While it does rely on a signal from the SDM that there’s been a deployment of the air bags to activate the crash notification system an important distinction to note is that is done in the OnStar component, NOT in the SDM and we download nothing from OnStar or the OnStar equipment using the CDR System.

So, when we look at the module this law is supposed to target, we find it’s either grossly misidentified or so poorly identified in the language of this section that one can easily argue the section is ultimately meaningless but there’s a more important point yet to come: access authority.

The section reads, up to this point, that there’s got to be a mention in the owner’s manual that this system exists in the subject car (section “a”) if it does any of these things (section ”b”). The next section (section “c”) goes on to define who can then access data if it meets the requirements of section “b.” It reads:

“Data described in subdivision (b) that is recorded on (sic) a recording device may not be downloaded or otherwise retrieved by a person other than the registered owner of the motor vehicle, except under one of the following circumstances:

(1) The registered owner of the motor vehicle consents to the retrieval of the information.

(2) In response to an order of a court having jurisdiction to issue the order.

(3) For the purpose of improving motor vehicle safety, including for medical research of the human body's reaction to motor vehicle accidents, and the identity of the registered owner or driver is not disclosed in connection with that retrieved data. The disclosure of the vehicle identification number (VIN) for the purpose of improving vehicle safety, including for medical research of the human body's reaction to motor vehicle accidents, does not constitute the disclosure of the identity of the registered owner or driver.

(4) The data is retrieved by a licensed new motor vehicle dealer, or by an automotive technician as defined in Section 9880.1 of the Business and Professions Code, for the purpose of diagnosing, servicing, or repairing the motor vehicle.”

Assuming we’re dealing with a module that somehow fits the description of section “b,” we can find here a list of those who can access data stored in this module apart from the car’s registered owner. While we shouldn’t overlook the fact that the registered owner might not be the driver at the time of a given crash and whose actions would seem to be those the Assemblyman would seem to want to protect, let’s examine item (1). Item (1) calls for the registered owner to give consent to the “download” of the data. But, Mr. Assemblyman, what about when the driver and/or registered owner are dead in the car after the crash?

Informed consent is a relatively complex legal concept that is debated and discussed daily in medical malpractice cases across the country. It often comes down to the question: did the subject understand the implications of the consent given? In terms we’re likely more familiar with, contemplate how often the consent search of a car by police becomes the subject of a motion to exclude evidence based on the way the consent was requested or given. I think this is another clear example of the lack of forethought and information in the writing of this legislation. So, without guidance as to what will constitute adequate consent - perhaps we should quiz the owner or driver on the contents of the owner’s manual in the field? - the section leaves us again wanting for detail, for specificity and adequate guidance. (We’ve all heard it one time or another: “Objection, your honor, vague and ambiguous. Lacks foundation.”)

Part (2) calls for release of information in response to a

court order; a search warrant. That would seem clear enough. In essence, it really restates the obvious: if a court issues a warrant one can do whatever the warrant allows.

Part (3) is the most interesting of the group of exceptions. It allows retrieval of the data for the "purpose of improving motor vehicle safety." Is that not the reason for a police crash investigation in the first place? Is that not why we enforce laws or collect crash information?

I contend that effective crash investigation - whether done by the police, the government or a private entity - is the ultimate foundation of motor vehicle safety. To that end, collection of ALL available evidence or information is a necessary component. If we don't have sufficient crash information available to develop meaningful crash statistics there is no hope we can implement one of the "Three E's of Traffic Safety:" engineering, enforcement or education. If we don't have enough information about why a crash or cluster of crashes happened, we can't re-engineer the road or the car, we can't develop effective selective enforcement plans and we can't educate the driving public to improve traffic safety; even if Assemblyman Leslie says the state doesn't have money to do that. In that regard then, one can easily argue, as has been done for decades, that effective, complete crash investigations to include the gathering of ALL available crash information - particularly to include that information from the EDR component in the car - is the cornerstone of traffic safety and therefore specifically authorized under the section.

The last part, item (4) allows for data retrieval "by a licensed new motor vehicle dealer, or by an automotive technician as defined in Section 9880.1 of the Business and Professions Code, for the purpose of diagnosing, servicing, or repairing the motor vehicle." This again illustrates the sheer ignorance of those who put this legislation together. No auto dealer and only an "automotive technician" involved in forensic auto exams as opposed to ordinary repair has bought the CDR System from Vetronix. The CDR system is simply not a repair related scan tool.

This is an important distinction that comes up with respect to the type of data the CDR System extracts from the car's air bag control module and what it does not extract. It extracts CRASH data. There are other scan tools which extract service related data a dealer or "automotive technician" might find helpful in terms of repair but the CDR system extracts and interprets crash data truly unrelated to a repair function.

