BSM User Guide

For Android Devices and MDTs

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Solution Overview

The BSM Technologies ELD (Electronic Logging Device) solution helps drivers and fleet managers do the following:

- Comply with the ELD mandate
- Track HOS (Hours of Service)
- Present HOS logs to compliance officers
- Perform and review vehicle inspections

In general, the solution works by installing a **locator** (also known as a **box**) in a vehicle. The locator then communicates with both the **vehicle ECM** and with the **BSM application**, which is installed on the driver's **mobile device** (tablet, smartphone, or mobile data terminal).

The locator collects data from the vehicle such as speed, odometer, engine hours, and GPS location, and then transmits the data via cellular network to BSM and/or FMCSA servers, where the data becomes available to fleet managers and compliance officers.

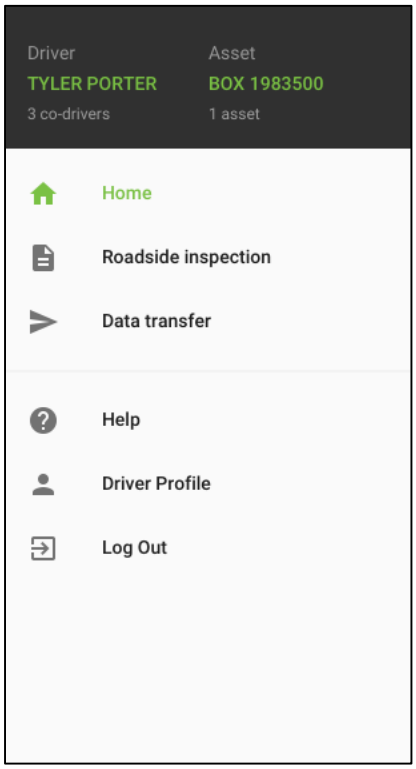
The data can then be consumed through various reporting tools, and can help fleet managers with driver safety, ELD and HOS compliance, and liability issues.

This document describes how to use the BSM mobile application.

BSM Application Overview

BSM's functionality is organized in various sections, which can be accessed from the app's **Home** screen and/or the main menu (shown):

- **Home** – An overview of the current status of the driver and vehicle. From this screen, you can also navigate to the **Hours of service** and **Inspection** screens.
- Hours of service (**HOS**) – Perform various HOS-related tasks such as changing your duty status, signing your logs, and reviewing your hours remaining in the current duty cycle.
- Select Asset – Pair the device with a vehicle or asset.
- Roadside Inspections and Data Transfer – Present your HOS logs to compliance officers.
- Carrier Edit View – Review any unassigned driving segments or carrier-edited logs.
- Driver Profile – Edit your signature, password, home terminal, or HOS rule set.



The application's main menu

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General Tasks

This section of the document shows you how to perform general tasks in BSM:

1. Logging in
2. Selecting an asset
3. Reviewing your driver profile
4. Logging out

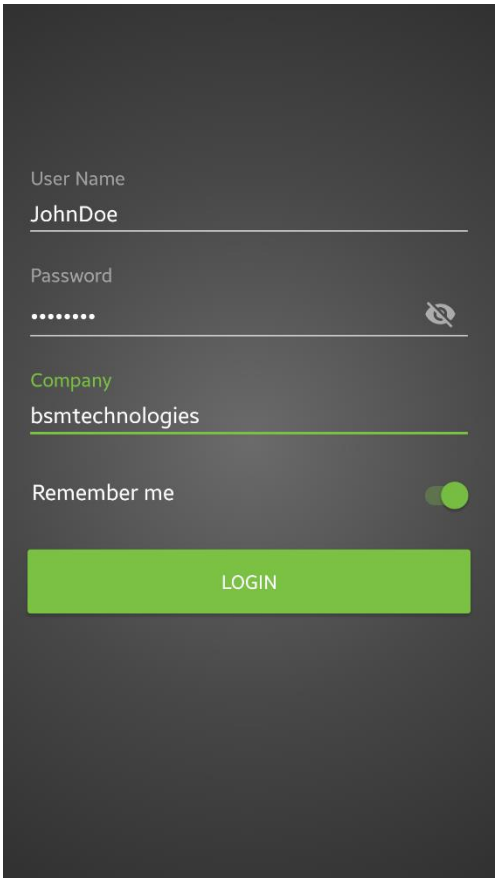
Logging in

On the login screen, enter your **User Name**, **Password**, and **Company**.

If you enable the **Remember me** slider, you will only have to enter your password the next time you log in. Leave the slider disabled if security is a concern.

When you log in, some prompts may appear based on previous activity:

- If the device is not currently paired with a vehicle, you will be taken to the **Select Asset** screen.
- If your duty status at the end of your previous shift was **Personal Conveyance**, you will be prompted to either continue in that mode or end the mode.
- If the paired vehicle has any unassigned driving segments, you will be asked if you were the driver.
- If your supervisor has edited any of your logs, you will be asked to review and then accept or reject the changes.



