

Ralph's Accident Reconstruction Newsletter

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A third case involving CDR was a situation where a collision had occurred several years prior to my involvement. A heavy truck was traveling on a straight and level road when a small car approached from a side street with a stop sign. The heavy truck had the right of way. The car crossed the path of the heavy truck and was severely damaged. Impact occurred on the driver's side of the car; the driver and sole occupant survived but was grievously injured. She retained an attorney, which prompted a representative of the trucking company to contact me for a reconstruction. The truck had been repaired; the car was a total loss and, by the time of my involvement, had been sold to a used-auto-parts business in another state. I contacted that business, and the owner was willing to allow me to examine the remains of that car. While there, I noticed that the airbag had deployed and that the ACM was still present in the vehicle. It was removed in my presence; I paid them for it and brought it to my office for a bench download. This ACM showed vehicle operation for five seconds before the crash. The driver of the car never stopped for the sign; the lowest speed for the five seconds preceding impact was seven mph. The driver of the car had been trying to create a scenario in which the speeding truck collided with the side of her car after she had made a normal and proper stop and that the cause of the collision was the excessive speed of the truck. None of the allegations of the driver of the car had any merit, as demonstrated by the CDR download and measurements taken at the site of the collision, used in combination with at-scene photographs taken by the investigating police agency.

Many late-model Ford products contain a wealth of vehicle operational data in the Powertrain Control Module (PCM). The data set is supposed to be locked by a collision or collision-level event whenever airbags deploy, but that lock doesn't always occur. If and when it does, the PCM will record many seconds (some record almost seven minutes) of pre-crash data plus five seconds of post-crash data. Even if the collision-induced lock is not set, the PCM may contain useful data if the engine was immediately shut off after the collision and the ignition switch was never subsequently turned on. Even for a PCM which is locked, a prolonged period of operation of the vehicle will clear that lock; the details of the length of that period are proprietary. But for PCMs which contain crash data, there is a wealth of information about the operation of that vehicle for at least twenty seconds before and five seconds after the impact. Some Ford vehicles have both the PCM and the ACM supported; most have one or the other. The ACM would be expected to provide an indication of delta-v; the PCM shows vehicle speed plus many other data points displayed on a chart marked in two-second increments.

My Bosch CDR Toolkit and software are state of the art. A download of the EDR in a vehicle is generally a good idea when the ACM incorporates that feature; one never knows when an opposing party will file a lawsuit, and the CDR file can mean the difference between a messy trial and virtually no possibility of significantly adverse settlement of the dispute. Please call me with any questions regarding car/light-truck EDR downloads or other vehicle-related topics.

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Collision Analysis

On-road, Off-road, Marine

Pedestrian/Bicyclist

Motorcycle Collisions

Conspicuity Evaluations

Lamp Filament Evaluations

EDR Downloads

Tire Failure Evaluations

Brake/Steering Evaluations

Seat Belts/Airbags



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