



THE ASSOCIATION



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Section



The Popularity of Used EDR Modules

Since the invention of the airbag back in 1952 and its implementation into domestic vehicle production in the early and mid-1970's, people have been trying to figure out ways to cut the costs of restraint system replacement following a vehicle crash and its subsequent repair. Nearly all US automobile manufacturers recommend (insist) that all components of the supplemental restraint system (SRS) which have been involved in a crash must be replaced, including crash sensors, airbags, and of course, the airbag control module (ACM) or more commonly known as the event data recorder (EDR). With new EDR units costing anywhere from a couple hundred dollars to well over \$600 per unit, some unscrupulous auto repair shops attempt to reduce overhead expenses by buying used reconditioned EDR modules. These are popular because they're cheap, easy to access and install. A quick visit to eBay or any other on-line auction site, or even an internet search of used EDR modules will yield a mound of devices, ranging from \$34.95 up, reconditioned and ready for use. These modules are marketed as being completely "cleaned" and cleared of any trouble codes, being reset to 'like-factory standards.' While there are a few types of EDR modules that can be reset, the majority of the modules cannot be safely reset and should be discarded following a motor vehicle crash. In the case of the reconditioned or cleared EDR module, the resetting of these modules sometimes requires access of the underside of the sealed shell of the module and exposing of the EDR's circuit board in order to reprogram the EDR and reset the error codes. The breach is then re-sealed with an epoxy to "like-new" condition. In other cases, connecting the EDR to a computer and running a special program accessing the EDR's Hexi-decimal file which is then manipulated to erase all error codes it has in it. While erasing error codes in an EDR may require a person with the skill or knowledge to do it and do it correctly, this doesn't mean everything will work well.

The one of the more common complaints following the "repair" of an EDR module is that the airbag light on the dashboard remains on and seemingly cannot be reset. A check of the error codes may or may not reveal the true source of the problem. Sometimes, rather than attempting to discover the nature of the problem, the quick and easy fix for such a problem is taking a piece of black tape and covering the light. Other potential causes might include improperly replaced or mounted sensors, or sensors that weren't replaced during the repair; safety belts/pre-tensioners that weren't replaced, or worse, no airbag or one that is not correct for the vehicle involved. Often, the driver of the vehicle won't know about it until a crash occurs.

While most of this information seems like common-sense, basic info, I bring this up as a subtle reminder when doing a thorough post collision inspection as part of your overall crash reconstruction. As always, do not remove or manipulate any part of the airbag or SRS system without first ensuring that power has been cut or removed.

Some helpful hints:

1. When investigating a crash with no airbag deployment, the airbag appears to deploy without reason, or the restraints don't appear to work or otherwise "lock" into place, look into the history of the vehicle. Check for any past collisions, any evidence of issues with the SRS system (black tape covering the SRS light, etc.) Check for recalls for that vehicle. If the vehicle had been previously involved in a crash, it would be important to note where at on the vehicle, how the vehicle was repaired and by whom. If possible, obtaining a copy of the repair order and itemized list of parts may provide useful information.
 2. In a head-on or off-set frontal crash, most modern front safety restraints should lock, either in a stored or deployed state. Front belts that can be pulled from a stored position or that are found to be loose following a crash should be examined further to determine if the pre-tensioner had been discharged or not. Look for stretching, striations in the belt webbing, cuts or unusual wear.
 3. If you are unable to do it yourself, have a trained CDR technician/analyst locate and examine the EDR module. Look for signs of wear, or tampering. I once was called to download an ACM in a Chevy van used for a cleaning business. After not being able to download any information through conventional means, I attempted to pull the module from the vehicle, only to have it literally disintegrate in front of me due to exposure from the cleaning chemicals stored in the van.
 4. There should be a manufacturer's label on the module with a specific part number and serial number on it. Any other label applied in addition to or in replacement of the original label should raise suspicion. Also, verify that the EDR unit is installed in the appropriate direction, with the arrow on the module facing forward. Any additional holes or inappropriate mounts affixed to the module should be thoroughly investigated.
 5. A download of the EDR module may reveal evidence of tampering or "cleaning," such as inappropriate, incomplete or absent data. If a download is successful, the vehicle's ignition cycles should be examined and compared to those reported at the time of the event. They should be very close. Also, be suspicious if the ignition cycles do not appear to match the age of the vehicle; 4450 ignition cycles on a 17 year old vehicle probably isn't accurate unless it's a show car or only driven on Sundays!
 6. Finally, Indiana Code 9-19-10.5-2 makes it a class A misdemeanor to knowingly or intentionally install a component of the vehicle's inflatable restraint system that does not comply with FMVSS #208 (49 CFR 571.208) for that particular make, model, and year of motor vehicle. It is a level 6 Felony if a person is injured or dies as the result of the violation.
- I.C. 9-19-10.5-3 makes it a criminal offense for anyone to sell, trade, or transfer a motor vehicle with an object that does not comply with FMVSS #208 (49 CFR 571.208) for that particular make, model, and year of motor vehicle. Violation of 9-19-10.5-3 is a level 6 Felony.

Secretary's Section



Hello all:

First, let me apologize for the lapse in timing for this newsletter and for failing to get out the last two newsletters for 2017.

Sometimes I get busy even though I am retired and yes sometimes lazy while trying to do this for the Association. No excuses, just the plain truth. And to be honest, it is sometimes hard to find articles or provide information to the Association without insulting anyone's training/experience.

With that said, I would like to encourage any of the members to forward to me anything/articles they may come upon that they would like to see in the newsletter. Or if anyone would like to see a particular/specific area of accident investigation/reconstruction in the newsletter.

Again:

Automobiles, Motorcycles and Trucks-Semi Trailers are braked differently which means the drag factor may vary and which must be accounted for during braking.

Over the years, technology has changed how we as Accident Investigators and Reconstructionists, must now reconstruct crashes. For example: ABS braking and ACM (airbag control module).

These types of vehicles may have the capability to have different drag factors values assessed to these vehicles involved in crashes.

Also in the last few years, I have twice come upon a new style/type of disc air-brake for commercial motor vehicles that I venture to say will become more prevalent as time goes on.

Stopping Distance From 60 MPH

GVW: 56,470 lbs. with Non-Braked Control Trailer



← FMVSS 121 Current Requirement →



NHTSA's Proposal for
Reduced Stopping Distance



Bendix® Air Disc Brakes

These are Bendix air disc brakes and they are suppose to be :

1. Better performance...equal brake performance results in a smooth, straight and safe stop
2. Break-through in safety...reduced stopping distance



There are basically two (2) institutions of learning that probably most law enforcement officers have attended :

NUCPS—Northwestern University Center for Public Safety (Formerly known as the Northwestern University Traffic Institute NUTI), Evanston, IL

IPTM—Institute of Police Technology & Management, Jacksonville, FL

See IPTM website for class schedule for other training venues

See NUCPS website for class schedule for other training courses

Your association

works for you!

The IACAI is a non-profit organization dedicated to the professional education and training of crash investigators and reconstructionists throughout the State of Indiana. Training is open to all crash investigators, employed by or retired from a public safety agency.