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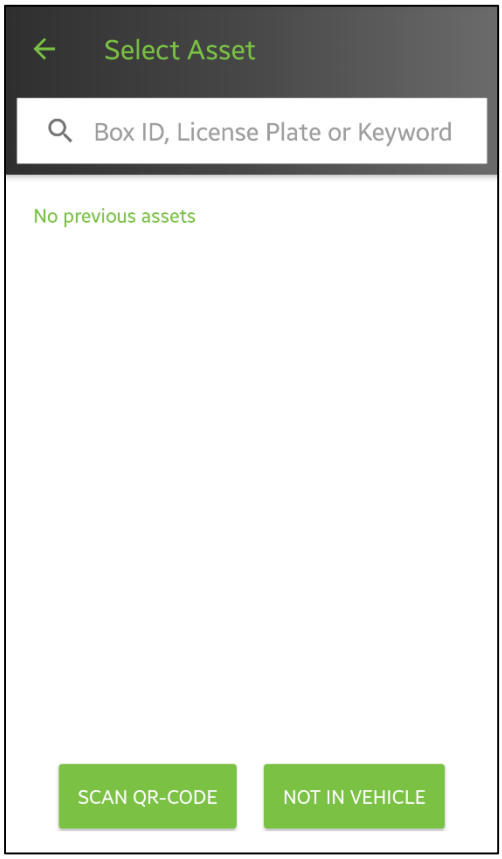
Selecting an asset

If the device is not paired with a vehicle when you log in, you will be taken to the **Select Asset** screen. You can return to this screen at any time by tapping the current asset at the top right of the main menu.



On the **Select Asset** screen, pair your device with a vehicle by doing any of the following:

- In the text field at the top of the screen, search your company database for either the vehicle's **Box ID**, **License Plate**, or **Keyword/Description**. Once you've found the vehicle, tap its name to select it.
- Select any previously paired vehicle from the list in the center of the screen.
- Tap **Scan QR Code** and then scan the vehicle's QR code sticker, which is usually placed in the sun visor or on the driver side window.
    - **Note:** This feature requires permission to use the device's camera. The first time you tap **Scan QR Code**, a dialog will appear. Tap **Allow** to grant the app camera permission.

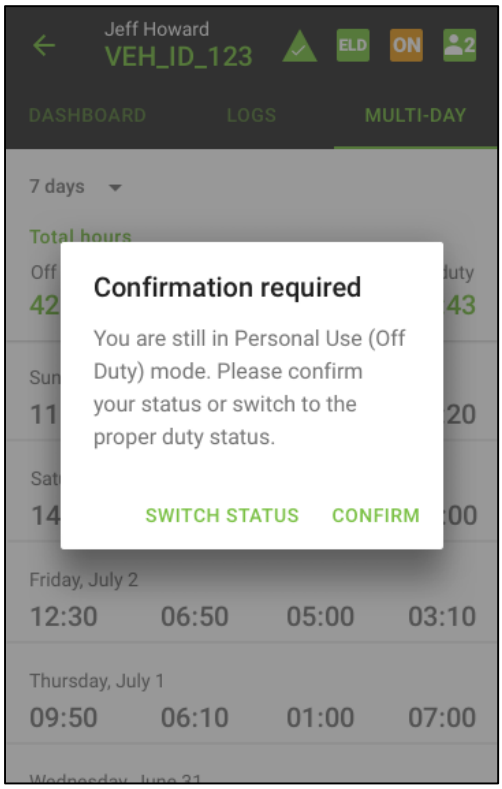
To use BSM without selecting an asset, tap **Not in Vehicle**. This can be useful for fleet managers inspecting multiple vehicles, or for drivers that only need to review, edit, or sign their logs.

Personal conveyance confirmation

Personal conveyance allows you to drive your vehicle between your home and office without accruing driving hours, typically at the beginning or end of a shift.

If your duty status at the end of your previous shift was **Personal Conveyance**, you can keep this as your duty status on the next ignition cycle by tapping **Confirm** in the dialog shown to the right:

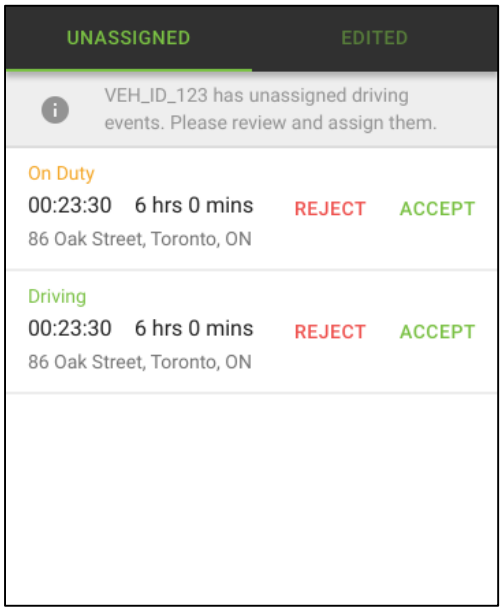
The assumption is that if you drove your vehicle home at the end of your previous shift, you will typically also drive your vehicle to the office at the start of your current shift.



