LOADMAN® LoadCoder® ANDROID APPLICATION REFERENCE GUIDE

FOR

UNDERBODY SYSTEMS

Revision 01.0

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SAFETY WARNING

Using this system while operating a motor vehicle may be distracting, dangerous, or prohibited. The operator remains responsible for safe travel, should obey laws and regulations, and should always exercise good judgment. Failure to pay full attention to the operation of the vehicle may cause an accident resulting in serious consequences.

You assume sole responsibility and risk for using this system.

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INTRODUCTION

INTRODUCTION

The LoadCoder® Android Application (App) is a software program capable of running and controlling many different underbody measurement systems. The App documented in this manual is programmed for trucks with single axles, trucks & trailers with tipping bodies (or dump trucks), cart tippers, freight trucks with trailers, logging trucks, or other trucks with similar layouts. The application documented in this manual pairs with the *LOADMAN®* LM200 meter to automatically weigh loads recorded by the meter. This App keeps a running total of the NET contents dumped with each load and the measured load dumped can then be attributed to a Refuse Customer's Account and stored in the cloud that can be accessed by a typical web browser in real time if the tablet has a cellular service.

The *LOADMAN®* system is completely automatic and the driver/operator does not have to press any buttons or take any actions to obtain a weight reading. The Android device display provides all the information needed to understand the status of the weighing system. The container load weights are measured and reported to the operator as a net load weight. Also, the dumped load weights are accumulated with the weight of the existing material in the vehicle – providing the driver/operator a running total of the net vehicle weight or the gross vehicle weight. This application not only supports weighing of the net contents dumped into the truck but also records the measured load data with optional route, account and GPS data. The *LoadMan®* underbody system consists of the components identified in **VERIFY WIRING** below.

INTRODUCTION

LoadMan®'s Load Management Software (runs from a web browser) manages a cloud database that allows remote tracking of trucks, drivers, customers, routes and products by account or job. Route lists are created with the Load Manager Software and if the tablet has an internet connection it will automatically synchronize its cloud database data to the *LoadMan*® Android LoadCoder® App. Any recorded load data and/or GPS position data in *LOADMAN*®'s data collection memory will be automatically transferred to the Load Management Software - without any prompting or intervention from the driver – whenever an internet connection is established. *LoadMan*®'s Load Management Cloud Software allows several powerful automatic customer identifications using Google Maps and GPS coordinates of load pickups and events as they happen in the field. Other options like RFID container identification are supplied and supported as an option allowing accurate customer/container identification.

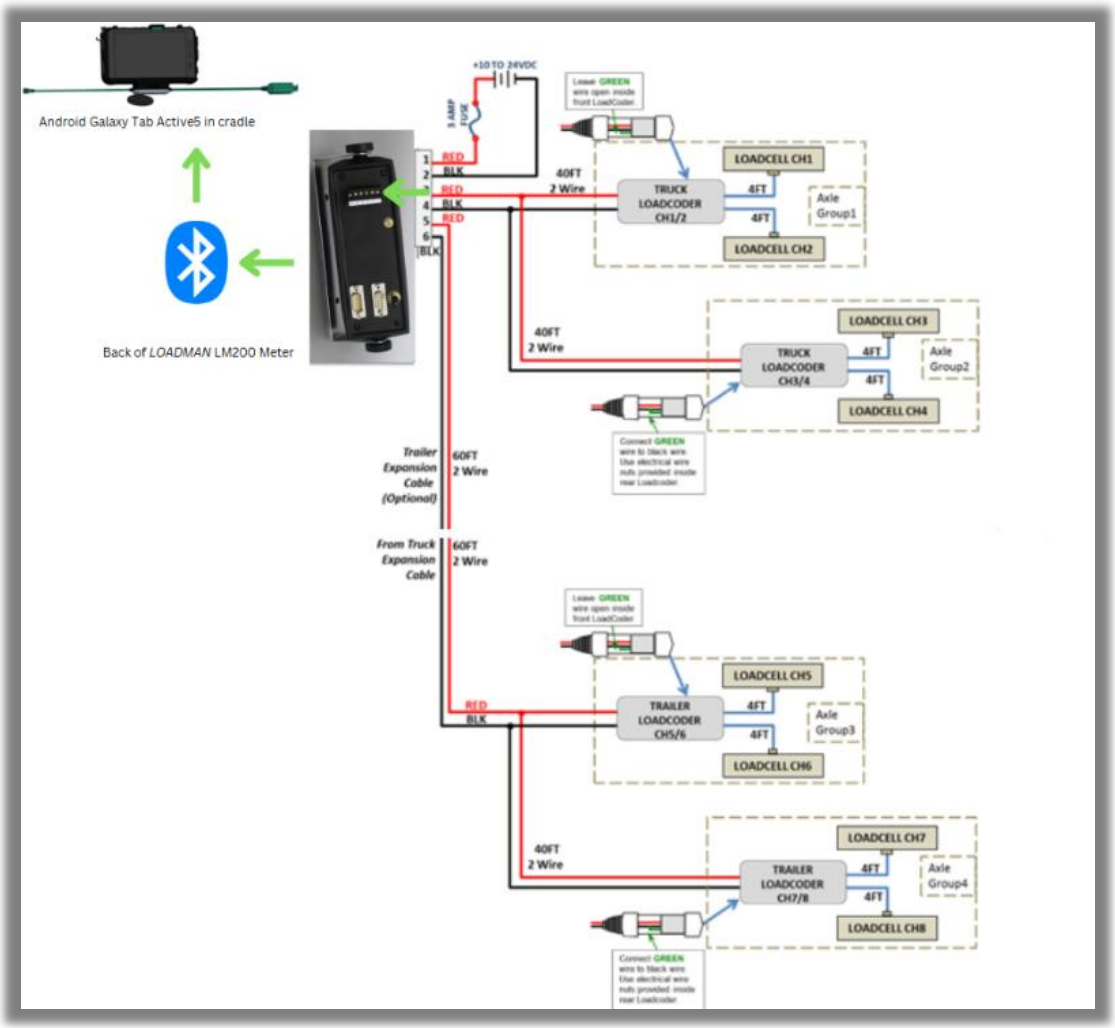
STARTUP AND CALIBRATION

INITIAL STARTUP AND CALIBRATION

The instructions in this section provide a step-by-step process for verifying and calibrating a newly installed *LOADMAN*® Underbody system.

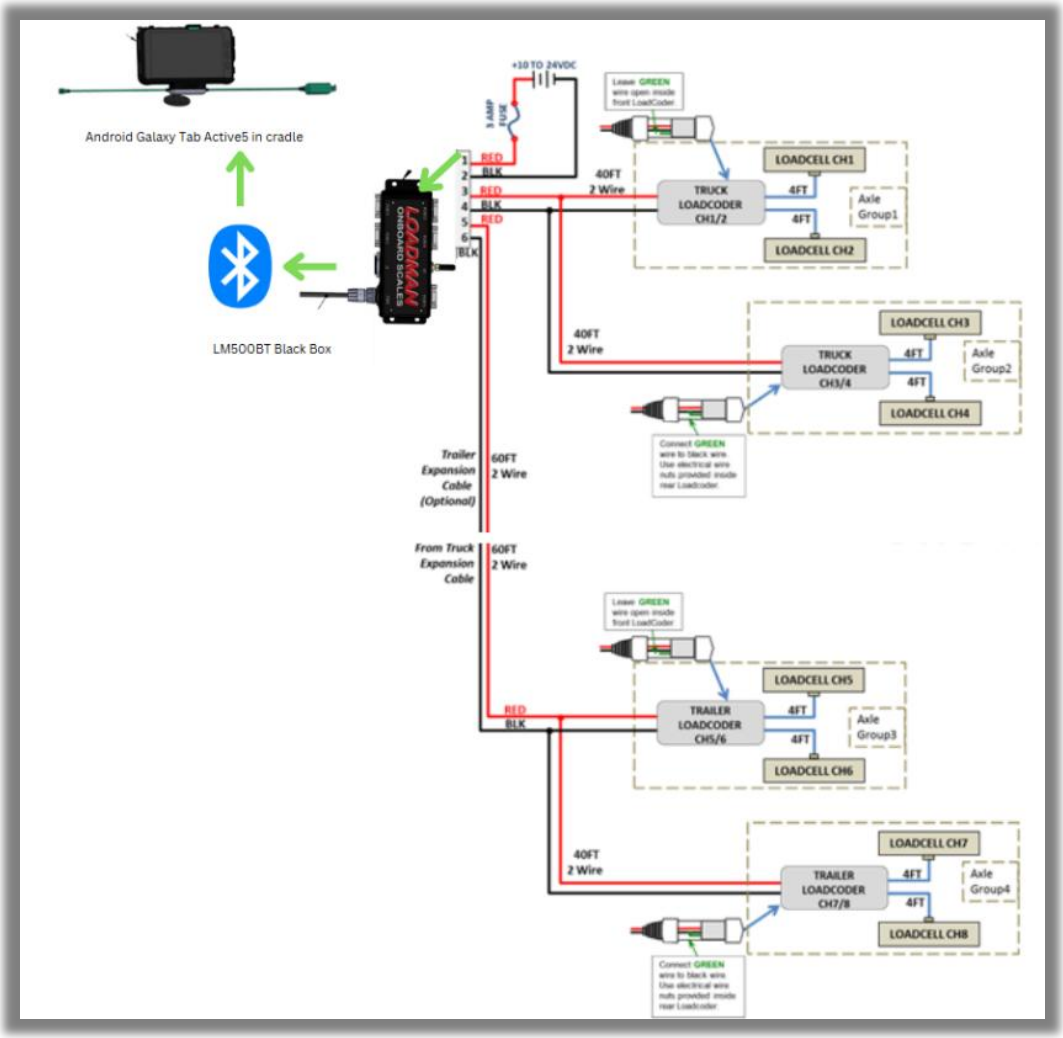
VERIFY WIRING

Begin by verifying that the electronics are wired per the wiring diagram shown below.



With LM200 Meter

STARTUP AND CALIBRATION



With LM500BT Black Box

- Verify the Android device is charging in its cradle or is connected to a charging USB cable.
- Positive 10VDC to 16VDC should connect to the *LoadMan*® 500 Black Box.

Note: these diagrams show the largest possible set up for the Underbody System (freight truck with 4 axle groups, 4 LoadCoders, and 8 Loadcells). For more wiring configurations see (**WIRING DIAGRAMS**)

STARTUP AND CALIBRATION

POWER ON

Tap on the *LoadMan*® Icon on the Android device. Navigate through the startup screen, see **STARTUP** for more details.

TRUCK APPLICATIONS

TRUCK APPLICATIONS

The *LOADMAN®* Weighing System can be configured to support a wide array of truck applications – trucks with single axles, trucks & trailers with tipping bodies (or dump trucks), freight trucks with trailers, logging trucks, or other trucks with similar layouts. The *LOADMAN®* meter comes pre-configured for a 4-Point Underbody Weighing System and can be easily programmed to support five other default truck applications.

4-POINT UNDERBODY WEIGHING SYSTEM

Shown here is *LOADMAN®'s* factory default configuration – a 4-Point Underbody Weighing System for a Truck with 1 Axle Group.

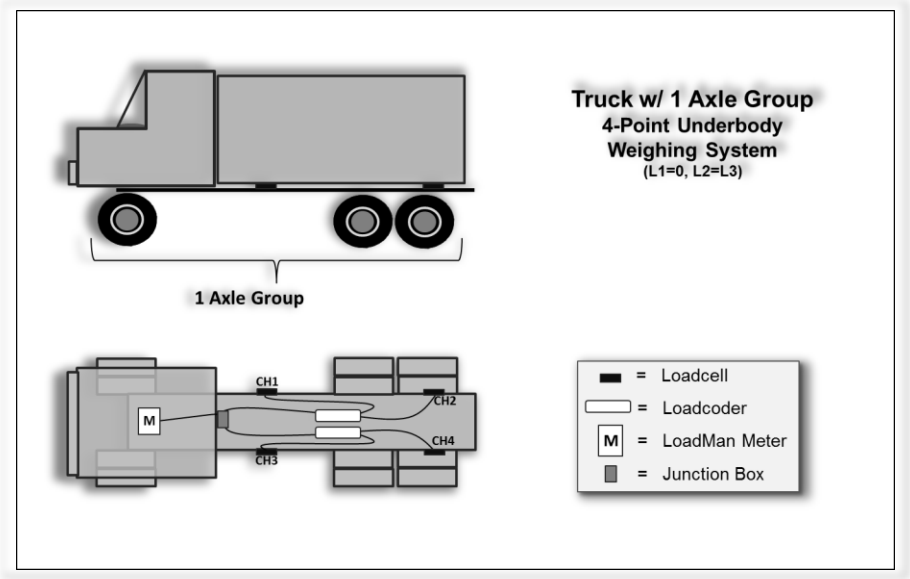


Figure 1. Four Point Underbody Weighing System for Truck With 1 Axle Group

Table 1 lists the *LOADMAN®* settings that are factory configured for this particular truck application. These settings should support most 1-axle group vehicles, but LoadCoder® can be easily programmed to support a truck that deviates somewhat from this configuration. Refer to the **SETTINGS (OFFLINE)** section to learn the programming instructions for changing any of these listed settings.

Table 1. Four Point Underbody Weighing System – Default Settings

TRK CONFIG	
TRUCK HAS	1 AXLE
STEER AXLE	OFF
TRK WEIGH	-90000
TLR CONFIG	

TRUCK APPLICATIONS

TRAILER	NONE
CELL ASSIGNMENTS	
CH1 thru CH4	AXLE1
CH5 thru CH8	IGNORE
DISPLAYS	
DISPLAY UNITS	LB/KG*
CYCLE	2 sec
COUNT BY	100/50*
SHOW TOTAL	NO
SHOW TARGET	NO
SHOW TRUCK	NO
SHOW TRAILER	NO
SHOW AXLE 1/2 & 3/4	NO
ACCOUNTS	0 (zero)
PRODUCTS	0
PROBLEMS	0
FLASH LDNAME	NO
FLASH ACCT#	NO
FLASH STOP#	NO
FLASH PRODUCT	NO
FLASH PROBLEM	NO
FLASH OVERLD	NO
MODEM	
MODEM OPTION	NO
MODEM	USA
CONN	600 sec
RemoteIP1	74
RemoteIP2	93
RemoteIP3	98
RemoteIP4	177
GPS	
NextLOG	20 SEC

RECORD	
RECORD&PRINT	ON
INCR STOP #	ON
SBRD CAPTURE	OFF
REMOTE SWBOX	OFF
AUTO RECORD	OFF
RS232	
BLUETOOTH	OFF
BAUD RATE	9600
TICKET PRINT	ON
BARCODE READ	OFF
PRT LOADNAME	NO
PRT ACCOUNT	NO
PRINT STOP#	NO
PRT PRODUCT	NO
PRT PROBLEM	NO
PRINT TOTAL	NO
PRINT TRUCK	NO
PRT TRAILER	NO
PRINT STEER	NO
PRINT AXLE 1/2/3/4	NO
PRINT HEADING	NO
LINE FEEDS PORT #1	1
LINE FEEDS PORT #2	2
FILTER	LIGHT
SECURITY	OFF
TROUBLESHOOTING	
CH1 thru CH8 SPAN	20000
CH1 thru CH8 ZERO	0
TARE SETTINGS	
All TARE's	0

*** = English/Metric Setting**

Note: This table shows default settings based on the LM200 *LOADMAN*® meter. While most of these settings apply similarly to the LoadCoder® App, certain configurations or features may differ slightly due to platform-specific differences. Always refer to the LoadCoder® App's **SETTINGS (OFFLINE) or (ONLINE)** sections when making adjustments on the Android device.

