Hours of Service

Actions for Malfunctions &
Data Diagnostics

Contents

1 Introduction

This document will provide a description of the malfunction and diagnostic events and the actions that should be performed by both the driver and the carrier.

2 Responsibilities

2.1 Carrier Responsibilities Regarding Malfunctions

The carrier must:

- Provide drivers with an instruction sheet describing the various ELD malfunction events and recordkeeping procedures (*this document)*
- Provide drivers with a supply of 8 days' worth of blank paper driver records
- Repair, replace or service
    - Motor carrier must correct the malfunction of the ELD within 8 days of discovery of the condition or a driver's notification to the motor carrier, whichever occurs first

2.2 Record Keeping Responsibilities by the driver

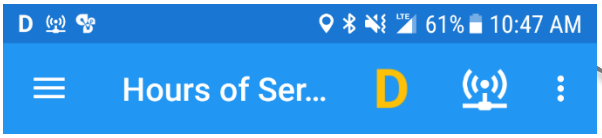
The driver must:

- **Malfunction Events**
    - Note the ELD malfunction and provide the carrier with written notice within 24hrs
    - Reconstruct driving events for the current 24hr period and previous 7 consecutive days using paper logs *(unless they can be retrieved from the ELD)*
    - Continue to manually prepare driving logs until ELD is serviced and brought back into compliance
    - During inspections which take place when a malfunction has occurred: provide safety official with manually kept driver logs
- **Data Diagnostic Events**
    - The driver must follow the motor carriers and ELD providers recommendations in resolving the data inconsistency

2.3 Clearing Malfunction and Data Diagnostic Events

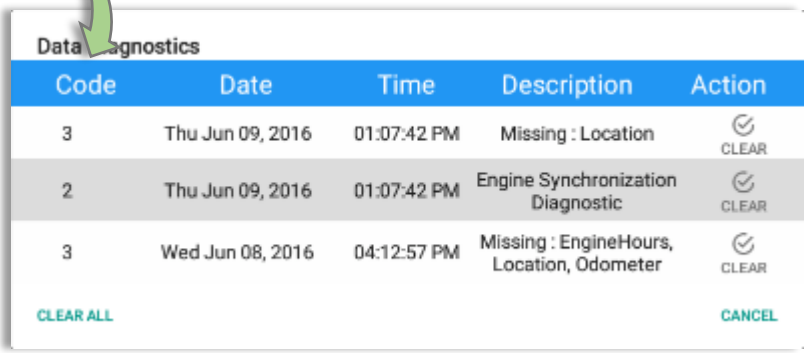
- ELD needs to capture when a malfunction or data diagnostic event has been cleared by the driver
- Unidentified driving records data diagnostic
    - Events that drop to 15 minutes or less during the current 24hr period and previous 7 days can be cleared automatically and there is no requirement to record the automatic clear

2.4 Data Diagnostics Button

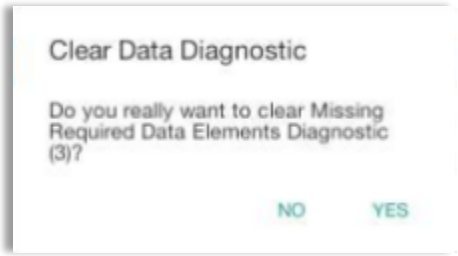


Data diagnostic events acquired by the driver will be displayed in the application's header which is always visible across all screens.

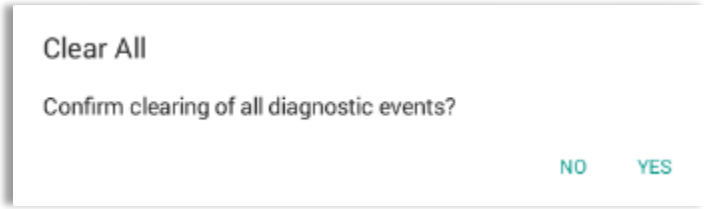
There will also be a notification in the Android toolbar indicating a data diagnostic event.



Tap the D icon to display the ***Data Diagnostic Event(s)*** dialog. Tap the CLEAR button located within the ***Action*** column of the ***Data Diagnostics*** dialog, the ***Clear Data Diagnostics*** dialog will then be displayed



To clear all the Data Diagnostic Events displayed within the dialog, tap the CLEAR ALL button, the Clear All data diagnostics dialog will then be displayed



At each instance when an ELD malfunction or data diagnostic event is detected or cleared by the ELD, the ELD records the event.

***Note**: ELD Data Diagnostic status affects only the authenticated user, therefore, the ELD only indicates the active data diagnostic event status applicable to the active driver. Data diagnostic event dialog will no longer pop up whenever it occurs, hence, the data diagnostic 'D' icon will be in an orange color when data diagnostic events have occurred.*

The 'D' icon will only turn back to white once the dialog for the data diagnostic list is closed and will turn back to orange once there are new active data diagnostic events.