Unassigned driving

Unassigned driving means that the currently paired vehicle was driven while no-one was logged in.

If the vehicle has any unassigned driving events, they will be displayed in a list. You can then **Accept** (if the driving as yours) or **Reject** (if someone else was the driver) each unassigned driving event.

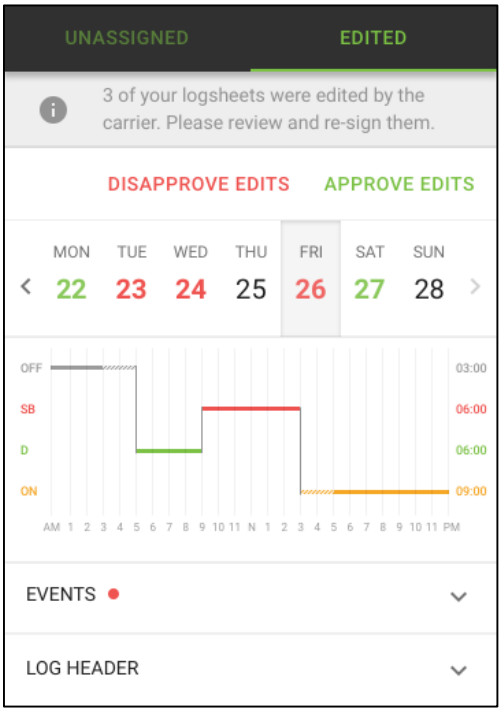


Reviewing carrier edits

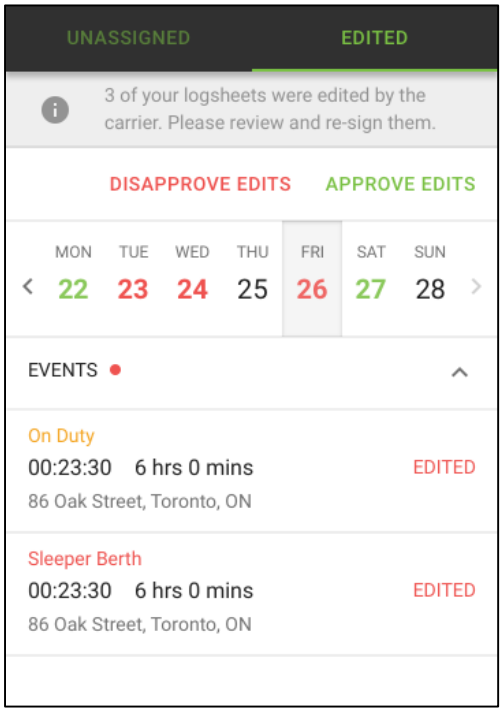
Your supervisors or fleet managers can edit your HOS logs. If any of your logs have been edited since you last logged in, you will be prompted to review and either **Approve** or **Disapprove** the edits.

You can review what was changed by tapping **Events** and looking for any duty status changes flagged as **Edited**. If you approve the changes, you will need to sign the edited logs, even if they were signed previously.

Days with carrier-edited logs are shown in **red** on the calendar slider.



The number of carrier-edited logs is displayed along the top of the screen



*Tap **Events** to see which duty status changes were edited by your carrier*

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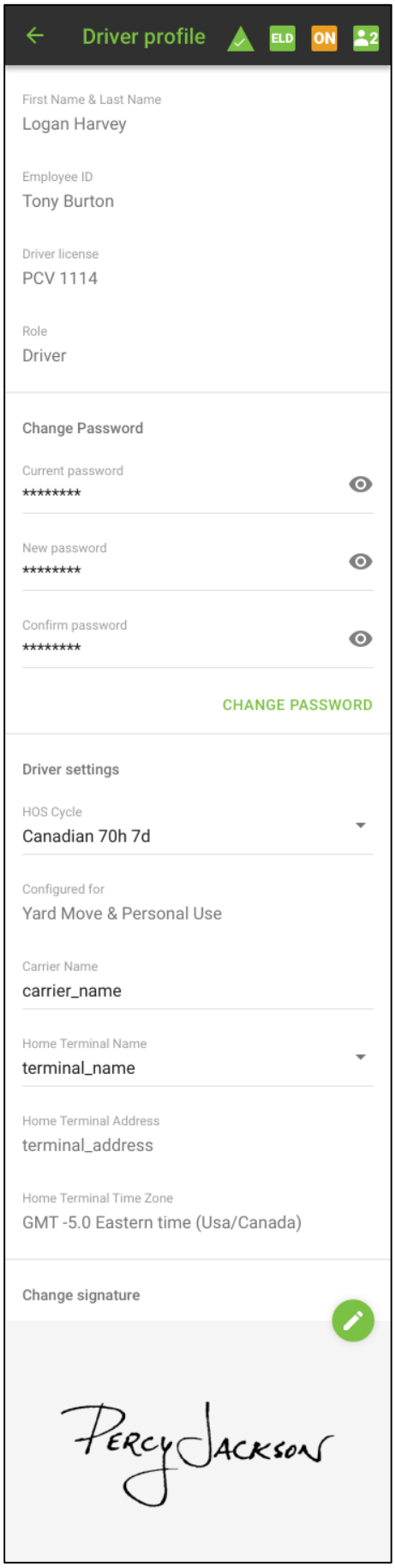
Reviewing your driver profile