TRUCK APPLICATIONS

CHOOSING OTHER SUPPORTED TRUCK APPLICATIONS

There are six truck applications pre-configured by *LoadMan®*:

Table 2. Default Truck Applications

LoadMan® Display	Description
UNDERBODY 4POINT	4-Point Underbody Weighing System Truck with 1-Axle Group (Factory Default)
UNDERBODY 6POINT	6-Point Underbody Weighing System Truck with 1-Axle Group
TRK TIPPING BODY	Tipping Truck with 2 Axle Groups
TRK&TLR TIP BODY	Tipping Truck & Trailer With 3 Axle Groups
TRUCK 2 AXLES	Freight Truck With 2 Axle Groups
TRK&TLR 4 AXLES	Freight Truck & Trailer With 4 Axle Groups

Figure 1 thru Figure 6 illustrate these six truck applications. Any of these applications can be set up and configured with some simple programming of the LoadCoder® App. (Programming the LoadCoder® App is covered in the **SETTINGS (OFFLINE)** section).

Note: These diagrams are adapted from the *LOADMAN®* LM200 meter manual. The Android tablet would be included where the *LOADMAN®* meter is located in the cab of the truck

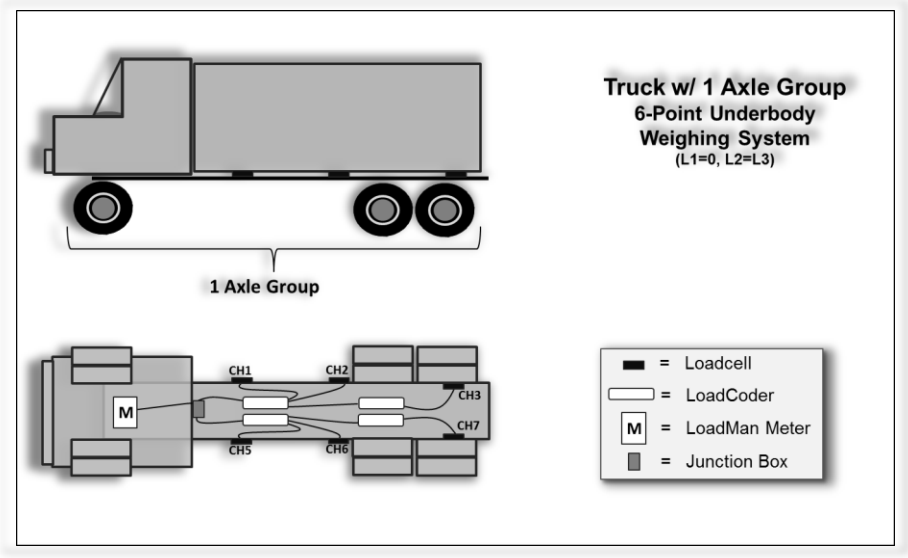


Figure 2. Six-Point Underbody Weighing System – 1 Axle Group

TRUCK APPLICATIONS

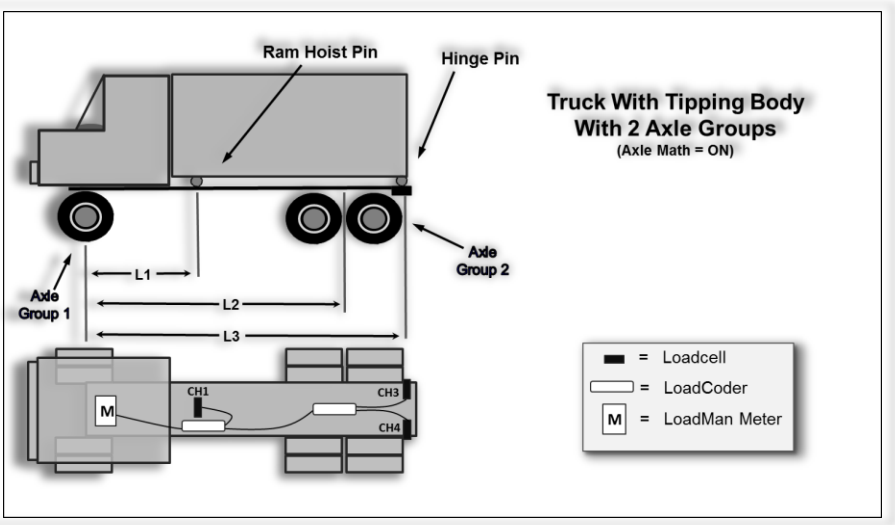


Figure 3. Truck with Tipping Body – 2 Axle Groups

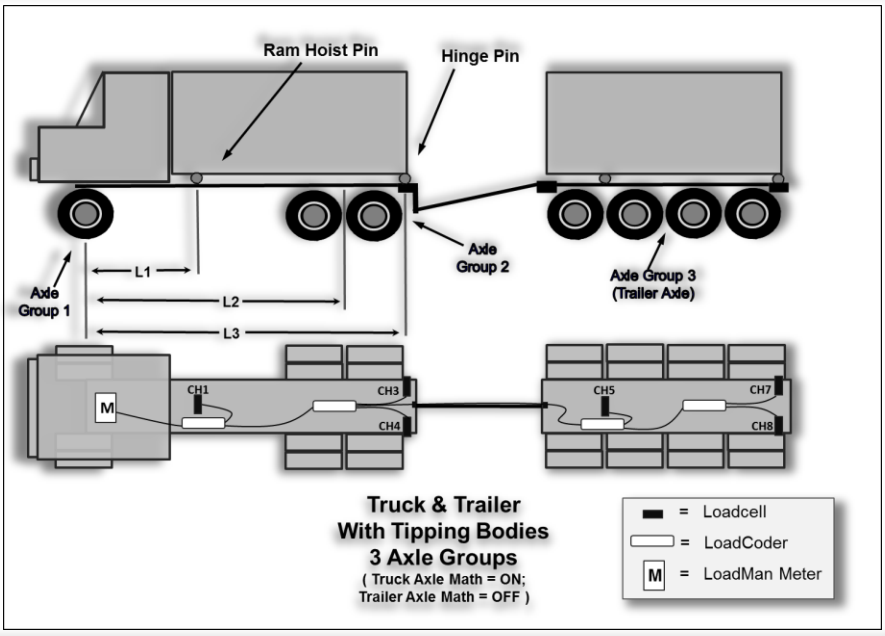


Figure 4. Truck & Trailer w/ Tipping Bodies – 3 Axle Groups

TRUCK APPLICATIONS

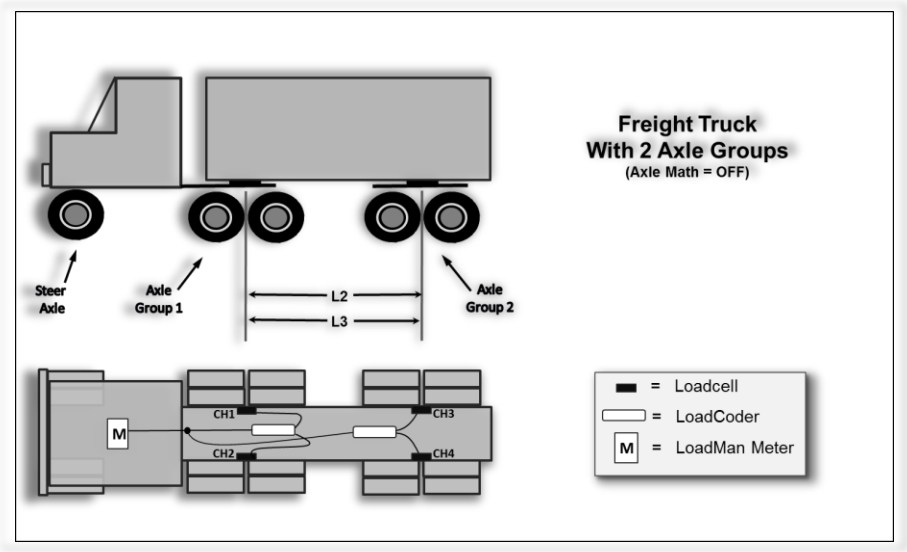


Figure 5. Freight Truck – 2 Axle Groups

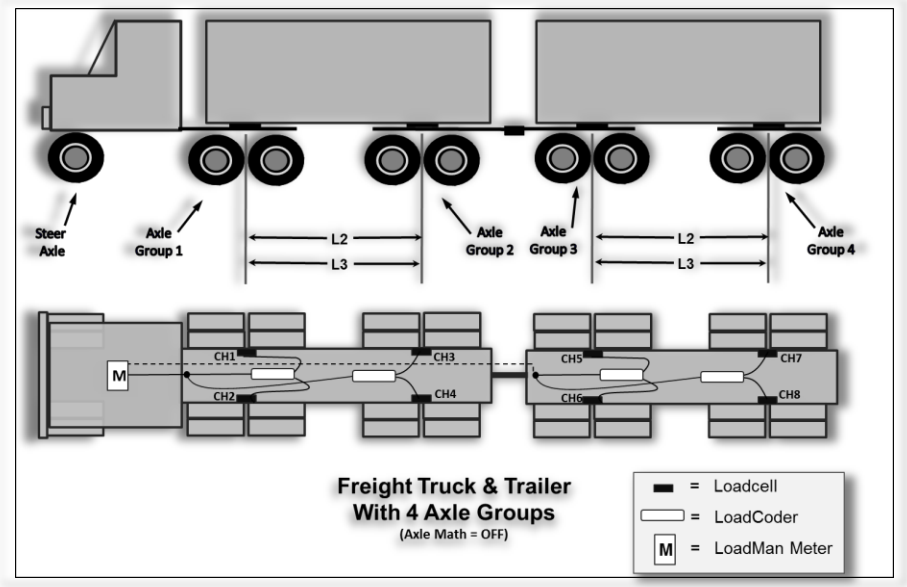


Figure 6. Freight Truck & Trailer – With 4 Axle Groups

L1, L2, L3 – AXLE-TO-AXLE & AXLE-TO-LOADCELL MEASUREMENTS

In order to obtain accurate weight measurements, it's important that the distances between the axles and the loadcells are programmed into AXLE MATH (see **AXLE MATH** in **TRUCK APPLICATIONS**). These distances are named L1-L3:

- **L1** Distance between the first axle and the front loadcell.

TRUCK APPLICATIONS

- **L2** Distance between the first axle and the second axle.
- **L3** Distance between the first axle and the rear loadcell.

These distances must be accurately measured for both the truck and the trailer. An example of a typical L1, L2 and L3 configuration is shown in Figure 4. Truck & Trailer w/ Tipping Bodies – 3 Axle Groups.

AXLE MATH OFF – When only one axle group is configured, *LOADMAN®* will accurately measure the weight of the vehicle and there is no need for entering the L1, L2 or L3 length measurements. Therefore, for these and similar configurations, AXLE MATH should be turned OFF. This is true for both the truck and the trailer.

AXLE MATH ON – When L1 > 0, and L2 ≠ L3, then the L1, L2 and L3 distances must be accurately measured for the truck (and/or the trailer) and configured into LoadCoder®. Therefore, for these and similar configurations, AXLE MATH should be turned ON.

For configuring the truck and/or trailer for AXLE MATH ON and instructions for entering L1, L2 and L3 measurements, see the **CONFIG** section in **SETTINGS (OFFLINE).**

MEASURING THE STEERING AXLE WEIGHT

In *LOADMAN®*'s default applications there are no Loadcells or transducers used to measure the weight on the steering axle. *LOADMAN®* uses the fact that for each load measured on axle group 1 (known as the 5th wheel), a certain percentage of the axle 1 load is transferred to the steering axle. LoadCoder® learns this load transfer percentage during calibration.

To view the steering weight in the NET, GROSS or LOAD operating mode, turn STEER AXLE ON while configuring the truck (see the **SETTINGS (OFFLINE)** section).

STARTUP

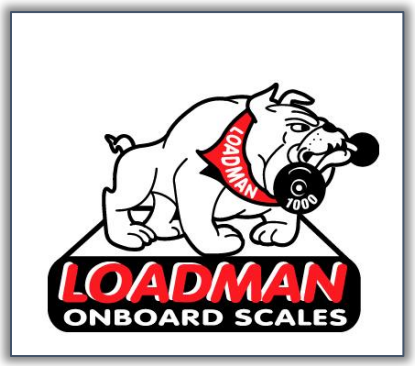
DOWNLOADING THE LoadCoder® APPLICATION

- To download the LoadCoder® Android Application, first open a web browser on your Android device. This can be a program like Chrome or the Samsung “Internet” app.
- Navigate to www.loadmansoftware.com with the web browser.
- Tap on the button that says, “Underbody Software” then select “Loadman LoadCoder”. This will download a file with the extension .apk to the Android device.
- You will see a small pop-up at the bottom of the screen that says “open file” click on this when you see it.
- If the pop-up goes away, exit the web browser and find an app on the device called “My Files”.
- Locate the downloads folder in the “my files” app. You should see the .apk file.
- Tap on the .apk file to install the application.
- Android may ask you to enable installing applications from unknown sources for the app you are using (internet browser or my files). Follow the instructions and enable installing applications.
- If you had to enable installing applications from unknown sources, return to “my files” and install the application by tapping on it.
- Once installed, open the Application. Allow all permissions the App asks you for.
- If displayed is a box labeled “Enter License Code”, enter your 6-character license code or contact *LoadMan*® for a license.

STARTUP

STARTING UP THE LoadCoder® APPLICATION

Find the *LoadMan®* Icon on the Android Device. Tap on it and the LoadCoder® App will start up. The Icon looks like the image shown below.



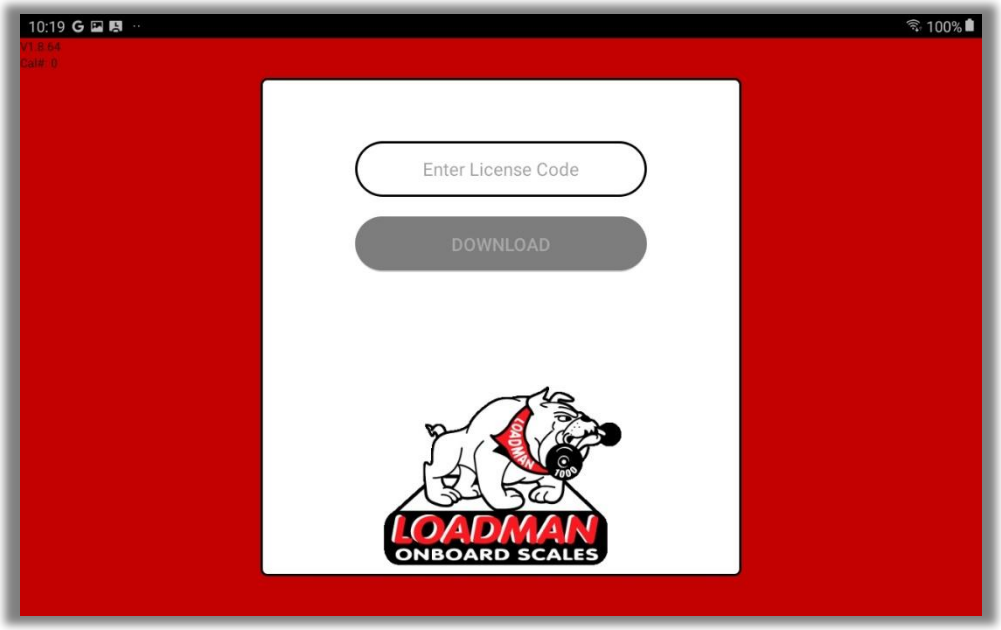
LOADMAN

The Startup screen pops up and shows the *LoadMan®* Logo for 1-2 Seconds.

