ELD Records and ECM Black Box Data in Tractor-Trailer Crash Claims

When a tractor-trailer crash causes serious injuries, the most precise record of the last seconds before impact often sits inside the truck itself. People call it the black box, yet the term covers several separate systems. For a truck accident lawyer, knowing which device holds which record shapes the first evidence requests in a claim.

What the black box means on a commercial truck

Most heavy trucks carry an engine control module (ECM), a computer that manages the engine. Depending on the make and configuration, the ECM may store data such as vehicle speed, brake application, throttle position and cruise control status around a sudden deceleration or a hard stop. NHTSA describes an event data recorder (EDR) as a device that records technical vehicle and occupant information for a brief period, seconds rather than minutes, surrounding a crash. NHTSA's EDR rule in 49 CFR Part 563 covers specified light vehicles, not heavy tractor-trailers, so what a big rig records depends on the equipment installed in that particular truck.

How an ELD differs from crash data

An electronic logging device (ELD) serves a different purpose. Under the ELD rule, which Congress mandated through MAP-21, the device synchronizes with the engine to record driving time for the hours-of-service rules in 49 CFR Part 395. The ELD also records location, engine hours and vehicle miles at set intervals and at each change in duty status. This makes it valuable for rebuilding the timeline of the trip, from the moment the driver went on duty to how long the driver had been behind the wheel. It is not designed to capture braking or speed in the seconds before a collision, so a truck crash attorney will usually request both.

More electronic records worth requesting

Many trucking companies also use telematics platforms that report GPS position and speed, along with hard-braking alerts, to dispatchers in near real time. Forward-facing and driver-facing cameras may record the moments before impact, and some systems save a clip automatically after a sudden stop. Collision mitigation systems and speed limiters may keep their own event records. Phone records can matter as well, since 49 CFR 392.80 and 392.82 prohibit texting and hand-held phone use by commercial drivers.

How electronic evidence gets lost

Electronic records are easy to lose. Some ECM systems keep only a limited number of events and may overwrite older ones once the truck goes back into service. Camera footage may be kept for only days or weeks under a company's own settings. Federal rules require records of duty status and supporting documents to be kept for six months under 49 CFR 395.8, but that is a minimum for routine recordkeeping and does not answer what must be kept once a claim is foreseeable.

That is why a semi-truck accident lawyer will often send a preservation letter within days, asking the trucking company to keep the ECM, the ELD records, camera footage, telematics data and the truck itself. A proper download uses manufacturer software and a documented chain of custody, ideally with both sides

present. If evidence is destroyed after notice, courts in many states can impose spoliation sanctions, such as a jury instruction about the missing data.

What the data can and cannot show

Raw data seldom explains a crash on its own. An accident reconstructionist compares ECM speed and braking records with scene measurements, vehicle damage, tire marks and the crash report. Sensor clocks can drift, and wheel speed can differ from road speed during a skid. A stored fault code may also mean a reading is unreliable. A commercial truck accident lawyer will usually ask for the full download, not a summary printout, so the other side's interpretation can be tested.

A note on these general rules

Recording practices vary by manufacturer, model year and fleet settings, so no article can say what a specific truck recorded. A big rig accident lawyer reviewing a specific claim will look at the actual equipment and the actual ***Atlanta 18-wheeler crash*** records. This is general legal information and not legal advice, and it cannot predict the outcome of any claim.