Your driver profile contains all the information that appears on your HOS logs. To get to your profile, tap the menu icon at the top left of the screen and then tap **Driver Profile**.

On this screen, you can do the following:

- Change your login password
- Change your HOS cycle
- Change your home terminal
- Set your signature



Changing your password

Just below your driver information, you can change your password. You should do this if your administrator reset your password, or if it is required by company policy.

Enter your **Current** password, your new password in the **New** and **Confirm** fields, and then tap **Change Password**.

Changing your HOS cycle or home terminal

In your driver profile, your current HOS cycle and home terminal are pre-selected by your administrator.

However, you can manually change your HOS cycle or home terminal at any time by tapping the **HOS Cycle** and **Home Terminal Name** drop-down lists.

Drivers that cross country borders will need to manually change their HOS cycle.

Setting your signature

Near the bottom of your driver profile, tap the pencil icon to change your signature.

Sign on the screen using your finger or a stylus and then tap **OK**. This is the signature that appears on all of your signed logs and forms.

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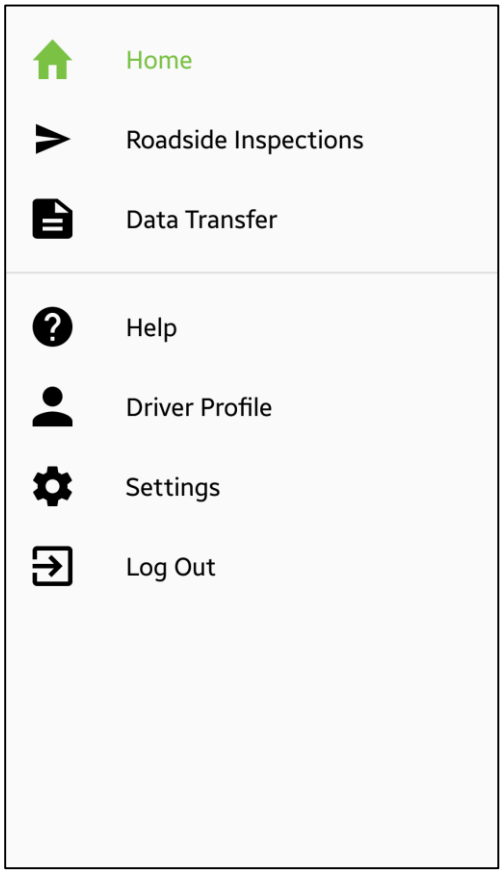
Logging out

To log out of BSM, tap the menu icon at the top left of the screen and then tap **Log Out**:



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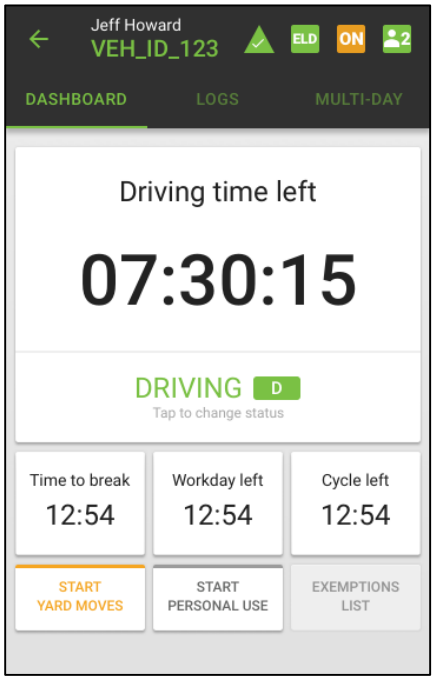
Hours of Service

All HOS-related work is done in this section. Most of the functionality is organized in the following tabs:

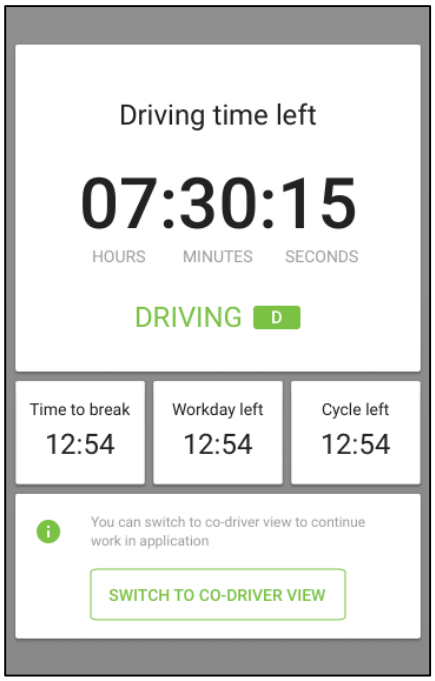
- Dashboard
- Logs
- Multi-day

There is also a header displayed along the top of the HOS screen that contains connectivity and malfunction indicators as well as co-driver functionality.