STARTUP

LICENSING THE LoadCoder® APPLICATION

If the LoadCoder® App has never been licensed, then after the start up screen, an “Enter License” screen will appear. Entering a license code provided by *LoadMan*® gives the Tablet instructions on how to properly connect to the correct customer’s cloud database that the Tablet is licensed to. If the LoadCoder® App has already been licensed properly, then the screen below is bypassed.



- First, a six-character license code must be obtained from *LoadMan*® On-Board Scales. Enter the code provided in the text box by tapping on “Enter License Code” and a keypad will appear to enter the six-character code provided. Once entered correctly tap on the “DOWNLOAD” button. If successful, the App will show “Downloading License” then will go on to either a driver login page or will display “Scanning for Trucks”.
- You can re-license an app by tapping on the small shield with a checkmark on it in the lower bottom corner of the screen when the App is first launched. Once the shield is clicked, a text field to enter a license code will be presented.

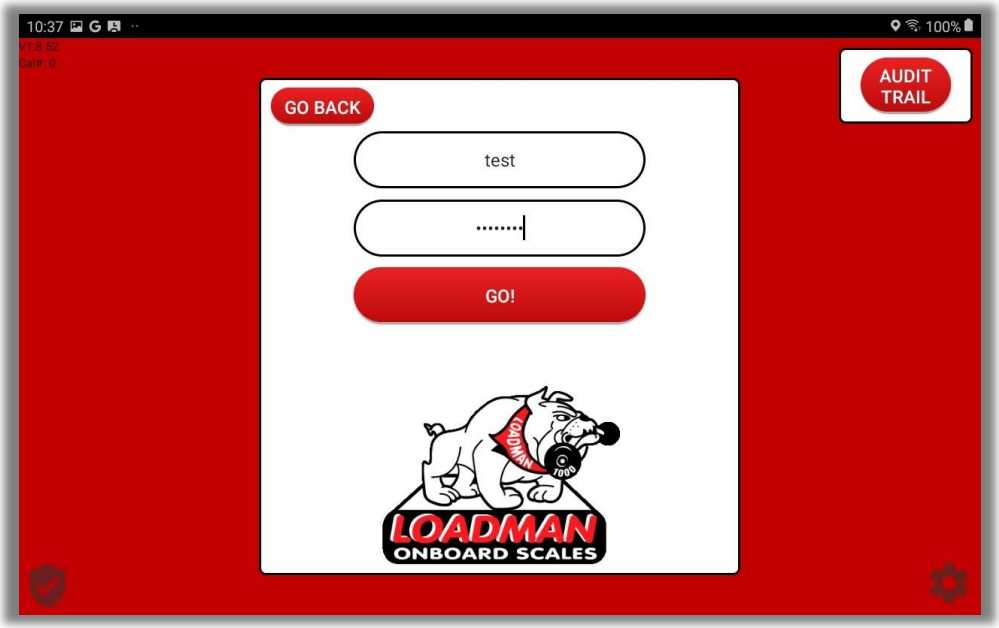
STARTUP

STARTUP FOR ONLINE APPLICATIONS

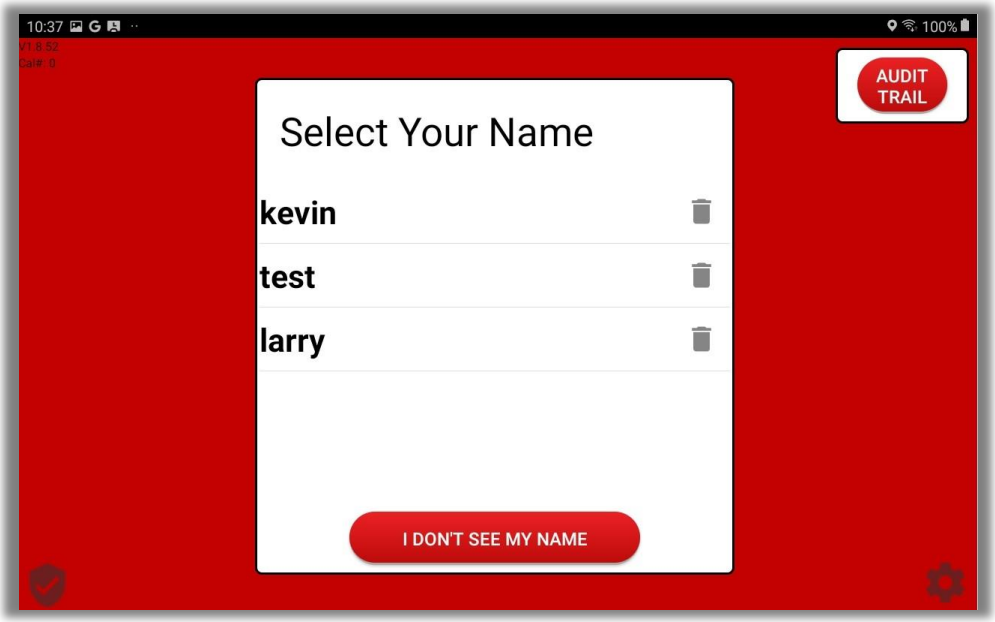
- If it is desired that the App be “online”, meaning it will send load data to the cloud as well as receive data (routes, stops, services etc.) from the cloud (see **LOADMAN SPOTLIGHT DATABASE)**. the startup process will involve 3 main steps: 1) Logging in as a driver, 2) Connecting to the truck, 3) Selecting the route. If the driver login is not desired, then later in the initial setup you can set up the LoadCoder® App to bypass the driver login screen and it will default to the driver that last logged in successfully and skip the driver login screen automatically. If you are using the driver login option, and there is only one driver in the cloud database then you will see the driver and password screen appear shown below. Also, once you log in you can program a setting to forget the password entry altogether. Some users may not want to spend the time needed to enter a password, but others may want to protect who runs the App by using passwords.
- The Program Version of the LoadCoder® App is shown in the upper left corner of the display in small lettering for reference.

  The “Logging in as a Driver” screen will look like the screen below

STARTUP



If there are multiple drivers in the cloud database, then you will see a screen below with all the possible drivers and you must tap on your name to select the correct driver. Once you do that the password screen comes up.



STARTUP

- Beforehand, a driver and password must be set up. This can be done online using *LoadMan®*'s Driver Portal. Once a driver has been made, simply log in by entering their name and password and tap on "GO".
- An internet connection is needed to log in as a driver who has never logged in before. After a driver has logged in once, an internet connection is not needed to log in as that driver.
- Once a driver has logged in at least once, their name will be displayed on a list right when the App starts. If you want to log in as that driver, simply tap on their name and enter their password.
- If you want to log in as a driver and their name is not on the list, tap on "I don't see my name" at the bottom on the screen, enter the driver's login credentials and tap on "Go". This could happen if the driver has never logged into the LoadCoder® App before.
- To remove a driver in the list, tap on the trash can icon to the right of their name.
- THERE MUST NEVER BE THE SAME DRIVER LOGGED IN TO MORE THAN ONE INSTALLATION RUNNING IN A FLEET. THIS IS NOT ALLOWED.

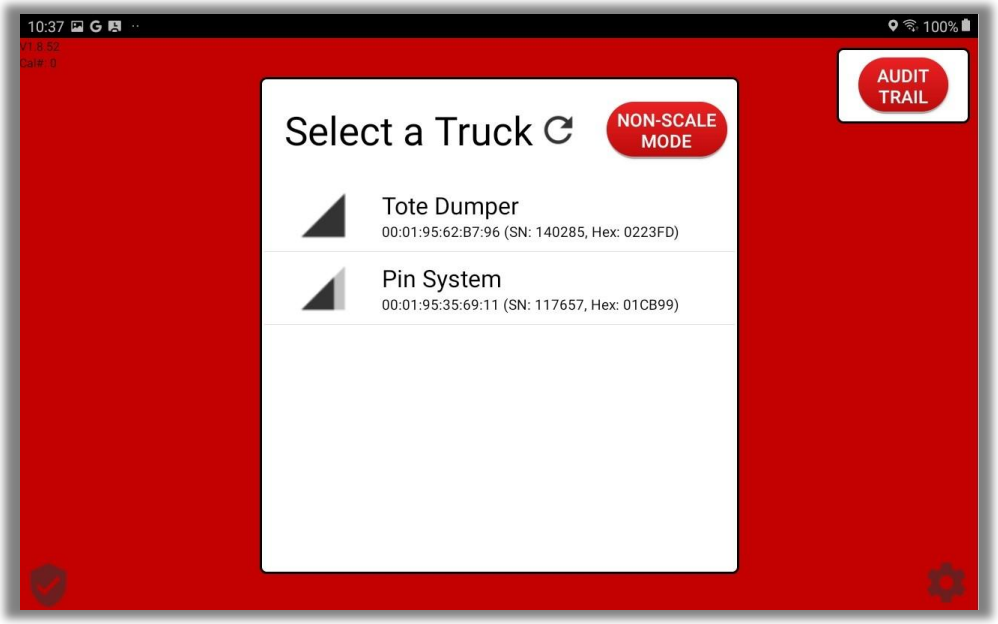
SKIPPING THE DRIVER LOGIN:

- Logging in as a driver is needed for the App to function online, as it supplies credentials to use our API. However, if it is not desired to have drivers be kept track of by having them enter their own password, the driver login can be skipped once a driver has logged in at least once. An option to enable "Skip Driver Login" can be found in the **MISC** page (see **SETTINGS (OFFLINE)**). Once enabled, the driver's name that appears at the top of the driver's name list will automatically be logged in upon startup.
- Alternatively, if you do want to keep driver tracking, but don't want to have the drivers bother with passwords, you can enable a setting to skip the password entering screen but still require someone to tap on a name.

STARTUP

- Finally, a driver's name and password can be set up in the license for the app, so that from license download, a driver will automatically be logged in.
- If the first thing you see when you start the LoadCoder® App is "Logging in", driver login skipping has been enabled. If you want to disable this, simply uncheck it in **SETTINGS** > **MISC**.

CONNECTING TO A TRUCK USING THE WIRELESS BLUETOOTH OPTION



- The App will display "SCANNING FOR TRUCKS" and it will display all licensed *LoadMan®* devices within Bluetooth range. To connect to a truck, tap on one of these devices.
- If you are stuck on "SCANNING FOR TRUCKS" and nothing is popping up on the screen, there are a few things you can do. First, open the main "Settings" app on the Android device, then go to Connections > Bluetooth and scan for available devices. Make sure nothing is paired to the Tablet having "Loadman" in its friendly name. If there are, then unpair it and hit "scan" again. If you now see a "Loadman" device under "Available Devices" then a *LoadMan®* device is in communication range. Again, make sure it is

under Available Devices and NOT Paired Devices. Once it shows up, restart the LoadCoder® App and it should come up properly.

- If still nothing is showing up it may be that there are no *LoadMan®* devices in range to connect to. Contact *LoadMan®* as something could be wrong with your license.

CONNECTING TO A TRUCK USING THE USB WIRED RS232 OPTION

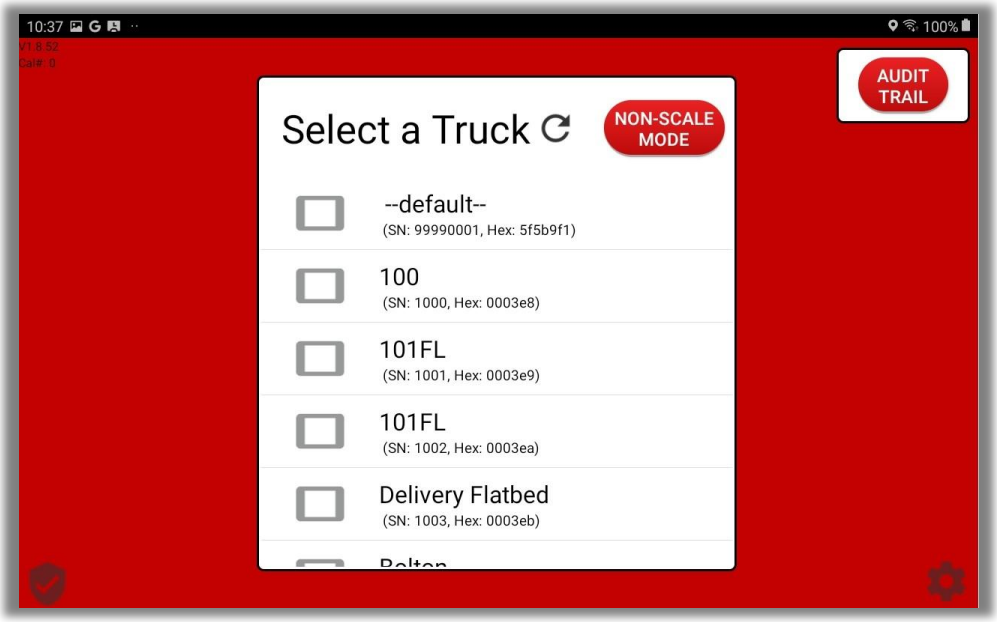
- Plug in the USB cable from the scales to the Android device's USB port. Android may ask you to enable serial communication for the connected device. Tap the "allow" option to enable this. It may also ask if you want to automatically launch the LoadCoder® App when the USB device is connected. Also allow this and either start the App yourself or let the App start automatically. Once the LoadCoder® App has started, it should automatically connect and begin communicating with the scales.
- If you open the app and see "SCANNING FOR TRUCKS" even though the USB device is connected, unplug the USB cable from the device and plug it back in again. If that still does not work, restart the Android device. If it still does not work, contact *LoadMan®*.
- If you see a message pop up that gives a scale system serial number and says, "Scales not Licensed" contact *LoadMan®* to fix your license.

STARTUP FOR OFFLINE APPLICATIONS

Offline Applications operate much simpler than online Applications. Once an App has been licensed for offline screen, you can simply connect a scale system and go on to the main operating mode. See CONNECTING TO A TRUCK under the **ONLINE APPLICATIONS** section for more information. This mode allows the scale to be viewed, set up and calibrated but it does not allow customers or commodities to be associated with a Stop Pickup.

NON-SCALE MODE BUTTON DESCRIPTION

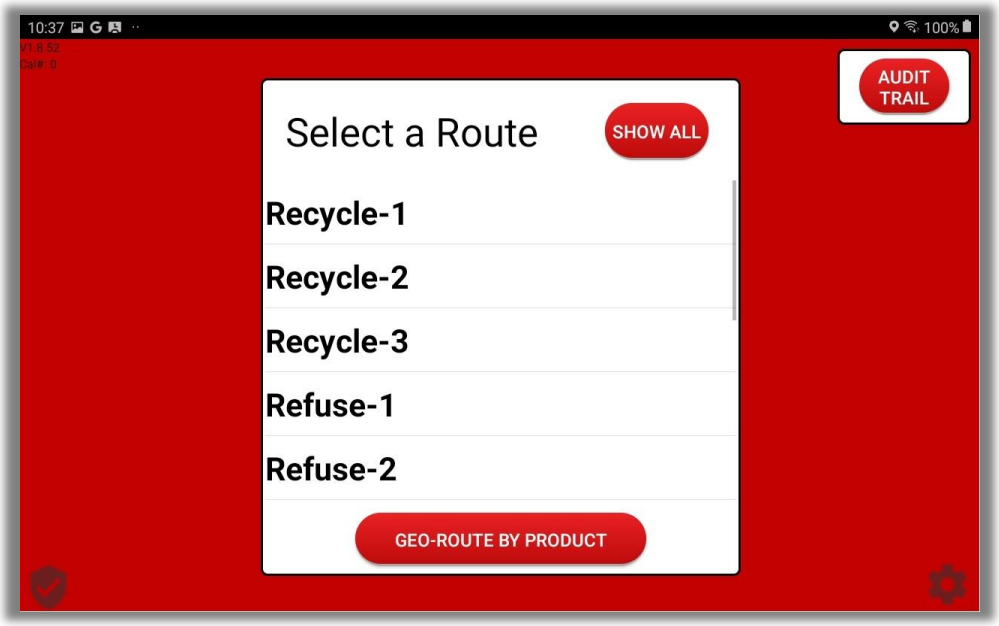
STARTUP



- If there is no truck to connect to, the application can still progress to the normal operating mode where the app can run in the “Non-Scale Mode”.
- On the screen where you see “Scanning for Trucks”, tap on the button towards the top that says “Non-Scale Mode”.
- A scrollable list of all licensed trucks will be presented, tap on the desired truck and all records sent in the normal operating mode will be associated with that truck.
- If it is desired to enter non-scale mode every time the app is launched, an option in **SETTINGS** > **MISC** can be enabled to skip the “Scanning for Trucks” message and display the list of licensed trucks every time.

