



BEYOND SOFTWARE: MEETING THE HARDWARE REQUIREMENTS OF THE ELD MANDATE

In addition to meeting the ELD technical requirements, fleets need hardware that is rugged enough to stand up to the day-in and day-out demands of the road.

On December 18, 2017, fleets will be required to use an electronic logging device (ELD) to record hours of service (HOS) record of duty status (RODS). While much of the focus has been on the software aspect of the fulfilling the ELD Mandate, fleets will also need to have hardware that can fulfill the requirements as well.

What makes an ELD roadworthy and how does a fleet manager go about choosing the right device? After all, if an ELD isn't roadworthy — that is, has the ability to stand up against harsh environmental conditions like dust, dirt, extreme temperatures and vibrations — it could malfunction or even fail, which will put the driver and the fleet in danger of not being in compliance, and subject to possible citations and fines.

To date, the Federal Motor Carrier Safety Administration (FMCSA) has not assessed the effect of external operating factors like dirt or vibration on the failure rate of ELDs. Rather, the FMCSA has stated that it will allow the marketplace to address the need to develop roadworthy ELDs. The directive is that the market should drive ELD providers to respond to commercial motor vehicle (CMV) operating situations where a high level of durability is required.¹

While this gives fleets flexibility in selecting its ELD hardware, fleet managers need to carefully consider what equipment will not only fulfill the ELD Mandate, but also meets the needs of the fleet; and stands up to the rigors of the road.

ELD: D IS FOR 'DEVICE'

The ELD mandate replaces the traditional paper and pencil logging system that drivers have been using for decades. Commercial drivers who prepare RODS will soon be required to use an ELD. The ELD will need to digitally capture, store, and transmit driver and vehicle data and report HOS and other data required on a driver's RODS.

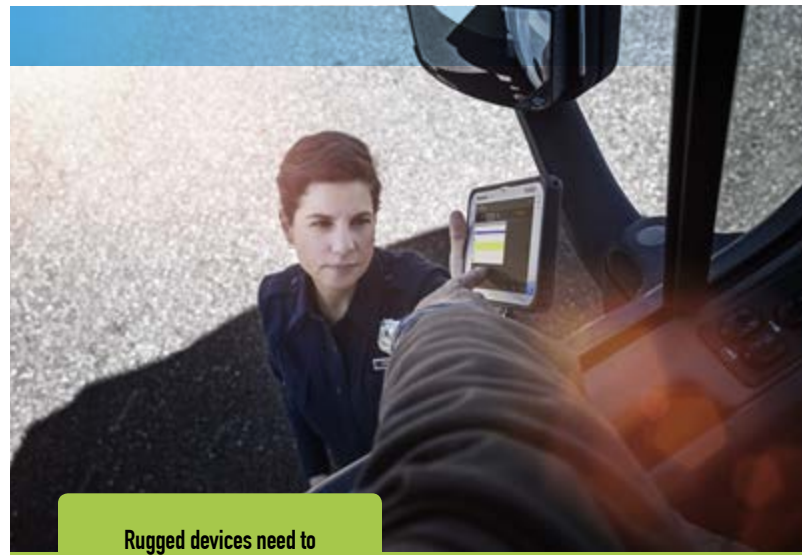
Specifically, an ELD will be required to automatically record the following data elements at certain intervals:

- Date
- Time
- Location information
- Engine hours
- Vehicle miles
- Identification information for the driver, authenticated user, vehicle and motor carrier²

The ELD is required to display information in a format replicating paper logs, and, specifically, in a way that can be presented to inspectors and law enforcement officers. The FMCSA has stated that an ELD capture device can include smartphones, tablets, and handheld mobile devices, with some stipulations.

For example, an ELD can be on a smartphone or other wireless device as long as it meets the technical specifications of the ELD Mandate. A portable ELD must be mounted in a fixed position during commercial motor vehicle operation and visible to the driver from a normal seated driving position.³

While in many ways ELDs share similar characteristics as paper logs, there are some key differences. Most significantly, an ELD is designed to capture more information — including engine data, GPS-derived mileage and location data — than what was previously required in the manual logging system.



Rugged devices need to stand up to life on the road.