3 Malfunction Events

Requirement No.	Event Code	Event Name	Description
4.6.1.1	P/Power MF	Power Malfunction	An ELD must set a power compliance malfunction if the power data diagnostic event described in paragraph 4.6.1.1(a) of this document indicates an aggregated in-motion driving time understatement of 30 minutes or more on the ELD over a 24hr period across all driver profiles, including unidentified driver profile.
4.6.1.2	E/Sync MF	Engine Synchronization Malfunction	An ELD must set an engine synchronization compliance malfunction if connectivity to any of the required data sources specified in section 4.3.1 of this 87 appendix is lost for more than 30 minutes during a 24-hour period aggregated across all driver profiles, including the unidentified driver profile.
4.6.1.3	T/Timing MF	Timing Malfunction	The ELD must periodically cross-check its compliance with the requirement specified in section 4.3.1.5 of this appendix with respect to an accurate external UTC source and must record a timing compliance malfunction when it can no longer meet the underlying compliance requirement.
4.6.1.4	L/Pos MF	Position Malfunction	ELD records requiring location information must use the last valid position measurement and include the latitude/longitude coordinates and distance traveled, in miles, since the last valid position measurement. An ELD must monitor elapsed time during periods when the ELD fails to acquire a valid position measurement within 5 miles of the CMV's movement. When such elapsed time exceeds a cumulative 60 minutes over a 24 hour period, the ELD must set and record a positioning compliance malfunction.
4.6.1.5	R/DR MF	Data Recording Malfunction	An ELD must monitor its storage capacity and integrity and must detect a data recording compliance malfunction if it can no longer record or retain required events or retrieve recorded logs that are not otherwise catalogued remotely by the motor carrier.
4.6.1.7	S/Trans MF	Data Transfer Malfunction	(a) An ELD must implement in-service monitoring functions to verify that the data transfer mechanism(s) described in section 4.9.1 of this appendix are continuing to function properly. An ELD must verify this functionality at least once every 7 days. These monitoring functions may be automatic or may involve manual steps for a driver. (c) After an ELD records a data transfer data diagnostic event, the ELD must increase the frequency of the monitoring function to check at least once every 24-hour period. If the ELD stays in the unconfirmed data

			transfer mode following the next three 90 consecutive monitoring checks, the ELD must detect a data transfer compliance malfunction.
4.6.1.8	O/Other MF	Other Malfunction	In addition to the required monitoring schemes described in sections 4.6.1.1– 4.6.1.7 of this appendix, the ELD provider may implement additional, technology-specific malfunction and data diagnostic detection schemes and may use the ELD's. Malfunction status indicator and data diagnostic status indicator (described in sections 4.6.2.1 and 4.6.3.1) to communicate the ELD's malfunction or non-compliant state to the operator(s) of the ELD.

4 Data Diagnostic Events

Requirement No.	Event Code	Event Name	Description
4.6.11	1/Pwd Diag	Power Diagnostic	An ELD must monitor data it receives from the engine ECM or alternative sources as allowed in sections 4.3.1.1-4.3.1.4 of this appendix, its on-board sensors, and data record history to identify instances when it may not have complied with the power requirements specified in section 4.3.1.1, in which case, the ELD must record a power data diagnostics event for the corresponding driver(s), or under the unidentified driver profile if no drivers were authenticated at the time of detection.
4.6.1.2	2/Sync Diag	Engine Synchronization Diagnostic	An ELD required to establish a link to the engine ECM as described in section 4.2 must monitor its connectivity to the engine ECM and its ability to retrieve the vehicle parameters described under section 4.3.1 of this appendix and must record an engine-synchronization data diagnostics event when it no longer can acquire updated values for the ELD parameters required for records within 5 seconds of the need.
4.6.1.4(d)	3/Miss Diag	Missing Data Elements Diagnostic	If a new ELD event must be recorded at an instance when the ELD had failed to acquire a valid position measurement within the most recent elapsed 5 miles of driving, but the ELD has not yet set a positioning compliance malfunction, the ELD must record the character "X" in both the latitude and longitude fields, unless location is 88 entered manually by the driver, in which case it must log the character "M" instead. Under the circumstances listed in this paragraph, if the ELD event is due to a change in duty status for the driver, the ELD must prompt the driver to enter location manually in accordance with section 4.3.2.7 of this appendix. If the driver does not enter the location information and the vehicle is in motion, the ELD must record a missing required data element data diagnostic event for the driver.

4.1.6.7	4/Tran Diag	Data Transfer Diagnostic	(b) If the monitoring mechanism fails to confirm proper in-service operation of the data transfer mechanism(s), an ELD must record a data transfer data diagnostic event and enter an unconfirmed data transfer mode.
4.6.1.6	5/Unid Diag	Unidentified Driver Diagnostic	(b) If more than 30 minutes of driving in a 24-hour period show unidentified driver on the ELD, the ELD must detect and record an unidentified driving records data diagnostic event and the data diagnostic indicator must be turned on for all drivers logged in to that ELD for the current 24-hour period and the following 7 days. (c) An unidentified driving records data diagnostic event can be cleared by the ELD when driving time logged under the unidentified driver profile for the current 24-hour period and the previous 7 consecutive days drops to 15 minutes or less.
4.1.6.8	6/Other Diag	Other Diagnostic	In addition to the required monitoring schemes described in sections 4.6.1.1– 4.6.1.7 of this appendix, the ELD provider may implement additional, technology-specific malfunction and data diagnostic detection schemes and may use the ELD's malfunction status indicator and data diagnostic status indicator (described in sections 4.6.2.1 and 4.6.3.1) to communicate the ELD's malfunction or non-compliant state to the operator(s) of the ELD.