STARTUP

DOWNLOADING ROUTES:



- A message will display “Downloading Routes”. During this time, all route data information will be downloaded to the Tablet from the licensed database. Depending on the size of the database, this could take a few seconds. An internet connection is required to download the routes initially. After one download, this step can be skipped if there is no internet connection.
- By default, the App attempts to download routes and it if is unsuccessful, it prompts the user to “retry” or “skip.” Tapping on retry will cause the App to attempt to download the routes again, tapping on skip goes on to the route selection screen.
- If it is known that at this step, the App will never have an internet connection, the prompt to retry can be skipped. The setting to do this is in **SETTINGS** > **MISC**.
- Once the routes are downloaded, a list of routes will be shown to the user. Select one by tapping on it to go on to the main operating screen.
- Routes can be assigned to trucks in the *LoadMan®* database. Once a truck has been paired with a route or number of routes, those routes are the only ones that will show

up on the route list if that specific truck has been connected to. If no routes belong to a truck, all routes will show up. If a truck has a route or number of routes, but wishes to choose another one, there is a “show all” button to display all routes.

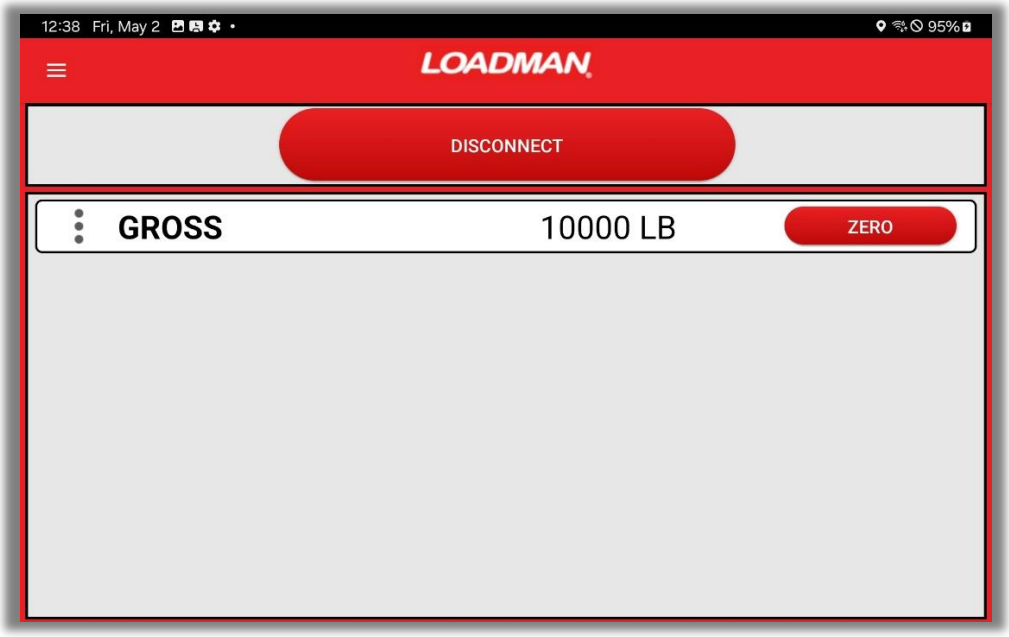
- There is also a button labeled “GEO-ROUTE BY PRODUCT TYPE” which can be selected instead of a route. This brings up a list of all product types. Selecting one will start the main operating mode and display a geo route of all services of the selected product type (see **CHANGE GEO MODE**). The GPS coordinates are used to automatically identify the customer.

STARTUP

NORMAL OPERATING MODE (OFFLINE)

Once you get through the startup screens, you will enter the Normal Operating Mode which looks like the screen below. The operation and status of the scale is viewed and controlled through this screen. The offline Normal Operating Mode is shown below. The main sections of the screen show information relating to:

- **DISCONNECT –** To disconnect the App from current truck and connect to another truck.
- **VIEW CONTROLS –** The "3 dots" allow you to show "NET", "GROSS", "LOAD", "AXLES", "GRAPHIC", and "GRAPHS" on the main menu.
- **SETTINGS & SECURITY –** The 3 horizontal lines (hamburger) button opens a sliding menu to access settings and security (more on these later).
- **ZERO –** To zero either the net, gross, or load weight (more on this later).



OPERATIONAL CONTROLS (OFFLINE)

OPERATIONAL CONTROLS (OFFLINE)

OPERATING MODES

LoadCoder® has three basic Operating Modes: NET, GROSS and LOAD Delivery. These operating modes are virtually identical except the manner in which the weight is displayed. Within each of these operating modes, LoadCoder® will present various weight displays that can be configured using the "3 dots" in the main menu. (See the section on **NORMAL OPERATING MODE (OFFLINE)** for instructions on choosing weight displays).

NET OPERATING MODE

In the NET operating mode, LoadCoder® displays the net vehicle weight (or the payload weight). When in the NET operating mode, all weights (NET, TRUCK, TRAILER, AXLE 1-4 and STEER) are displayed as net weight. For a properly calibrated system, all NET weight displays will read zero whenever the vehicle is empty and is in the weigh position (i.e., truck and trailer must be raised to the weigh position for tipping body installations).

If the NET weight does not display zero when the vehicle is empty, then perform the ZERO TRUCK or the ZERO TRAILER command. (See **CALIBRATION**).

GROSS OPERATING MODE

In the GROSS operating mode, LoadCoder® displays the gross vehicle weight – which is the payload weight plus the tare weight (tare weight is the truck/trailer with no payload). When in the GROSS operating mode, all weights (GROSS, TRUCK, TRAILER, AXLE 1-4 and STEER) are displayed as gross weight. For a properly calibrated system, all gross weight displays will display the programmed tare weights (set in **SETTINGS (OFFLINE)**) whenever the vehicle is empty and is in the weigh position.

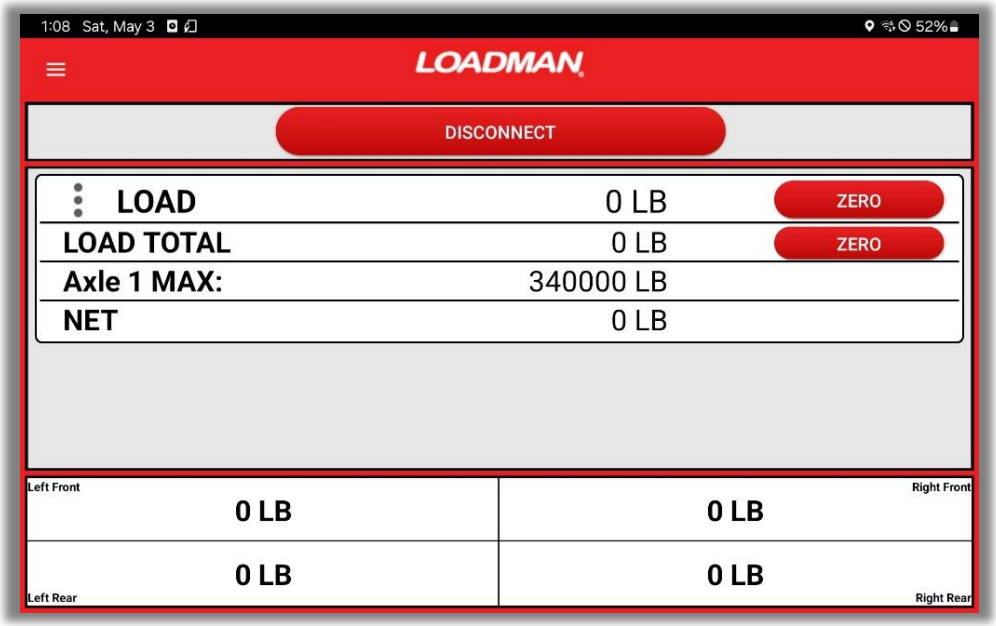
If the gross weight does not display the tare weight when the vehicle is empty, then perform a ZERO TRUCK or a ZERO TRAILER command. (See **CALIBRATION**).

LOAD DELIVERY OPERATING MODE

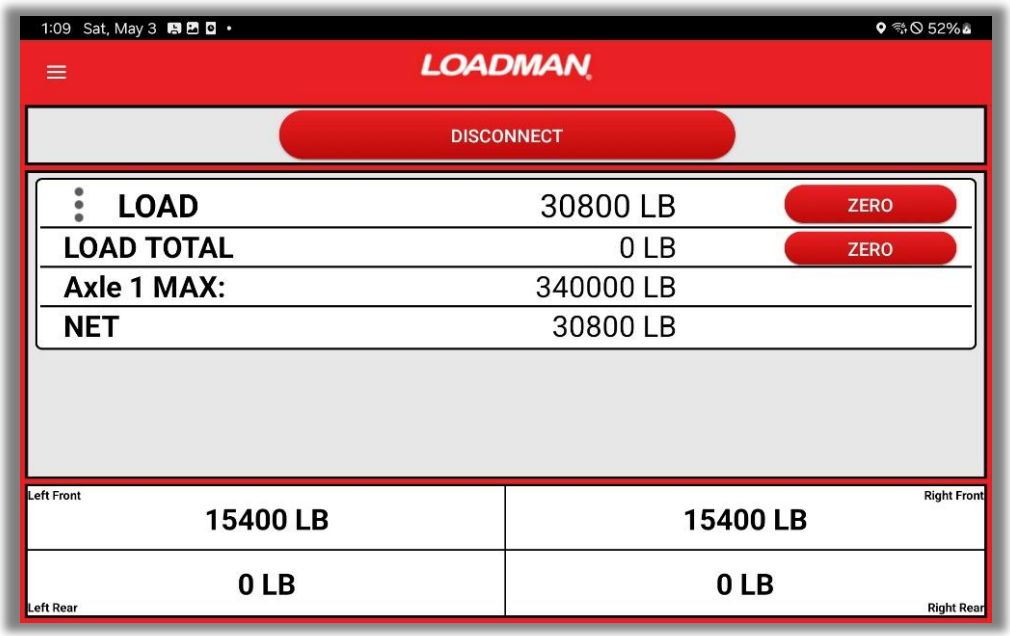
The LOAD Delivery Operating Mode is useful when delivering or loading incremental loads. Since the LoadCoder® system will allow zeroing of the load weight as often as needed by using the ZERO TRUCK command (and ZERO TRAILER command if trailer is configured), LoadCoder® will display any changes in the net vehicle weight when a load is recorded with the RECORD LOAD command. When accepting a load, the load weight increases. When delivering a load, the load weight decreases – showing a negative load weight.

The picture below shows the main menu in LOAD MODE.

OPERATIONAL CONTROLS (OFFLINE)



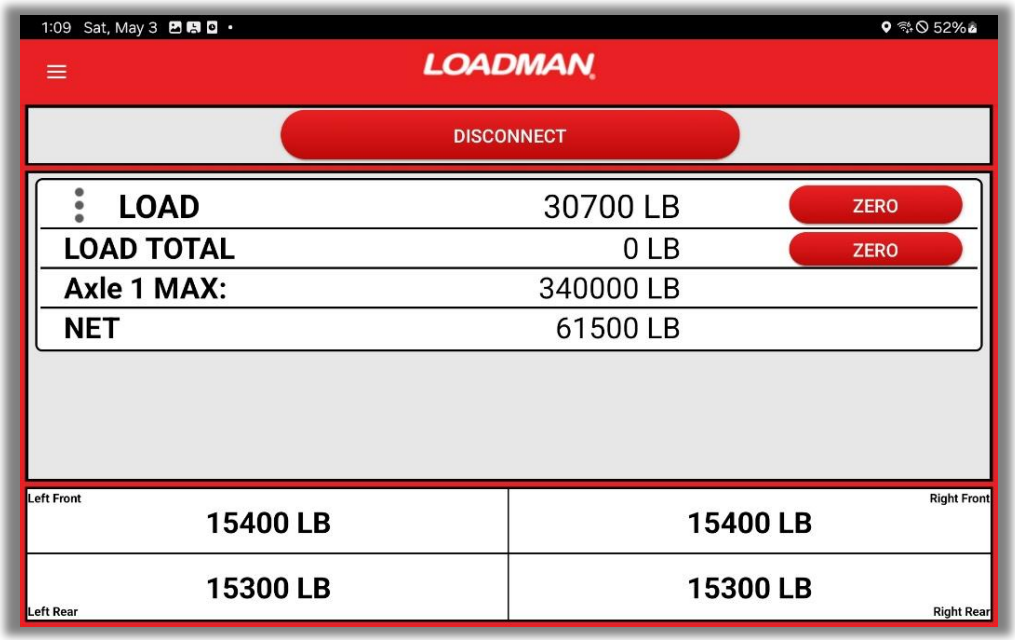
When adding a load, LoadCoder® will display that load in the LOAD and NET rows. In this example, the load added was 30,800 LB.



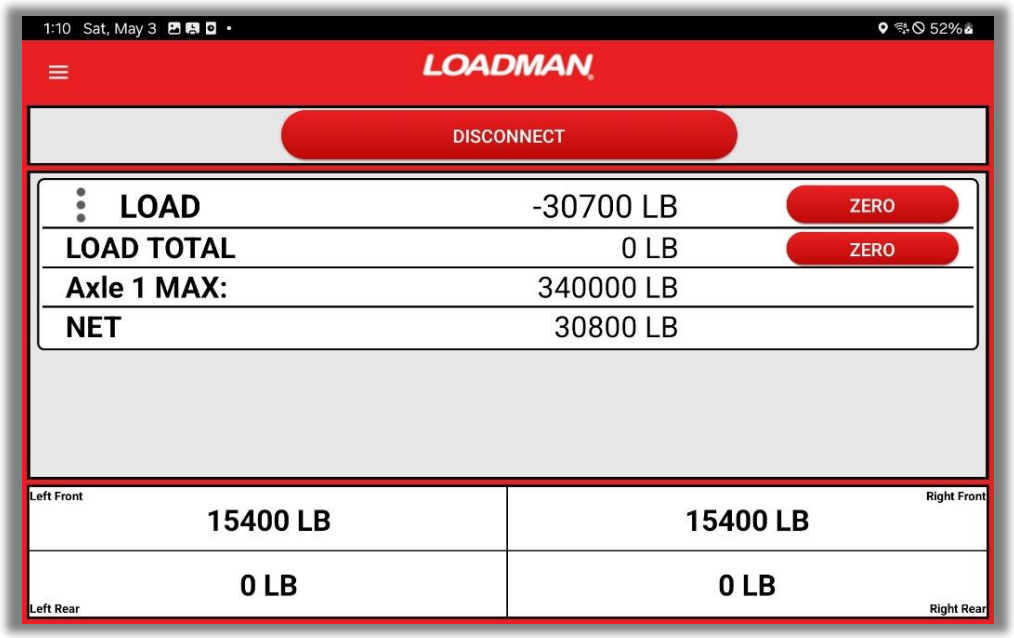
Note: the LOAD TOTAL displays the last recorded LOAD weight. It will zero when a negative LOAD is recorded

When in LOAD MODE it is important to zero after each load for recording purposes (see **LOADMAN SPOTLIGHT DATABASE**). In this case, after zeroing the first load, another load was added. Notice how the LOAD reads 30,700 LB (the second load) but the NET is displaying the sum of both loads.