In addition, because it is electronic, an ELD captures all data whenever it is in use. Therefore, ELDs can radically reduce the possibility of human error. Moreover, for both fleet managers and drivers, ELDs cut down on the administrative time, cost, and effort associated with managing paper logs.

One critical way in which an ELD is required to be the same as former paper logs is in the manner in which it displays information. Specifically, the FMCSA has stated that “an ELD must be able to present a graph grid of driver’s daily duty status changes either on a display or on a printout.”⁴

HARDWARE REQUIREMENTS

As fleets prepare to meet the December 18, 2017, ELD Mandate deadline, it is important to understand the hardware requirements as outlined by the FMCSA. Because the FMCSA has provided broad-brush requirements, it is critical for fleet managers to carefully consider and understand their options before implementing a hardware solution.

The FMCSA has provided flexibility for its hardware requirements. Specifically, fleet managers can choose to have hardware installed in a vehicle or they can opt for handheld devices that can be moved from vehicle to vehicle. In either case, the hardware must implement ELD functionality according to the ELD Mandate requirements.

Roadside inspections may be routine, but all too often they are not pleasant experiences for drivers. The right electronic logging device can be advantageous for drivers.

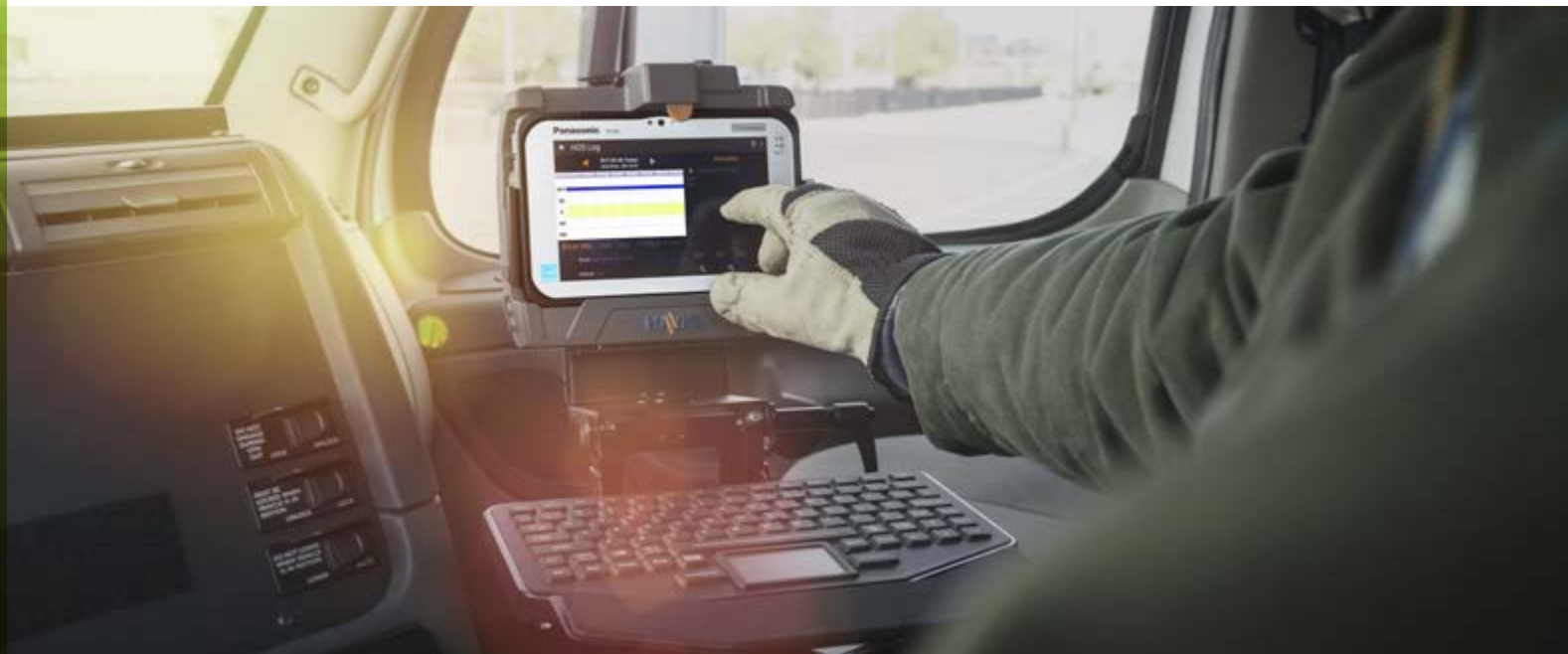
Under the ELD Mandate, during roadside inspections, data can be presented several ways. Printouts of the driver’s