Finally, a lock screen is displayed while driving, which provides a brief HOS overview and only allows co-driver interaction.



HOS Dashboard tab – notice the header along the top



Lock screen

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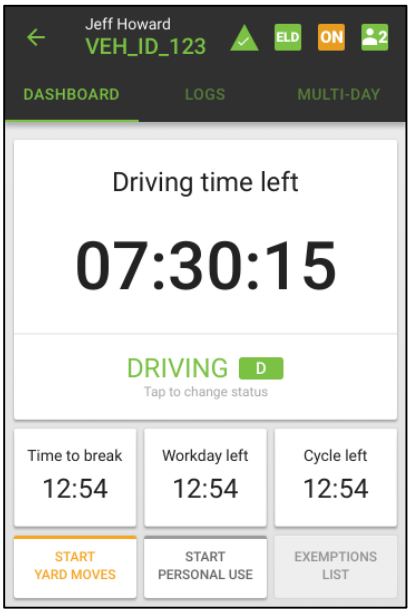
Dashboard

The **Dashboard** provides an overview of your current duty cycle. On this screen, you can:

- Manually change your duty status
- Start or end Yard Moves (YM) and Personal Conveyance (PC)
- Specify exemptions, such as oilfield or 100-air-mile radius



Changing your duty status

You can manually change your duty status on the **Dashboard** by tapping your current duty status near the center of the screen.

The main driver can change his or her duty status to **ON DUTY**, **OFF DUTY**, **SLEEPER BERTH**, or **DRIVING**.

Co-drivers can change their duty status to **ON DUTY**, **OFF DUTY**, or **SLEEPER BERTH**.

Using yard moves and personal conveyance

Start and end yard moves or personal conveyance by tapping the buttons at the bottom left of the **Dashboard**.

When using either of these special driving conditions, you should be aware of the following:

Yard Moves

- You must be **ON DUTY** to start yard moves.
- A duty status confirmation dialog appears when you start yard moves.
- You will remain in yard moves until you either manually end YM or turn the vehicle ignition off. **IMPORTANT:** Yard moves does not automatically end when you drive above a certain speed or when you drive more than a certain distance.

Personal Conveyance

- Personal conveyance is meant for drivers that drive their commercial vehicle between their home and office. It allows you to drive your vehicle without accruing **ON DUTY** or **DRIVING** hours.
- You must be **OFF DUTY** to start personal conveyance.
- A duty status confirmation dialog appears when you start personal conveyance.
- While in personal conveyance, your duty status remains **OFF DUTY** and your location is recorded with reduced accuracy for privacy.
- Unless you manually end personal conveyance, you will remain in PC until the next ignition cycle. On the next ignition cycle, before moving the vehicle, you will be asked to confirm you are still in PC. **IMPORTANT:** If you do not confirm and start driving, your duty status will automatically change to **DRIVING**.

Specifying exemptions

Tap Exemptions List near the bottom right of the screen and then select any applicable HOS exemptions.

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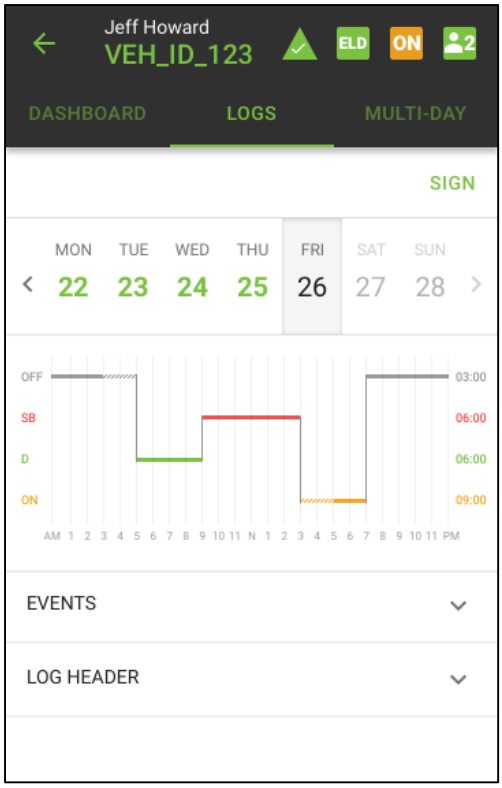
Logs

On the **Logs** tab, you can:

- Review & sign your daily logs
- Add or edit duty status changes



Signing logs

Tap **Sign** near the top right to sign the currently selected day's log. Use the calendar slider to switch between days.