OPERATIONAL CONTROLS (OFFLINE)

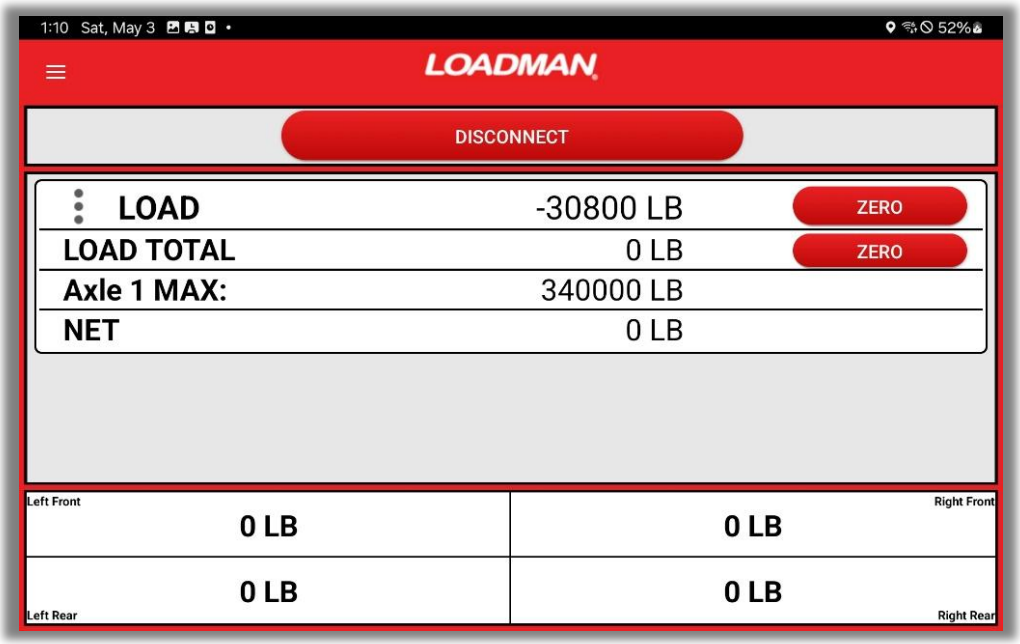


In this example, the second load was delivered. Notice how the LOAD reads a negative number. However, the NET now reads only the first load because that load is still on the truck.



After zeroing and delivering the first load, the LOAD now reads -30,800 (the first load) and the NET is 0 because the truck is now empty.

OPERATIONAL CONTROLS (OFFLINE)



WEIGHT DISPLAYS FOR GROSS, NET, AND LOAD OPERATING MODES

Within each of these operating modes, LoadCoder® will present various weight displays. Optional weight displays can be configured in the main menu (see the **NORMAL OPERATING MODE (OFFLINE)** section for choosing weight displays in the main menu).

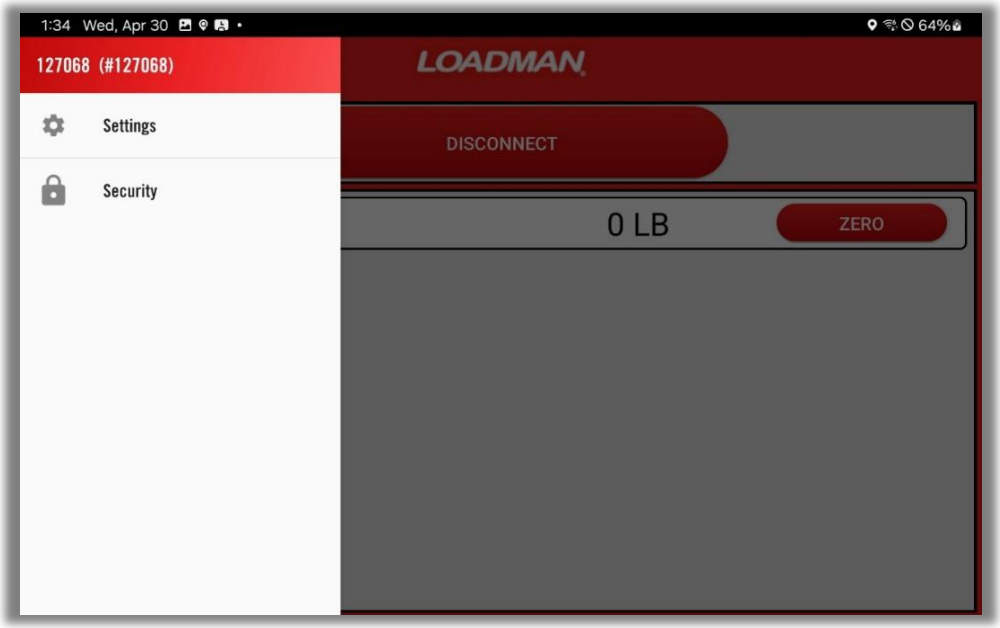
GROSS/NET/LOAD WEIGHT DISPLAY – DEFAULT DISPLAY

One of the weight displays is by default, always on, and is not optional – that would be the GROSS, NET, or LOAD Delivery weight that is chosen with the “3 dots” on the main menu.

OPERATIONAL CONTROLS (OFFLINE)

THE SIDE MENU (OFFLINE)

By tapping on the 3 horizontal lines (hamburger) button in the top left corner of the screen, the sliding side menu will open. Here is an explanation of the menu items.



SETTINGS

Selecting this option will open the settings menu. See more about settings in the **SETTINGS (OFFLINE)** section.

SECURITY

This will allow you to set a 3-digit passcode to enter the SETTINGS menu (more on this in the **SECURITY** section).

SETTINGS (OFFLINE)

SETTINGS (OFFLINE)

LoadCoder®'s SETTINGS menu provides the operator with the capability to program advanced functionality, setup and calibrate a truck's configuration, and choose optional information displays.

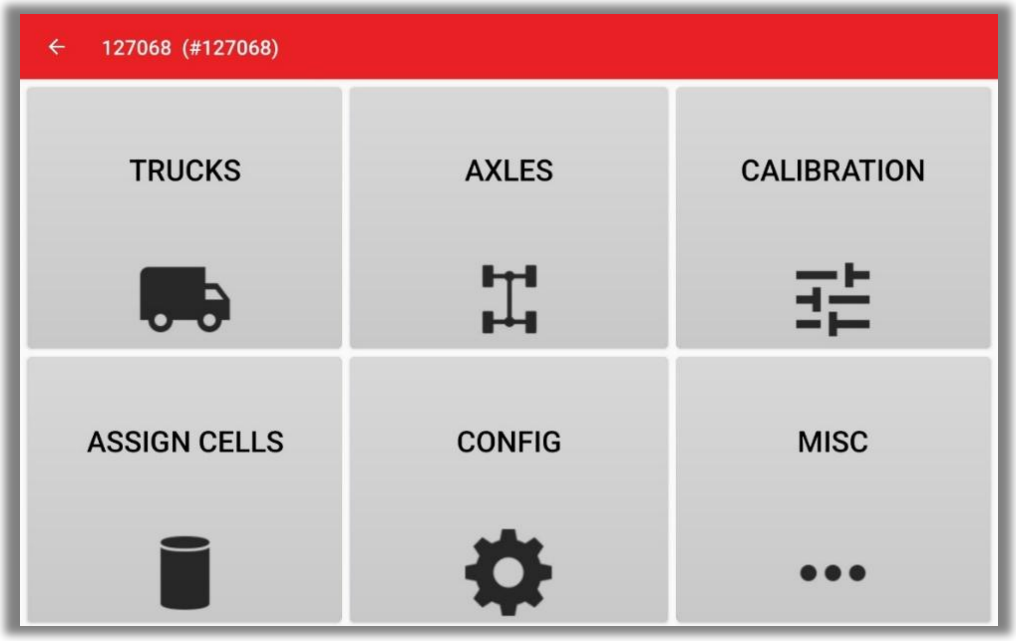


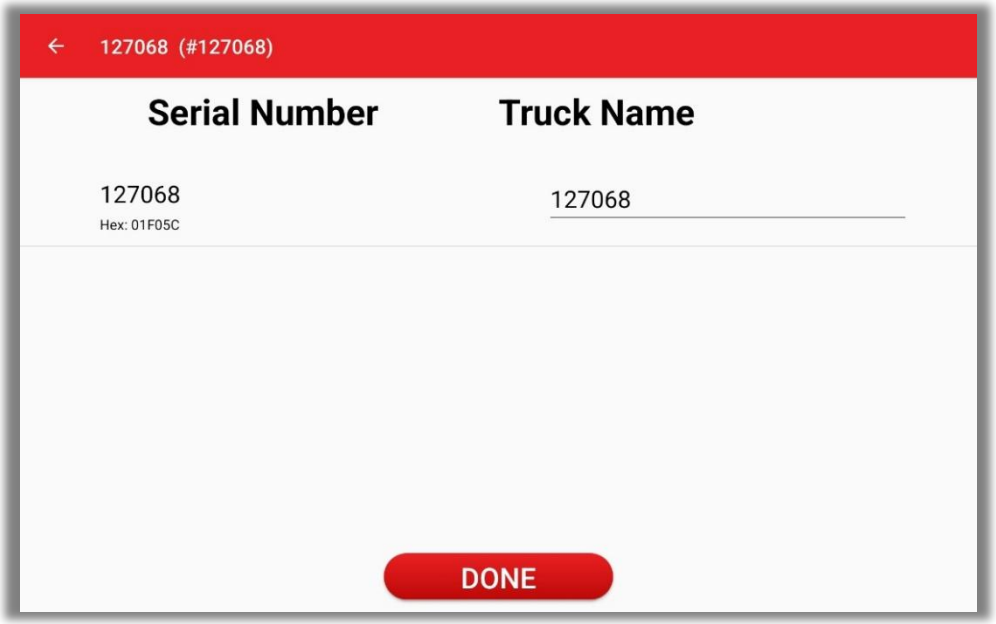
Table 6. Settings Menu

TRUCKS	Displays all trucks licensed for the Application
AXLES	Allows you to set the tare weight of the truck and the max weight allowed on each axle
CALIBRATION	Allows for calibration of the scale system specifically with regards to SPAN and ZERO
ASSIGN CELLS	Assign each loadcell to a particular axle group
CONFIG	Allows for selection of the number of axle groups, configuration of the steer axle, and toggling of axle math
MISC	Miscellaneous settings for the scale and Application

SETTINGS (OFFLINE)

TRUCKS

The trucks page displays the serial number of the *LOADMAN®* meter that LoadCoder® is connected to and the name of the meter. The name can be changed to allow for easier identification of each truck meter when connecting. To do this simply click on the line under “Truck Name” and type the desired name. When scanning for trucks, your chosen name will now appear for that meter.



SETTINGS (OFFLINE)

AXLES

The axles page displays the axle groups that were configured in the CONFIG page (see **CONFIG**). This page will also display the tare weight, and the max weight* allowed on each axle group. These can be manually entered by typing on their respective lines. The axle groups can also be renamed if desired under the “App Name” column.

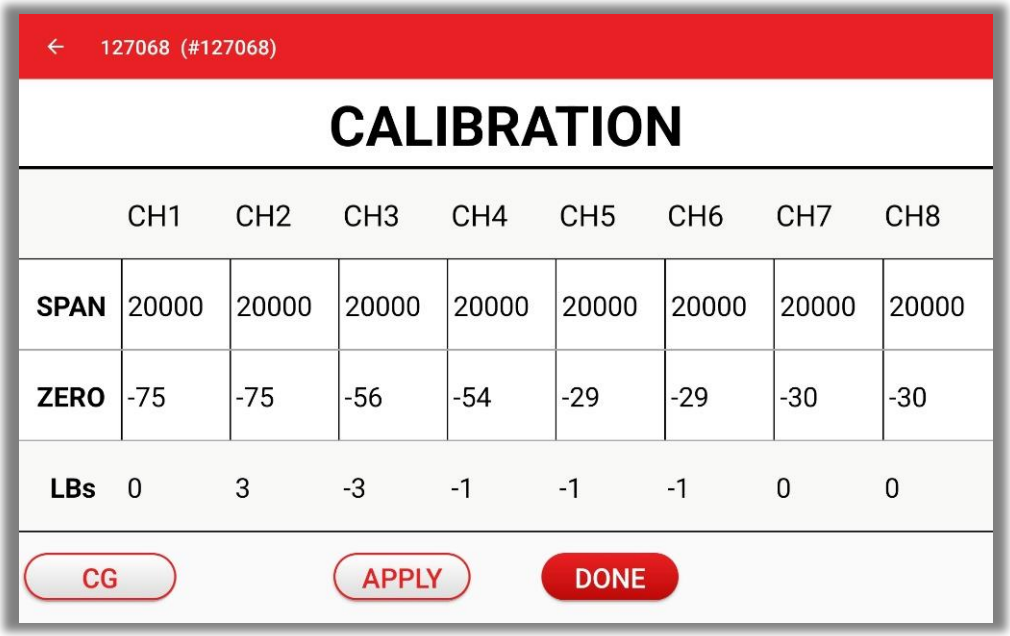
***Setting the max weight will notify the driver on the main menu when the max weight is exceeded on a particular axle group. For example, the max weight for each axle group in the picture above is set to 34000 LB. If that weight is exceeded on axle group 1, a message will appear on the main menu saying. “Axle 1 OVERLOADED!”**

Note: To show axle groups in the main menu, click the “3 dots” (in the Truck row for axle groups 1&2, and the Trailer row for axle groups 3&4). Click “SHOW Axle x”. LoadCoders must be present to display axle group weight readings

SETTINGS (OFFLINE)

CALIBRATION

The calibration page is used for setting SPAN and ZERO of the scale.



- **CH1-8 SPAN –** Sets the gain sensitivity in counts per microvolt for the respective channel's 1-8 Loadcell. 20000 is recommended here. To change the SPAN amount, click in the box of the respective channel (see Note below) (there is an explanation on how to set SPAN below).
- **CH1-8 ZERO –** Adjustment value to allow the respective channel's 1-8 Loadcell to read zero with a dead load.