An aspect not addressed yet in this narrative and not specifically addressed in the vehicle code section is access authority in police work as a function of normal police crash investigation. Surely one of the concerns voiced even before this is legislation was offered was about how or if a police agency should develop policy with respect to when officers should download data, harvest and impound air bag control modules and now deal with the provisions of this section. I think it should be clear by now that the police already have sufficient authority to remove light bulbs for filament examination, seat belts for an indication of use in a crash and other car parts - just as the air bag control module is a car part - and such activity is already covered by ample case law and really the activity is clearly part of the third (3) item which allows for downloading in the interest of traffic safety so why wasn't that addressed in this section in more detail?

The last part of the new section reads: "(d) A person authorized to download or otherwise retrieve data from a recording device pursuant to paragraph (3) of subdivision (c), may not release that data, except to share the data among the motor vehicle safety and medical research communities, to advance motor vehicle safety, and only if the identity of the registered owner or driver is not disclosed." What this says is that if you collect the data as part of a traffic safety effort you can exchange that data with others so long as you don't identify the owner or driver of the subject car. What's important to note here is that paragraph (3) specifies that including the VIN in the downloaded data DOES NOT constitute an identification of the individual owner or driver.

What's not addressed here and again, as so many times before, illustrates the lack of real, meaningful research that went into this legislation, is that necessarily when this information becomes part of a police crash report, the driver(s) and owner(s) will most assuredly be identified in the report. In short, the text is again meaningless because it can't address the practicalities of the use of this data and runs counter to established rules of discovery in both civil and criminal cases.

A final entry in the section reads: "(2) Subdivision (c) does not apply to subscription services meeting the requirements of paragraph (1)." This confusing text would appear to say that if the owner or driver has a subscription service (for example OnStar) then I take it to mean that simply having that subscription service constitutes consent (as described in paragraph (1)).

Finally, in the context of this technology, "privacy" is an interesting and necessary concept to include and examine in this discussion. By definition, the concept of privacy is focuses on the idea that "personal" information about an identifiable individual can be kept from others where that individual has an expectation of the privacy of that information. Privacy is "the quality of being secluded from the presence or view of others" where "private" is something "confined to particular persons or groups or providing privacy."

When one drives down the road, in a public place, in plain view, doing something that can be seen by those in

the area, recorded by still photography or video and replayed without their consent, for example, on public television...where does one have an "expectation of privacy" with respect to the driving conduct that can be observed in plain view and do I need to point out that that conduct is the very data collected in the case of a crash?

I contend, and I believe there's ample case law to support this painfully obvious position, that drivers simply do not have an expectation of privacy for the act of driving and, moreover, have none relative to the limited but focused information captured by the EDR component. I contend that there is simply no extension of "privacy" to the act of driving in a public place and in plain view. But let's put it in the context of the information potentially gathered by one of these EDR components.

(1) Seat belt use (not "status"). Since, in California not wearing the seat belt is a primary ticketable offense, it follows that the law reasonably recognizes that anyone outside the car - a passing police officer for example - can see whether or not the belt's being worn because that activity is in plain view. Clearly, no privacy exclusion is extended to that observation and there is the obvious recognition that a driver can expect no privacy for actions he takes or fails to take while driving. In the context of this technology, the confirmation of that seat belt use in a crash using the EDR component is not an infringement on the driver's privacy notwithstanding the fact that there is very obviously no expectation of privacy in the situation described. After the crash, the reconstructionist is going to confirm this belt use by belt examination or examination of the body for appropriate marks from the belt, so the information from the Ford system that the belt is buckled or engaged or an indication of buckled or unbuckled as defined by "status" on GM products is confirming, corroborating information and not private or personal.

(2) Vehicle speed is similarly a public act. Anyone standing on the corner can see, photograph and video tape the car go by at "X" mph in a "Y" mph speed zone. Eyewitness to crashes are called upon all the time to give their estimate of the vehicle's speed before the crash in trial and when interviewed at the scene by the police. Police officers using radar for enforcement first make a visual estimate of the car's speed - in a public place - before they use radar to confirm their visual observation and estimate just as in reconstructing a crash we would in some fashion figure the vehicle's speed then corroborate it with the EDR data. So, again we have a situation where the driving activity observed is something done in a public place where they're no expectation of privacy with respect to the act.

(3) Engine rpm and throttle position really go hand-in-hand. By way of example, we see a car stopped at a stop sign and hear the engine suddenly roar and the tires squeal as the car accelerates quickly from a stop. We're observing - again in a public place and in plain view - the application of likely a high percentage of wide open throttle and we're hearing the engine rpm as a function of the engine sounds and the evidence of that application and result as a function of the acceleration scuff on the ground where the car started. When the car crashes, the police at the scene are going to further document this activity thru an analysis of the marks the car left accelerating from a stop and ultimately from its speed at impact from more tire marks and bent metal.