- Dates shown in **green** have been signed.
- Dates shown in **black** have not been signed.
- Dates shown in **red** have been edited by your carrier (and have not been signed).

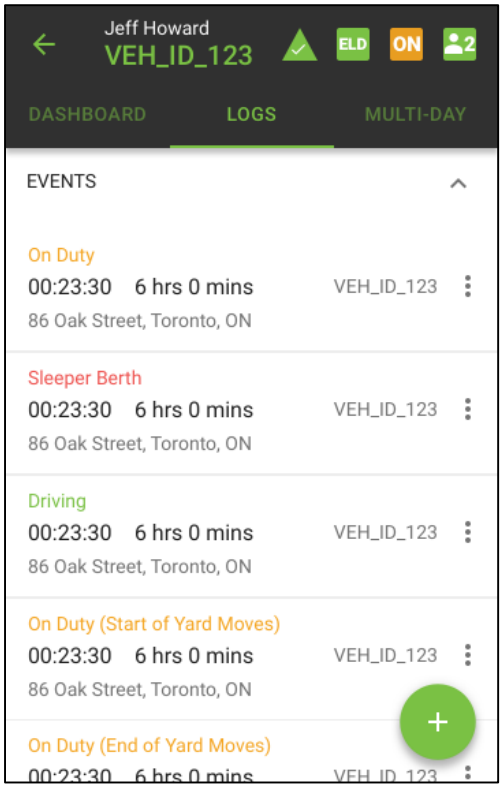
Adding or editing a duty status change

You can add or edit duty status changes. For example, if you forgot to go on-duty at the beginning of your shift, you will need to edit the time at which you went on-duty.

1. Tap **Events** near the bottom of the screen.
2. To create a new duty status change, tap **+** near the bottom right. To edit an existing event, tap ⋮ and then tap **Edit**.
3. Specify the **Status**, **Address**, and **Start Time**, and then enter a **Comment**.
4. Tap the green checkmark at the bottom right to save.

Note: All previously recorded events are still saved, and are displayed in the list with a **grey** background.

For days you did not work, the last duty status of your last working day will be carried forward.



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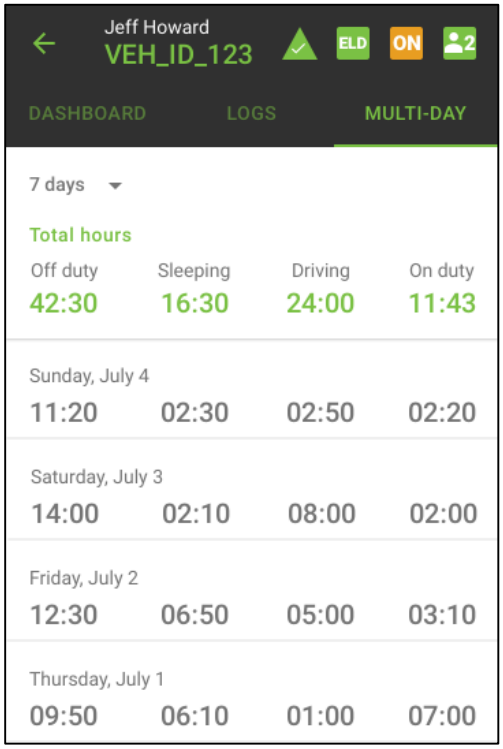
Multi-day view

You can see a 7-day or 8-day summary of your HOS activity. Tap the drop-down list at the top left to switch views:



Automatic duty status changes

As part of ELD compliance, the following events are recorded automatically:

- If vehicle movement is detected and the driver is not in yard moves or personal conveyance, then the driver's status will change to **DRIVING**.
- If the vehicle has been stopped for 5 minutes, a dialog appears asking the driver if their status should remain **DRIVING** or be changed to **ON DUTY**.
    - If the driver does not make a selection within 1 minute, their status will change to **ON DUTY**.

There are currently no other situations where the driver's duty status will change automatically.

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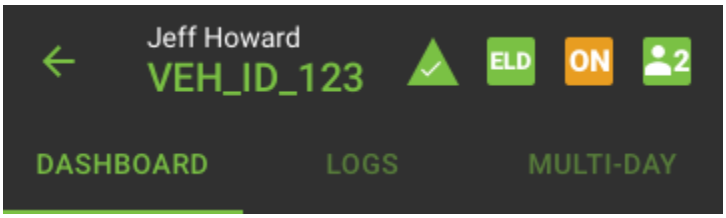
HOS header and indicators

There is a header displayed along the top of all HOS screens that shows the current driver and vehicle, the device's connectivity status, the driver's current duty status, and whether any co-drivers are logged in:



The indicators on the header are important for ELD compliance. See the following sections for more details.

Note: Data diagnostic and ELD malfunction events are cleared by the app once the issues are resolved.