Note: If the same weight were to read a different value on the driver's side of the scale VS. the passenger side of the scale, then it is possible to make a manual adjustment to CH1 Span setting and/or CH2 Span setting to make the same weight read the same on either side of the scale. Once this ratio is set it will normally never be changed again

SETTING SPAN

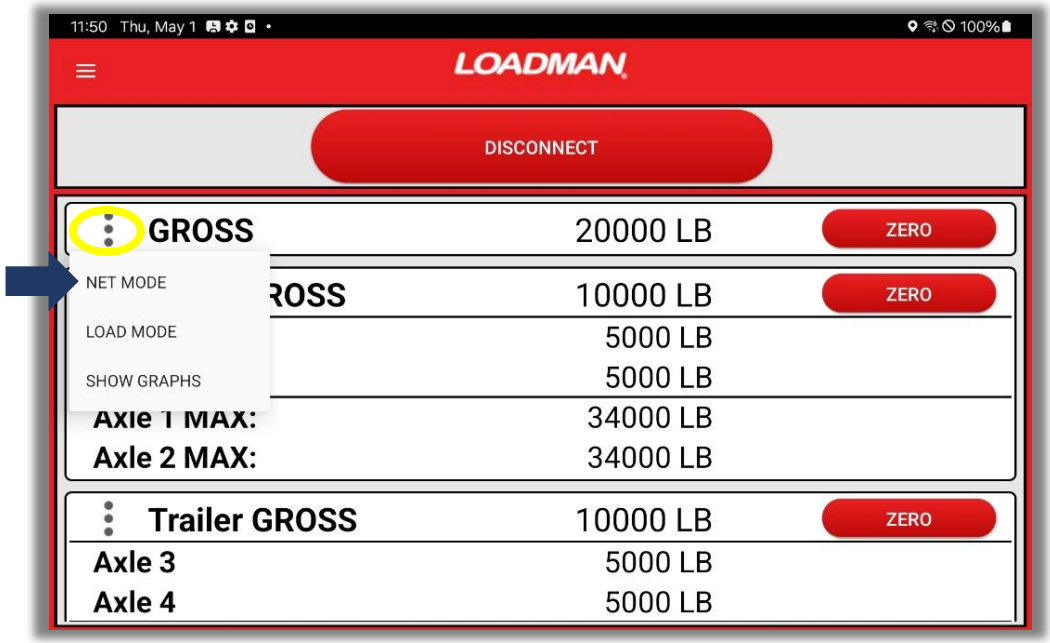
SPAN is used to calibrate LoadCoder® to the readings taken from another truck scale. Use SPAN to calibrate a truck load of material that has been weighed on another scale. This procedure can be done to calibrate the scales for a single load, using a known weight and the weight received from the LoadCoder® App.

Note: Prior to performing a SET SPAN setup, LoadCoder® must display a zero NET weight when

the vehicle is empty. If not, zero the truck and trailer when the vehicle is empty. Otherwise, an inaccurate calibration will result. Here is an explanation of how to zero the truck and trailer:

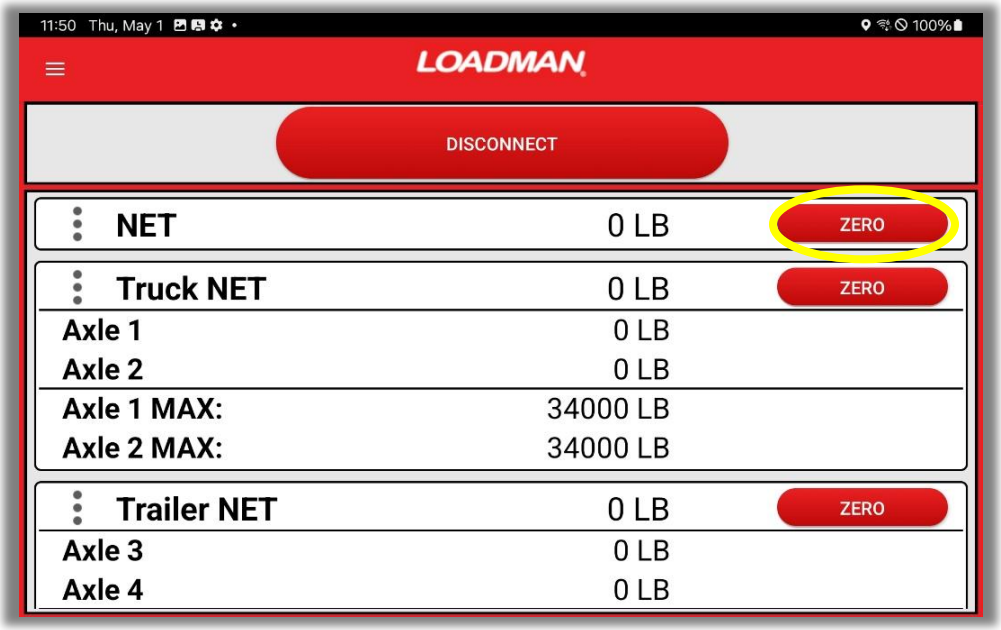
ZERO TRUCK AND TRAILER

To zero the truck and trailer for span calibration, click the “3 dots” when on the main menu and select “NET MODE” (shown below).



Next, on the NET row (top) click the “ZERO” button. A pop-up menu will appear that says, “Zero TRUCK and TRAILER?” Select “YES”. The “NET” “Truck NET” and “Trailer NET” should now read “0”.

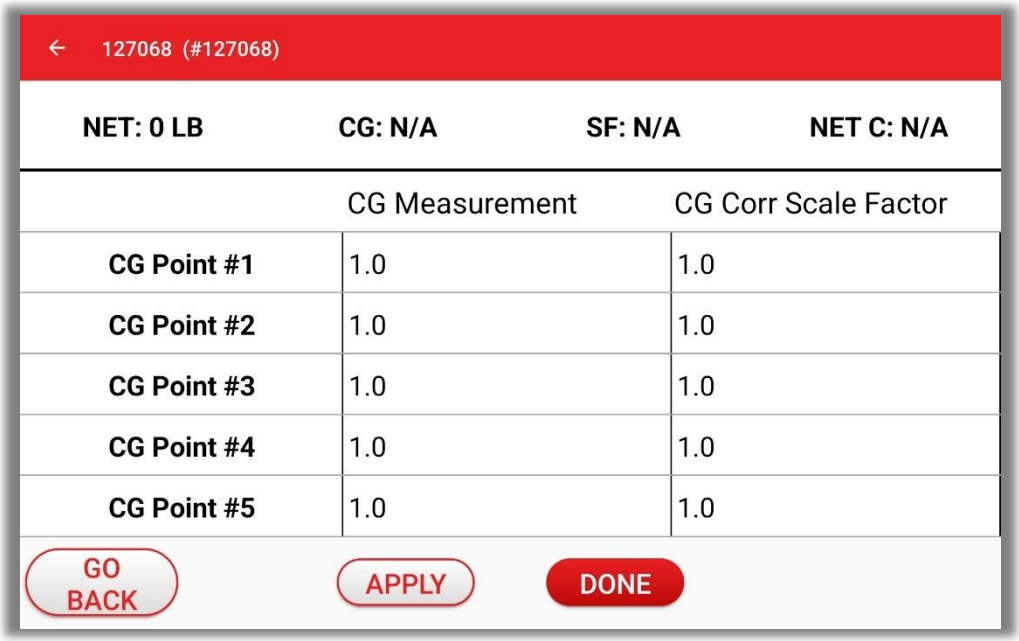
SETTINGS (OFFLINE)



CENTER OF GRAVITY (CG)

Operators may desire to apply corrections to the NET weight based on known weights in certain positions of the truck and an overall center of gravity measurement for more accurate weight readings.

If center of gravity is turned on (see **MISC** in **SETTINGS (OFFLINE)**) and there is no weight in the truck, the center of gravity page will look like the image below.



- **NET –** The NET weight in the truck.

SETTINGS (OFFLINE)

- **CG –** The overall center of gravity measurement (percentage of weight on front axle group divided by the percentage of weight on the rear axle group).
- **SF –** The overall correction scale factor measurement.
- **NET C –** The NET weight correction after **SF** is applied.

LoadCoder® assigns **CG** based on weight placement and applies the correction factor using the following logic:

- If **CG** is less than CG POINT #1 (M1) → Scale Correction Factor (**SF**) = Corr Scale Factor 1 (F1).
- If **CG** is between two points (M1–M5) → **SF** is calculated using interpolation.
- If **CG** is greater than M5 → **SF** = F5.

Once **SF** is determined, LoadCoder® adjusts the NET weight using:

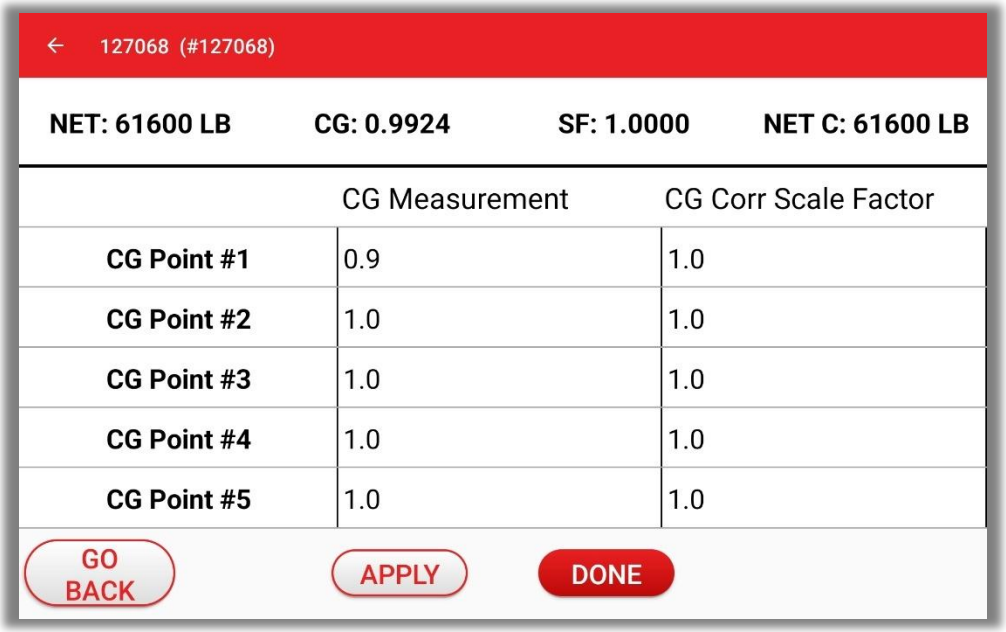
NET C = NET × SF

This ensures accurate weight distribution for improved load balancing.

To calibrate center of gravity, drivers will need to follow this process:

1. Pick up a known weight and weigh the truck on another truck scale. The **CG** shows the overall center of gravity measurement. Enter that value in “CG Point #1” (enter all values rounded to the nearest tenth).

SETTINGS (OFFLINE)



2. If the **NET** reads different than the other truck scale, change the "CG Corr Scale Factor" value until the **NET C** reads the same weight.
3. Dump the load and repeat the process with another weight.
4. After 5 loads, the center of gravity correction should be calibrated. *

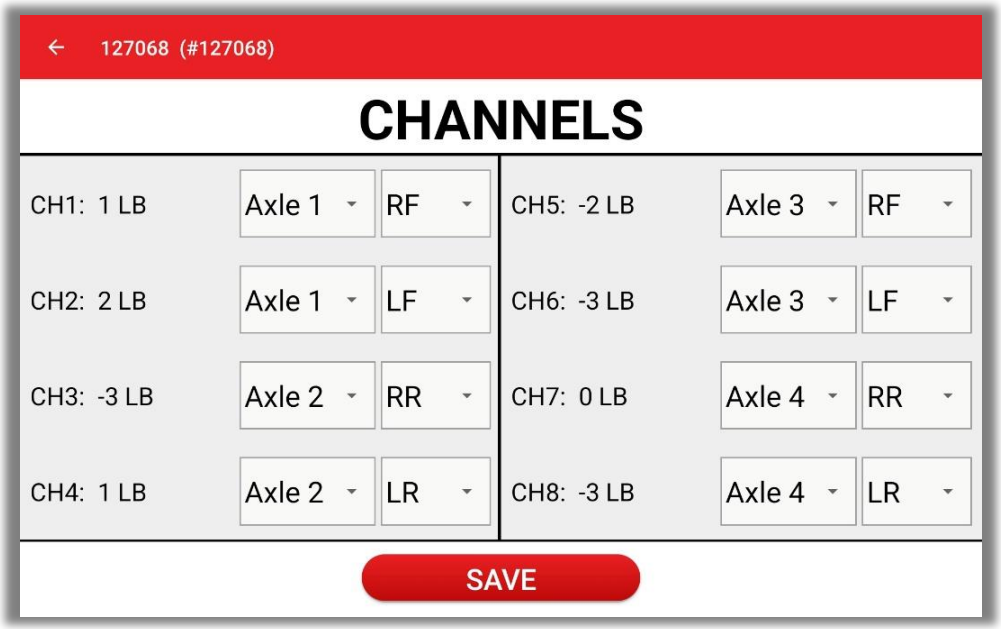
***The correction factor is calculated using interpolation. To ensure accurate correction, be sure to enter each "CG Measurement" in ascending order. For example, if your measurements are "0.6, 1, 2.1, 1.5, and 2.6" order them in the table like this: "0.6, 1, 1.5, 2.1, and 2.6"**

Note: Make sure to select "APPLY" after changing the values to save your changes. If the numbers don't change after selecting "APPLY", try exiting the center of gravity page and opening it again

SETTINGS (OFFLINE)

ASSIGN CELLS

This menu programs and assigns the installed Loadcell channels to the appropriate truck and trailer axle groups. This includes the ability to assign each Loadcell to either the Right Front (RF), Right Rear (RR), Left Front (LF), and Left Rear (LR) (see **TRUCK APPLICATIONS** for basic configurations of Loadcells). Once this category has been selected, each Loadcell channel (CH1 through CH8) will be displayed for configuration and assignment to axles 1 through 4, or no axle (NONE).



When these are assigned correctly, you may select “Show Distribution Graphs” or “Show Distribution Text” in **MISC** > **SCALE SETTINGS** > **MORE SETTINGS** to display accurate weight distribution on the RF, RR, LF, and LR of the truck and trailer on the main menu.

SETTINGS (OFFLINE)

CONFIG

The configuration page allows for configuration of the truck and trailer axle assignments.

TRUCK CONFIG

- **AXLES –** Select the number of axle groups on the truck. (This is the same for **TRAILER CONFIG**).
- **SET GRAPHIC –** Select the type of truck that will be displayed on the main menu.
- **STEER SETTINGS –** Configure the steer axle's calibration percentage, tare weight, and max weight. (More explanation below).
- **AXLE MATH –** Enter the L1, L2, and L3 distances of the Loadcells and axles. This option will only appear when 2 axles are selected. (This is the same for **TRAILER CONFIG**). If AXLE MATH is turned on for TRUCK or TRAILER*, their weights will be displayed on the main menu.

*** TRUCK weight display is the sum of the STEER axle, AXLE 1 and AXLE 2 (if 2nd axle is configured) weight displays. LoadCoders must be present to display the TRUCK weight reading. TRAILER weight display is the sum total of the all axle groups configured for the trailer; that is AXLE 3 and AXLE 4 (if configured). LoadCoders must be present to display the TRAILER weight reading**

SETTINGS (OFFLINE)

Note: There are more in-depth explanations of **AXLE MATH** in the **TRUCK APPLICATIONS** section

STEER SETTINGS

The STEER SETTINGS allow for configuration of the steer axle.

