Black Box (ECM) and ELD Evidence in Tractor-Trailer Crash Claims

After a serious tractor-trailer crash, the most precise record of the last seconds before impact is often stored inside the truck itself. Most people call it the black box, but that label covers several different systems. For a truck accident lawyer, knowing which device holds which record shapes the first evidence requests in a case.

## Which systems make up the black box 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 hard-braking event or a sudden stop. NHTSA describes an event data recorder (EDR) as a device that records technical vehicle and occupant information for a brief period, measured in 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 the data available from a big rig depends on the systems installed in that particular truck.

## ELD records versus crash data

The electronic logging device (ELD) has a different job. 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. That makes it useful for rebuilding the trip, from the moment the driver went on duty to how long the driver had been behind the wheel. It was not built to capture braking or speed in the final seconds before a collision, so a truck crash attorney will usually request both.

## Other electronic sources

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 save a clip on their own when they detect a sudden stop. Collision mitigation systems and speed limiters can keep separate event logs. Phone records can matter as well, because 49 CFR 392.80 and 392.82 restrict texting and hand-held phone use by commercial drivers.

## How electronic evidence gets lost

Electronic evidence is fragile. 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 floor for routine recordkeeping and does not answer what must be kept once a claim is foreseeable.

That is why a 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.

## Putting the numbers in context

Raw numbers rarely explain a crash by themselves. A reconstruction engineer compares ECM speed and braking records with scene measurements, vehicle damage, tire marks and the crash report. Device clocks can drift, and wheel speed can differ from road speed during a skid. A stored fault code can also signal that a reading is unreliable. A truck crash lawyer will usually want the full download rather than a summary printout, so the other side's interpretation can be tested.

### A note on these general rules

Data practices differ by manufacturer, model year and fleet settings, so no general article can say what a ***tractor trailer lawyer Atlanta*** particular truck recorded. A truck accident attorney handling a specific claim will look at the actual equipment and the actual records. This is general legal information and not legal advice, and it does not predict the outcome of any claim.