RODS are acceptable. So, too, is the option for a driver to simply hand over the ELD — be it a tablet, hand held or smartphone — to the inspector or law enforcement officer when he or she requests it for review.

If requested, there are two acceptable ways for ELDs to electronically transfer data. The first option is via telematics. At a minimum, it must electronically transfer data to an authorized safety official on demand via wireless web services and e-mail. The second option is a local transfer. At a minimum, it must electronically transfer data to an authorized safety official on demand via USB2.0 and Bluetooth.⁵

Finally, fleet managers should bear in mind that, as part of the ELD hardware requirements, the manual for the ELD device must be part of the documentation a driver has in his or her truck.



As of December 18, 2017, a driver using an ELD must have a comprehensive ELD information packet onboard containing the following:

- A user's manual describing how to operate the ELD.
- An instruction sheet describing the data transfer mechanisms supported by the ELD and step-by-step instructions on how to produce and transfer the driver's HOS records to an authorized safety official.
- An instruction sheet for the driver describing ELD malfunction reporting requirements and record-keeping procedures during ELD malfunctions.
- A supply of blank driver's RODS graph-grids sufficient to record the driver's duty status and other related information for a minimum of 8 days.

All of the above are key requirements associated with the ELD Rule, and not having them could result in a citation, Behavior Analysis and Safety Improvement Category (BASIC) score, or a fine.

TOUGHENING UP — TECHNOLOGICALLY SPEAKING

While the FMCSA has left ELD hardware requirements quite broad — and clearly, a wide scope of devices are available on the market — it has stated that, while not required, ruggedized devices are acceptable for use by fleets.

While commercial vehicles that operate only on the highway may not encounter all of the same conditions as construction and utility vehicles, all commercial fleets should nonetheless carefully consider the benefits of a ruggedized device.

For fleets, a ruggedized device can prove to be a smart, dependable, long-term investment. When evaluating ELDs, fleet managers should look for fully-rugged options, such as those available from Panasonic, that will go the distance. The key benefits of ruggedized devices include:

- **Dependable Durability** — A rugged device is durable, able to withstand constant truck vibrations, shock, and extreme movement. It can also be dropped on hard surfaces as well as moved from vehicle to vehicle — without its functionality being compromised. It also features long-lasting battery operation, Panasonic's ruggedized devices, have battery life of up to 7 hours with charging to full capacity in under 3 hours.

- **Handles Harsh Settings** — Drivers need to be able to easily view and use their ELD. The hardware, therefore, should be built to work in harsh settings whether it's the glare of bright sunlight or extreme hot and cold temperatures. In addition, many field service personnel require a touchscreen that works even when the user is wearing gloves.
- **Withstands Weather Elements** — For any driver, extreme weather can be a challenge. ELD hardware that is weather-resistant is critical. Only ruggedized devices promise the kind of dirt-, dust- and water-resistance that can fully function during extreme weather conditions.

Simply put, robust ELD hardware can mean the difference between maximum uptime and low risk of citations, or multiple failures and higher citation rates.

Dependable equipment is crucial for drivers and fleets to remain in compliance with the ELD Mandate. If a device malfunctions or stops working, fleets will have just 8 days to repair or replace it after it is reported to the fleet. Repair and replace services, such as those available from Panasonic ProServices, which offers comprehensive business-class services, support, and warranties on all Panasonic ELD options, should be a factor in selecting ELD hardware.



ENTERPRISE-DESIGNED VS. CONSUMER-GRADE

Fleet managers have a wide range of options and price points to choose from when it comes to selecting an ELD. But price should not be the primary consideration. Enterprise-designed, purpose-built devices have clear advantages over consumer-grade devices.