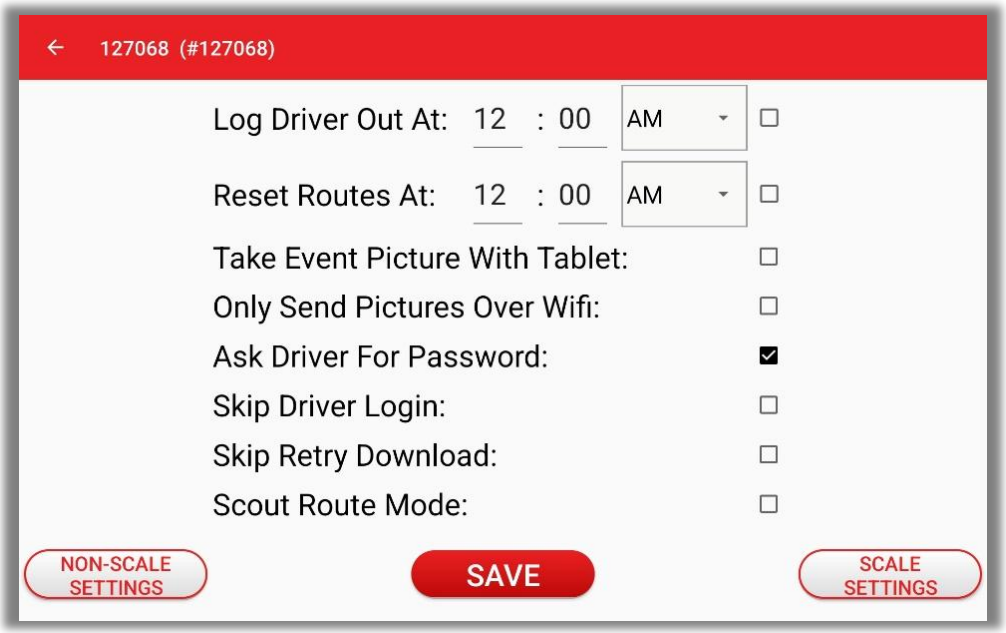
Normally, the steer axle will only be turned on for 5th wheel applications (see MEASURING THE STEER AXLE WEIGHT in **TRUCK APPLICATIONS**).

- **STEER ON –** Clicking this box will show the steer axle on the main menu.
- **STEER CAL –** the "STEER CALIBRATION PERCENTAGE" determines the percentage of weight from axle group 1 that is distributed to the steer axle.
- **TARE –** Enter the tare weight of the steer axle.
- **MAX –** Enter the max weight allowed for the steer axle.

SETTINGS (OFFLINE)

MISC

The miscellaneous page allows operators to configure certain settings pertaining to the LoadCoder® App functions, driver settings, route settings, and scale settings.



MAIN PAGE

Note: many of these settings are for operating online (see **NORMAL OPERATING MODE (ONLINE)**)

- **LOG DRIVER OUT AT –** This will automatically log a driver out at a certain time of day. If the App is running, and the set time comes, the App will return to the startup page. Change the time to the desired time and check the box next to the time to enable this.
- **RESET ROUTES AT –** This will set a time of day for the routes to be reset. This means all load data that was associated with any route stop will be reset back to the default. They will go back from green to grey and their load will be reset to “NOT PICKED UP”. This is true for any event recorded on a route stop too. It is recommended to set this for a time of day when the trucks are not being driven. When the time of day comes and the App is not running, the routes will still be reset upon launching the Application. Enter the desired time and check the checkbox next to the time to enable this setting.

SETTINGS (OFFLINE)

- **TAKE EVENT PICTURES WITH TABLET –** This enables the App to take a picture with the Tablet (or Android device) when an event is recorded (see **EVENTS** in **NORMAL OPERATING MODE (ONLINE)**). The default is to choose from a Google Photos library.
- **ONLY SEND PICTURES OVER WIFI –** This will prevent the tablet from sending event records with pictures associated with them over a cellular connection. It will only send them over a Wi-Fi connection when this is enabled.
- **ASK DRIVER FOR PASSWORD –** If this is enabled, the driver will be forced to enter their password when they log in. If this is disabled, they only need to tap on their name to log in. Is it required that they log in with a name AND password at least once to be able to skip entering their password.
- **SKIP DRIVER LOGIN –** If this is enabled, the App will take whatever driver appears at the top of the log-in names list and log in with that driver's credentials automatically every time the App is launched. No action from the driver will be necessary for logging in when this is enabled.
- **SKIP RETRY DOWNLOAD –** This skips the screen asking the driver if they want to retry downloading the routes if the routes could not be successfully downloaded. This is useful in cases where the App will likely never have an internet connection when the driver is starting the App. The routes must have been downloaded at least once successfully in order to skip the "retry" prompt.
- **SCOUT ROUTE MODE –** Replaces all bottom screen buttons in the normal operating mode with one "Learn Location" button. See **SCOUT ROUTE MODE** in **APPENDIX** for more information.

NON-SCALE SETTINGS

- **SEND REMAINING –** This will send several event records at a certain time of day for the selected route. If the App is running, and some stops of the selected route have not been serviced, event records will be sent for all remaining stops. Set a time and check the checkbox next to the time to enable this.
- **DON'T SCAN FOR TRUCKS AT LOGIN –** This will default to the "non-scale mode" selection for trucks during startup. This is useful if you know the App will never connect

to a scale system. The list of all trucks will automatically be brought up when the App normally would show “Scanning for Trucks”.

- **SHOW ARRIVE BUTTON -** Displays a button on the normal operating screen that will send an “arrive” record to the cloud for the selected route stop.
- **SHOW DEPART BUTTON -** Displays a button on the normal operating screen that will send a “depart” record to the cloud for the selected route stop.
- **AUTO CONFIRM WHEN DETECTED** – This is for use with Geo Route Mode (see **CHANGE GEO MODE**). When this is enabled, any stop detected by geo route mode will automatically have a confirm pickup record sent for it. The driver will not have to interact with the Tablet to send a record confirming they picked up a route stop.
- **HIDE CONFIRM PICKUP BUTTON –** Hides the confirm pickup button on the normal operating screen. By default, only the record event button will be shown. However, if the arrive or depart buttons are enabled, they will be shown too.

SCALE SETTINGS

- **LOADS INTERVAL –** Set the interval at which weight updates will be sent to the Load Manager online software (see **LOADMAN SPOTLIGHT DATABASE**) automatically (default is 10 sec).
- **UNITS –** Select the units that the weight will be calculated in (LB, TON, KG, TNE).
- **COUNT BY –** Determines how the weight values will be rounded. For example, if the value is set to 1, the weight values displayed will change by 1. If the count by value is set to 100, the weight displayed will only change if the weight detected by *LOADMAN*® changes by 100 or more.
- **RFID POWER –** When using RFID (see **RFID MODE**), this allows you to set the strength of the antenna signal to increase the scan distance.
- **STABLE TIMER* –** When the scale system detects a load was picked up, it waits **xxx** seconds before sending the load record for the weight to stabilize.
- **LAST NET TIMER –** When the scale system detects a load was picked up, the NET weight from **xxx** seconds ago is used when calculating a load pickup. It determines this "before" weight and then waits the number of seconds assigned to "stable seconds" to determine

the "after" weight. Then takes the difference between the two and uses it for the load record.

***The STABLE TIMER and LAST NET TIMER are used with cart tipper underbody systems (see CART TIPPER MODE)**

MORE SETTINGS

- **SHOW MAX –** Displays the max load set for each axle group on the main menu (configured in **AXLES**).
- **SHOW LOAD TOTAL –** Displays the total load when in LOAD mode.
- **AUTO RECORD –** Automatically records load data if certain criteria are met at a certain time interval. This is useful for handsfree load data recording.
- **RECORD AND INCR STOP –** When this box is checked, LoadCoder® will automatically increment and select the next stop number (and associated account information) from the downloaded route list after a load has been recorded with the RECORD LOAD command.
- **SHOW DISTRIBUTION GRAPHS –** Shows the weight distribution as a graph on the main menu (see **ASSIGN CELLS**).
- **SHOW DISTRIBUTION TEXT –** Shows the weight distribution amount on the main menu (see **ASSIGN CELLS**).
- **HIDE DISCONNECT BUTTON –** Removes the “DISCONNECT” button from the main menu.
- **CENTER OF GRAVITY –** Toggles center of gravity calculation on or off.
- **SMASH BOX MODE –** Toggles smash box recording mode (see SMASH BOX MODE).
- **TRKWEIGHSP –** Sets a negative (-) set point. If the weight goes negative past this set point, then the TRUCK display on the *LOADMAN®* meter shows “LIFT TRK TO WEIGH” instead of displaying a weight that would be invalid. This set point is useful for tipping body installations (see Note below).
- **TLRWEIGH SP –** (Not used in LoadCoder®).
- **STABLESEC –** The number of seconds that the weight reading must remain stable – AND within the StableWeigh setting. (The factory default is set at 3 seconds.).

SETTINGS (OFFLINE)

- **STABLEWEIGH –** This is the stable weight range that Auto Record is monitoring for a possible load data record candidate. When the AUTO RECORD function detects that the load weight remains within the stable weight reading (such as within 100 lbs), AND the weight remains stable for number of seconds (programmed with StableSec); then the weight will be a valid load data candidate.
- **EMPTYSP –** Empty Weight Set-Point. This function directs Auto Record to monitor and detect this pre-programmed empty weight setting. When *LOADMAN®* detects a load weight that is below the Empty Set-Point weight for the number of Stable seconds programmed, it will automatically capture the reading as a possible Empty Weight candidate.
- **LOADEDSP –** The Loaded Weight Set-Point. All weight readings that are stable and exceed this setting will be considered a "possible" load data candidate.
- **DELTASP –** Not used in LoadCoder®

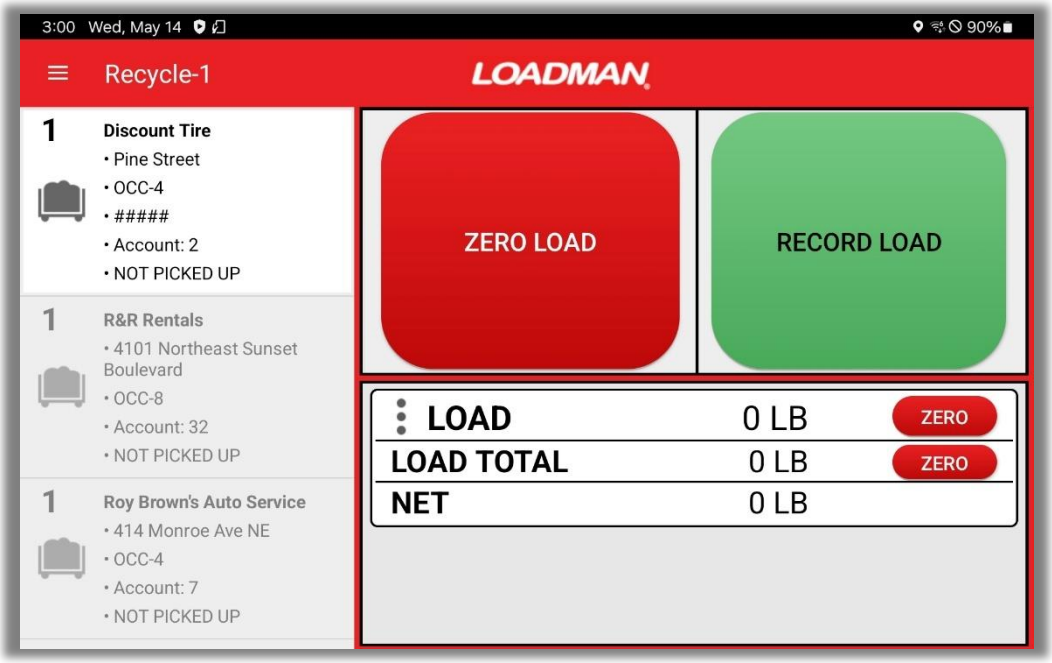
For more information on Set Points and automatic data collection, see **AUTOMATIC RECORDING** in **COLLECTING LOAD DATA.**

> Note: For tipping vehicles, when lowering and resting the truck body on the frame rails, some of the load bypasses the loadcells. In these situations, *LOADMAN®* cannot measure the actual weight, and the only way for the loadcells to detect the entire load is to lift the truck body slightly off the frame rails so the load will rest on the loadcells

SMASH BOX MODE

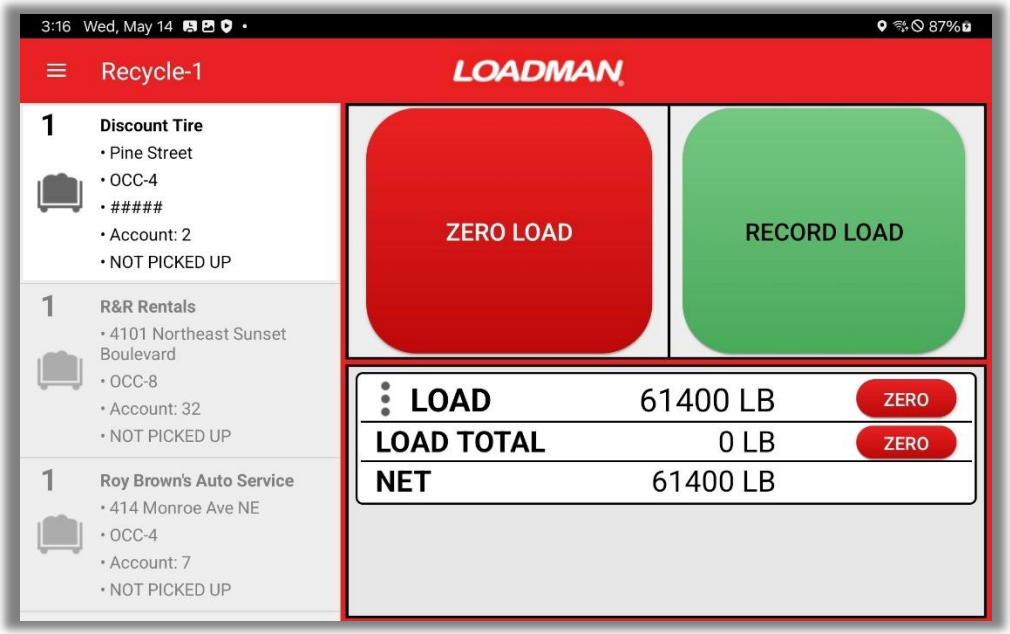
Smash box mode allows drivers to record incremental loads. When in smash box mode, the main menu will look like the image below.