Data diagnostic indicator

The triangle indicator in the HOS header will alert you of any data diagnostic errors:

- This indicates the device is working correctly.
- This indicates there is a data diagnostic event. Tap the icon to view details.

See the following table for a list of data diagnostic events.

Data diagnostic events

Requirement No.	Diagnostic Code	Event Name	Description
4.6.1.1	**1**	Power Diagnostic	Loss of connectivity to the locator/box
4.6.1.2	**2**	Engine Synchronization Data Diagnostic	ECM communication issue
4.6.1.4 (d)	**3**	Missing Data Elements Diagnostic	No valid GPS data at the time of logging a driving event when the driver cannot enter the location manually
4.6.1.7	**4**	Data Transfer Diagnostic	Issue with data transfer service
4.6.1.6	**5**	Unidentified Driver Diagnostic	More than 30 cumulative minutes of unidentified driving in a 24-hour period
4.6.1.8	**6**	Other Diagnostic	This diagnostic code has the following subsections: • **61** – Box pairing issue • **62** – Device Wi-Fi is disabled • **63** – Sync failure • **64** – No connection to ELD server

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ELD malfunction indicator

The rectangle indicator in the HOS header will alert you of any ELD malfunction errors:

- ELD This indicates that you are ELD compliant.
- ELD This indicates there is an ELD malfunction. **IMPORTANT:** You will need to contact your carrier to clear the malfunction.

See the following table for a list of ELD malfunction events.

ELD malfunction events

Requirement No.	Malfunction Code	Event Name	Description
4.6.1.1	**P**	Power Compliance Malfunction	More than 30 cumulative minutes of "Power Data Diagnostic" events in a 24-hour period
4.6.1.2	**E**	Engine Synchronization Malfunction	More than 30 cumulative minutes of no ECM connectivity in a 24-hour period
4.6.1.3	**T**	Timing Malfunction	The difference between ELD time and UTC exceeds 10 minutes
4.6.1.4	**L**	Position Malfunction	More than 60 cumulative minutes of no GPS on driving events in a 24-hour period
4.6.1.5	**R**	Data Recording Malfunction	The ELD storage is full and can no longer record events
4.6.1.7	**S**	Data Transfer Malfunction	Once a data transfer data diagnostic event is generated, the monitoring frequency increases from once every 7 days to once every 24 hours. A data transfer malfunction is generated if the ELD stays in the unconfirmed data transfer mode following the next three consecutive monitoring checks.
4.6.1.8	**O**	Other Malfunction	N/A

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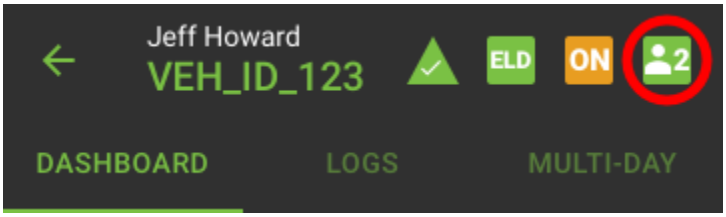
Co-driver operation

Co-drivers can log in by tapping the driver icon at the far right of the HOS header:



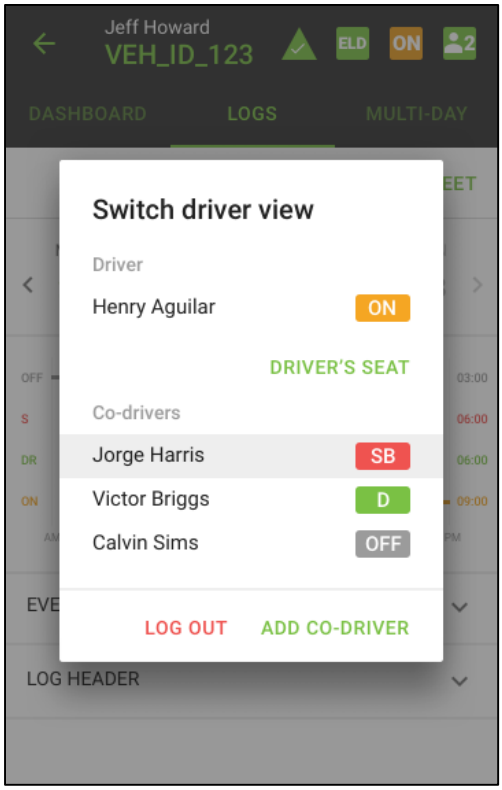
Once the co-driver logs in, the active driver can be swapped between the co-driver and the current driver. The vehicle must be stopped to do this.

Co-drivers can change their duty status on the HOS **Dashboard** to **ON DUTY**, **OFF DUTY**, or **SLEEPER BERTH**. Co-drivers can also review their log history and edit or sign their logs.

Switching seats

Co-drivers can switch seats with the main driver by tapping the driver icon at the far right of the HOS header. The vehicle must be stopped to do this.

Once seats are switched, the main driver becomes the co-driver.