Because they are not ruggedized, consumer devices can easily malfunction — costing the fleet time, money, and compliance headaches.

Conversely, enterprise-designed devices are built for longer life cycle management and come with ongoing technical support of experienced mobile computing engineers. The result: a lower total cost of ownership (TCO).

In addition, enterprise-built devices offer optimized connectivity and customizable configurations, including Wi-Fi, Bluetooth, 4G LTE, and USB.

DON'T DELAY IMPLEMENTATION

The recent refusal by the U.S. Supreme Court to hear a challenge to the ELD Mandate has paved the way for the December 18, 2017, deadline. This means that fleets cannot delay their ELD implementation. Fleet managers should consider the following when evaluating hardware:

- **Be cautious about choosing the first device you review** — It's natural to want to solve the problem immediately, but it's wiser to search out and evaluate various hardware options.
- **Pick a partner not just a provider** — Make sure the ELD provider you choose is willing to support implementation as well as address any compliance issues that might arise down the road.
- **Take it for a road test** — Test any ELD device you are considering in real-world settings to make sure it adheres to all of the requirements of the ELD Mandate and really is rugged enough to stand up to day-to-day operations.
- **Determine if it's driver-friendly and roadworthy** — Before you invest in hardware, make sure drivers can use the ELD device easily and in a variety of driving and weather conditions.

The bottom line — now is the time to implement the right ELD solution for your fleet based on best practices and careful consideration of hardware requirements. Remember, if a fleet does not meet the December 18, 2017, deadline, it will not be in compliance and will likely face citations and fines of up to \$10,000 per violation.

RESOURCES

- 1 Federal Register/ Vol. 80, No. 241 / Wednesday, December 16, 2015 / Rules and Regulations Department of Transportation, Federal Motor Carrier Safety Administration, Electronic Logging Devices and Hours of Service Supporting Documents; Final Rule Accessed June 15, 2017. <https://www.gpo.gov/fdsys/pkg/FR-2015-12-16/pdf/2015-31336.pdf>
- 2 "Frequently Asked Questions (FAQs) – ELD Rule" – FMCSA website. Accessed June 15, 2017. <https://www.fmcsa.dot.gov/hours-service/elds/faqs>
- 3 "Frequently Asked Questions (FAQs) – ELD Rule" – FMCSA website. Accessed June 15, 2017. <https://www.fmcsa.dot.gov/hours-service/elds/faqs>
- 4 "Frequently Asked Questions (FAQs) – ELD Rule" – FMCSA website. Accessed June 15, 2017. <https://www.fmcsa.dot.gov/hours-service/elds/faqs>
- 5 "Frequently Asked Questions (FAQs) – ELD Rule" – FMCSA website. Accessed June 15, 2017. <https://www.fmcsa.dot.gov/hours-service/elds/faqs>

FEATURES TO LOOK FOR IN AN ELD DEVICE

As of this writing, there are no Federal Motor Carrier Safety Administration (FMCSA)-certified ELD-compliant devices available on the market. All “certified” devices listed on the FMCSA website have been self-certified by the manufacturers providing them. The FMCSA has said it will determine what specific devices on this list are compliant at a later, unspecified date.

What is clearly outlined at this point are the main features required to fulfill the EDL Mandate.

- The device must capture all of the necessary vehicle and driver information, including:
 - HOS
 - Time
 - Location
 - Engine data
 - Mileage data

- The device must transfer data the appropriate way:
 - Telematics
 - Bluetooth
 - USB2.0

The ELD device must also have the capability to allow inspectors to see and read the RODS grid. It has to have the capability for either printing RODS data or transferring it electronically. The ELD must also allow the driver to make manual entries, and monitor and alert the driver to an out-of-compliance data capture.

Make sure your ELD provider has a plan in place to deal with out-of-compliance devices in a timely manner. The new regulation states that fleets have just 8 days to replace non-compliant devices — otherwise it can be a costly problem and impact on the fleet’s ability remain up and running. Finally, keep in mind that the FMCSA does not require a vendor to notify a customer if a device is out of compliance.



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