None of the information contained in the EDR component is "private," and none is done where there is an expectation of privacy. The EDR component doesn't record voice conversations. It doesn't record the name of the driver, his driver license number or any of his PERSONAL information therefore this is NOT about "privacy." The new CVC section even goes so far as to sate what the Federal government has already stated, that being the disclosure of the VIN doesn't constitute an individual identification. Privacy in this context is nothing more than a red herring issue. What it records - WHEN it records it - is objective information about what was happening with the car when the crash occurred. We need to not loose sight of that distinction when media or desperate lawyers try to turn this into a privacy witch-hunt.

When the EDR data is used correctly, it's used as a supplement to a normal reconstruction and gives us - whichever side of a case we're working on - corroborating and supporting information about a crash and it's part of a larger traffic safety effort in one fashion or another.

Vehicle Code Section 9951 will take effect - such as that might turn out to be - in 2004. As pointed out, the "a" subsection will change nothing the manufacturers do and, of course, will change nothing a reconstructionist does.

The "b" section which ostensibly would define what the "device" can do is really so ineffectively written it is a virtual certainty that if a lawyer tries to use that as the basis to exclude EDR evidence - although there's no provision for that in this section - that one can argue it simply doesn't apply to the types of devices we're actually dealing with in cars today.

As to the "c" section which would theoretically define who can access the data in the EDR component, lawyers I've talked to who both actually understand the EDR technology and have read this section tell me that no reasonable judge around is going to exclude evidence based on this vehicle code section not only because of it's vague and inaccurate descriptions and text in the "b" section and elsewhere but moreover because there are already so many exceptions to "ownership" of information about or in a car during a police crash investigation they point out that this really

changes nothing in that respect and won't supercede existing provisions and the law.

Having said that, I would still recommend strongly that police officers who anticipate using a CDR system meet with their local prosecutor's office and discuss the differences between a download at the scene of a crash during the at-scene investigation as opposed to a download after the car's been impounded for further examination and draw a comparison between the capture of data in each of those situations with the removal of, for example, a lamp for filament examination. They should also point out the text of the new CVC section and the flaws in that section as noted in this narrative.

Ultimately, the discussion should go to the question of "Do you, Mr. Prosecutor, want me to get a warrant for this data every time, in each of these situations or not?" More often than not, they will tell you that it's not necessary, but some will suggest it's the "safest" approach. You should then work with them to set forth the wording of that warrant so it's consistent and covers the actual activity keeping in mind that it may lead to a requirement to obtain a warrant for ANY car part - i.e.: bulbs - you examine or plan to use as evidence in a crash related case.

Another consideration here has to do with the harvesting and retention of the air bag control module itself. For my part, I strongly recommend that investigators make every effort to leave the module intact in the car. A download of the data can and should be done without removing the module from the car and the module itself is largely meaningless as an exhibit in trial. While it makes for interesting "show and tell," removing it can lead to a spoliation claim against the investigator and his company or police agency and is really an unnecessary step.

In the "private sector," for civil cases, there are already well-established rules of discovery allowing access to and inspection, documentation and examination of the opposing side's car after a crash. This activity was clearly not anticipated by the CVC section. While the section talks about downloading only with a court order or with the owner's consent, when the car is made available as part of normal discovery, those concepts fall to the wayside. In short, for those who follow the normal rules of discovery in civil cases, this section is again meaningless.

In the final analysis, while AB 213 that ultimately became CVC 9951 is, well, interesting and has caused some unnecessary hand wringing, it's largely meaningless to our current reconstruction activities using this technology in both law enforcement and the private sector so long as we read and understand it. We should each in our respective jobs have already contemplated the best way to access data such that it would be admissible and, as a function of adequate training in this technology, we should understand the operation and limitations of the components and use of the extracted data to support our normal reconstruction activities toward traffic safety.

Author information: W. R. Rusty Haight is a former San Diego police officer who has been involved in crash investigation and reconstruction as well as crash research and training for over 20 years. His involvement in crash testing extends to extensive use of the EDR technology in both the public and private sectors. He has testified in cases throughout the US as well as in Singapore and Australia. More recently, he has been involved in the courtroom use of EDR data and technology nationally, testifying in motions to exclude this evidence as a function of "Frye" hearings and serves on a NHTSA committee relative to training in the use of this technology by the police. He is currently the Director of the Collision Safety Institute (www.collisionsafety.net) and one of only two people in the U.S. approved by GM, Ford and Vetronix to conduct the CDR System Operator's Certification Course.

The above is the opinion of the author, W. R. "Rusty" Haight, and the printing of this does not constitute a stance on this issue by CA²RS.

Test Your Skills – Answers:

1. .239
2. 16.94 mph
3. 34.61 mph
4. 17.54 mph
5. No. If the Chevy had stopped it would have only reached a speed of 14.77 mph at impact.

For detailed solutions, contact Kent E. Boots. E-mail: *kboots@ocsd.org*