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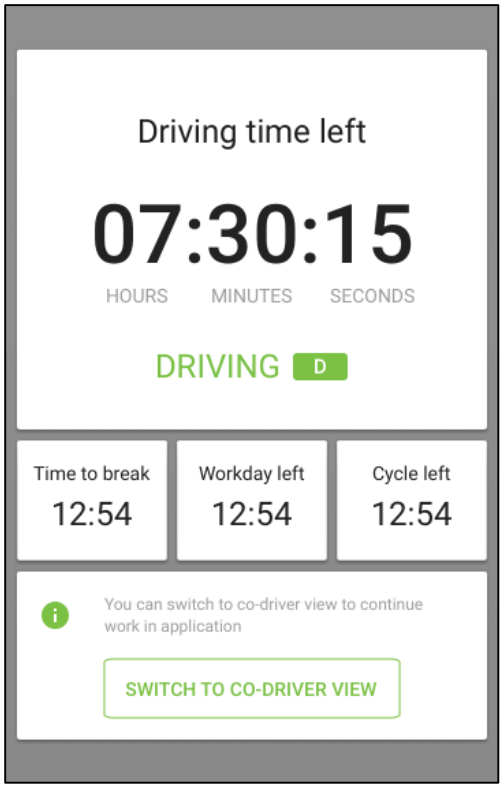
Lock screen

Due to distracted driving regulations, the screen is locked while driving. The lock screen displays an overview of your HOS.

If you have a co-driver, he or she can tap **Switch to co-driver view** to use the app while the vehicle is moving.



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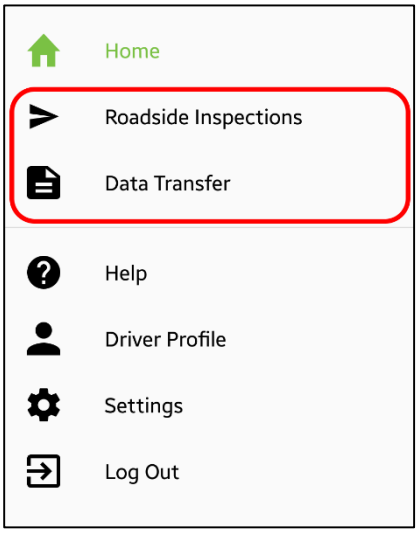
Roadside Inspections & Data Transfer



For roadside HOS compliance inspections, you will need to present your HOS logs.

You can present your logs for inspection in the following ways:

1. In **Roadside Inspections**, display your logs in the app and then give the compliance officer access to your device.
2. In **Data Transfer**, either:
    a. Email your logs to the compliance officer.
    b. Use the web transfer feature to upload your logs to the FMCSA.

Displaying your logs on your device

You can display your logs in the ELD app and then let the officer review your logs directly on your device. This method is convenient for situations where you don't have reliable network coverage, or if your device can be easily detached from its mount.

In the app's main menu, tap **Roadside Inspections** and then give the compliance officer access to your device.

On the screen, the officer can switch between days using the calendar slider, and will see the following information for each day:

- Your driver information
- The vehicle's odometer and engine hours
- An HOS duty graph
- A list of all duty status changes

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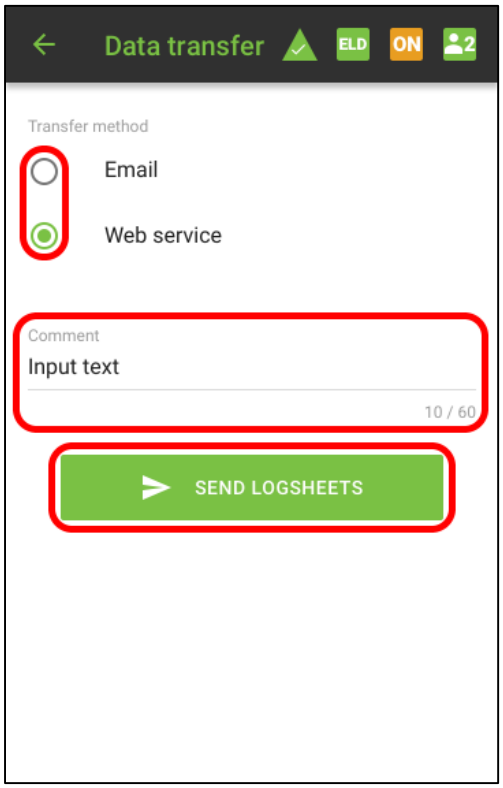
Transferring your logs

You can transfer your logs to the officer for inspection. Note that this requires an internet connection.

You can either email your logs to the inspection officer's email address, or use a web service to upload them directly to the FMCSA servers:

1. In the app's main menu, tap **Data Transfer** and then select either the **Email** or **Web Service** radio button.
2. If you selected **Email**, enter the inspection officer's email address in the text field.
3. (Optional) Enter a comment in the text field.
4. Tap **Send Logsheets**.
5. A confirmation dialog appears. Tap **Confirm** to send your logs via the selected method.



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