SETTINGS (OFFLINE)



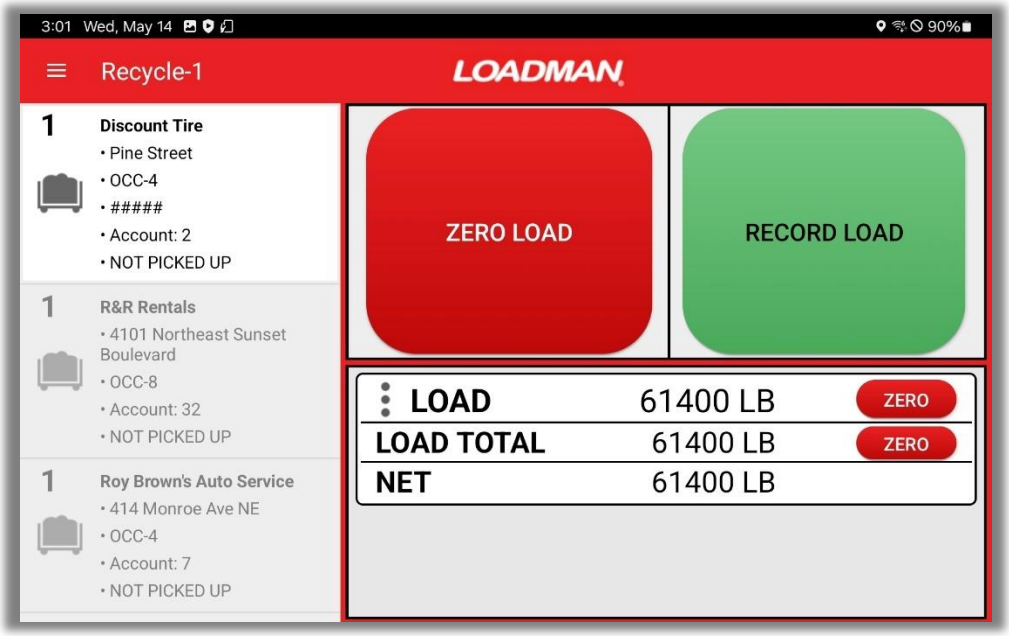
To use smash box mode, LoadCoder® must be in LOAD MODE (see **OPERATIONAL CONTROLS (OFFLINE)**). Here is an explanation of how to record loads in smash box mode:

1. When a load is picked up, The LOAD and NET will display the weight.



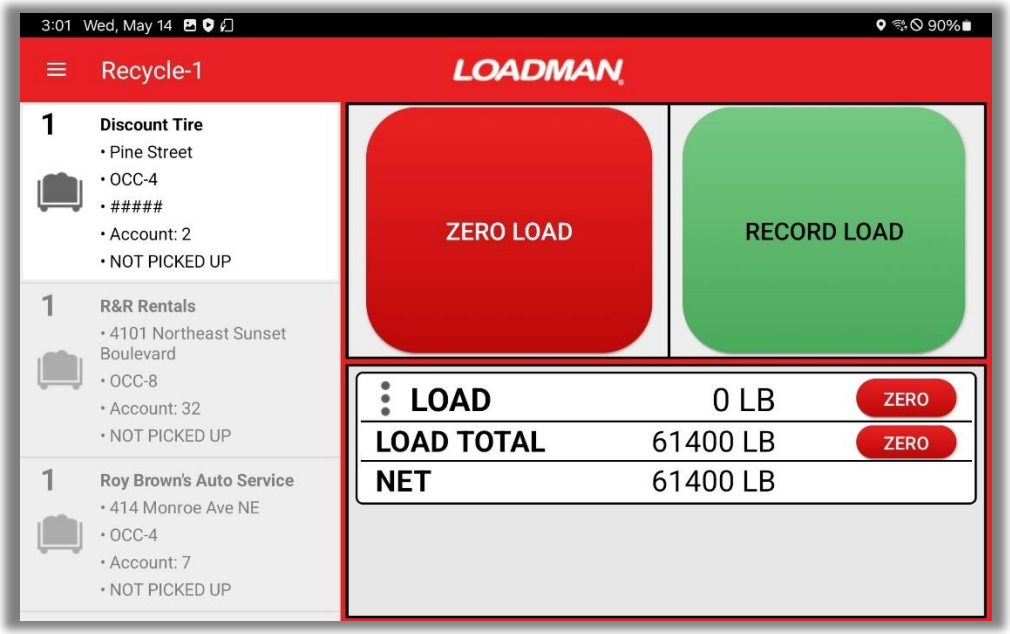
SETTINGS (OFFLINE)

2. After the load is picked up, click “RECORD LOAD”. The LOAD TOTAL will now display the weight recorded.

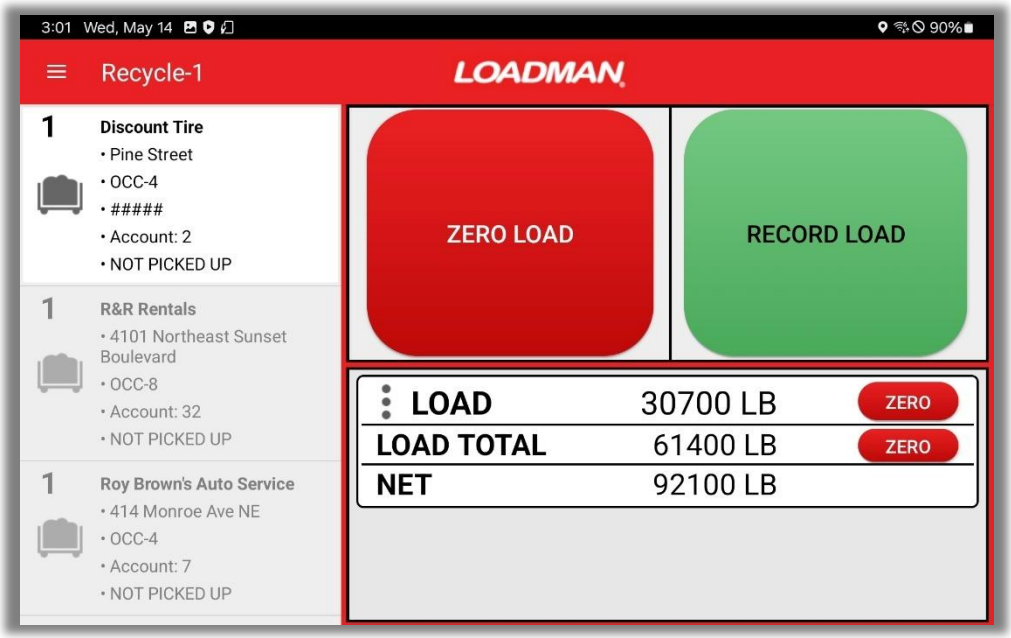


3. Now click “ZERO LOAD”. The LOAD will display “0” but the LOAD TOTAL and NET will remain the same.

SETTINGS (OFFLINE)

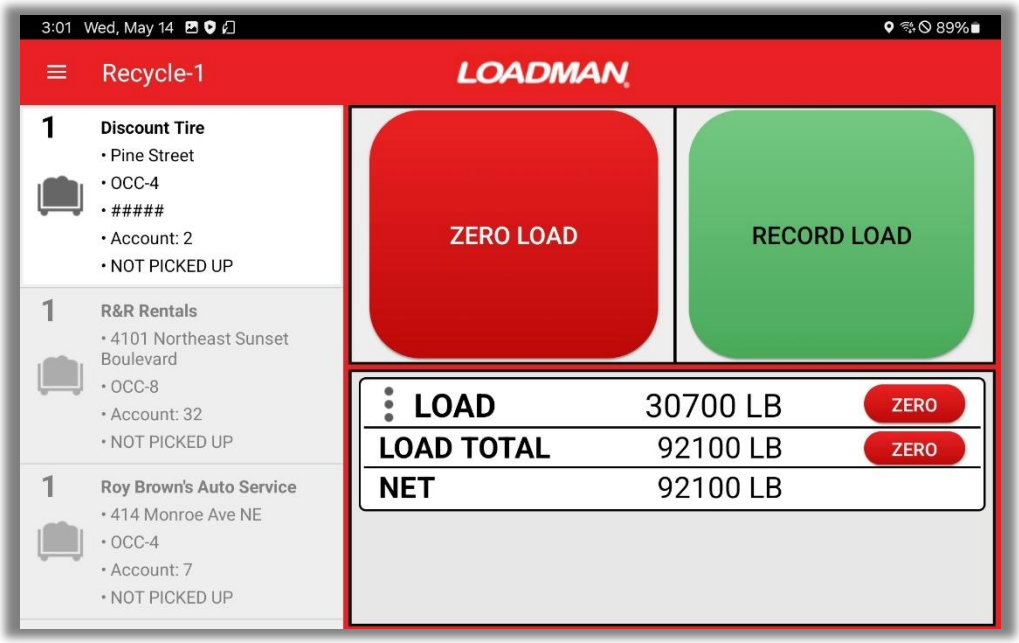


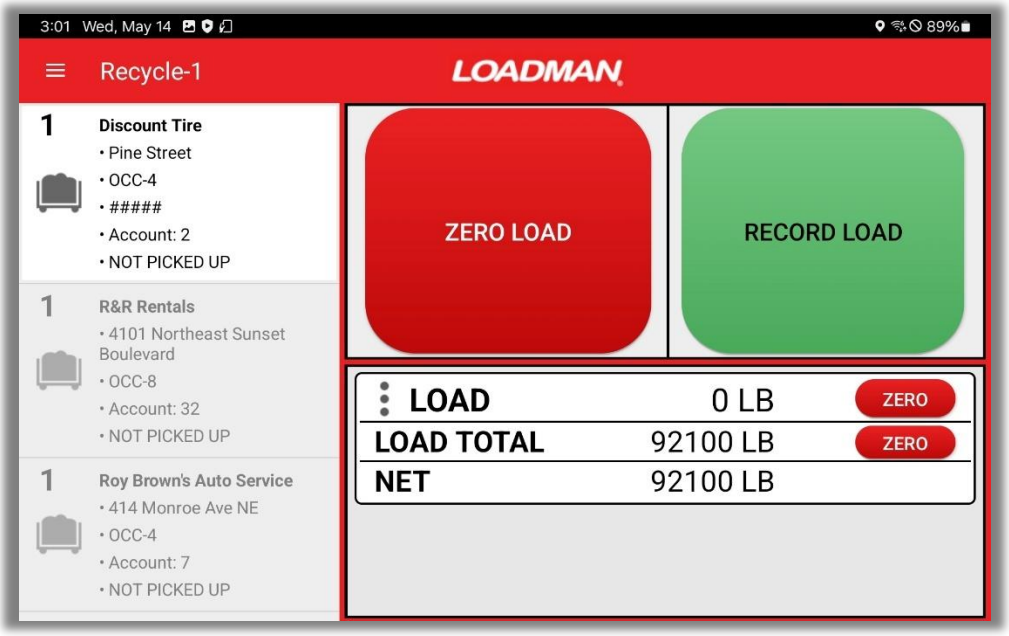
4. When the next load is picked up, the LOAD will display the weight of the new load, but the LOAD TOTAL and NET will show the sum of both loads.



5. Repeat steps 2 and 3.

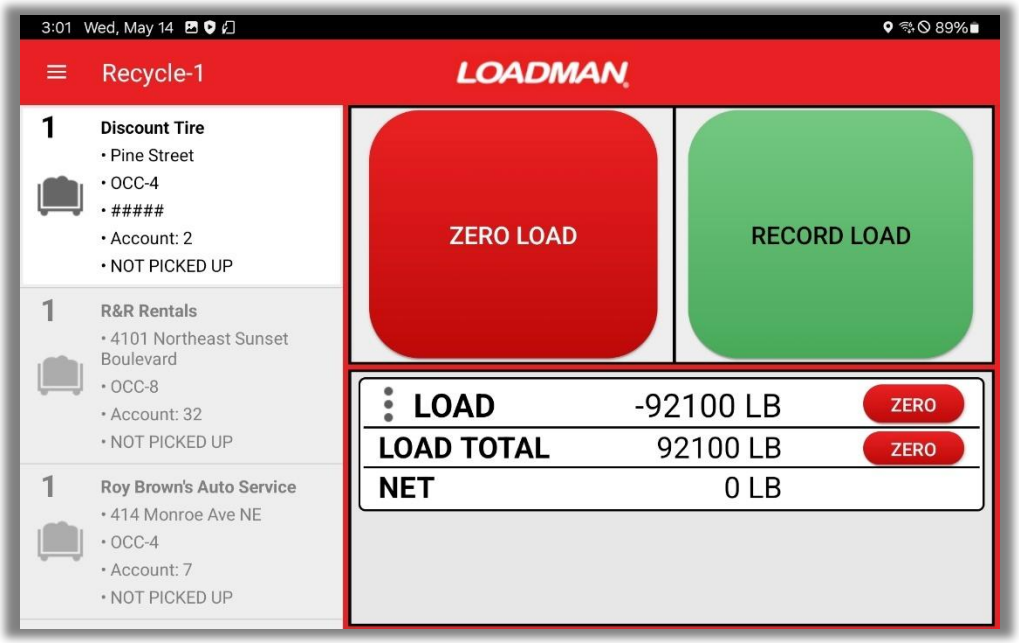
SETTINGS (OFFLINE)





6. When the loads are delivered, the LOAD will display a negative weight, the LOAD TOTAL will remain the same, and the NET will display “0” since the truck is empty.

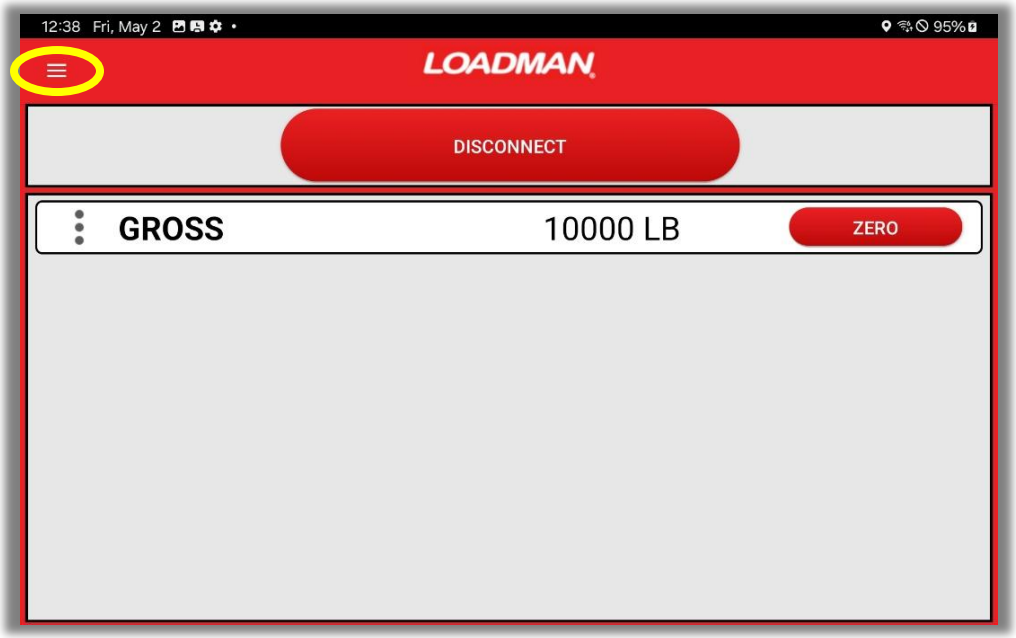
SETTINGS (OFFLINE)



SECURITY

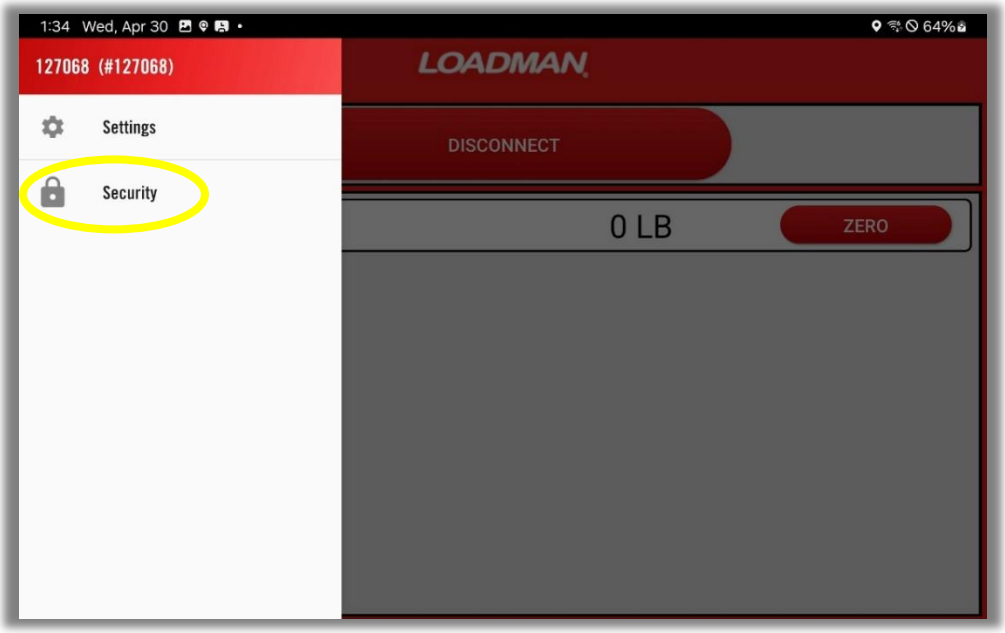
SECURITY

The SECURITY page (accessed through the **SIDE MENU**) allows users to set a 3-digit passcode that needs to be entered before accessing the **SETTINGS** menu. To do this, click on the 3 horizontal lines (hamburger) button while on the main menu.

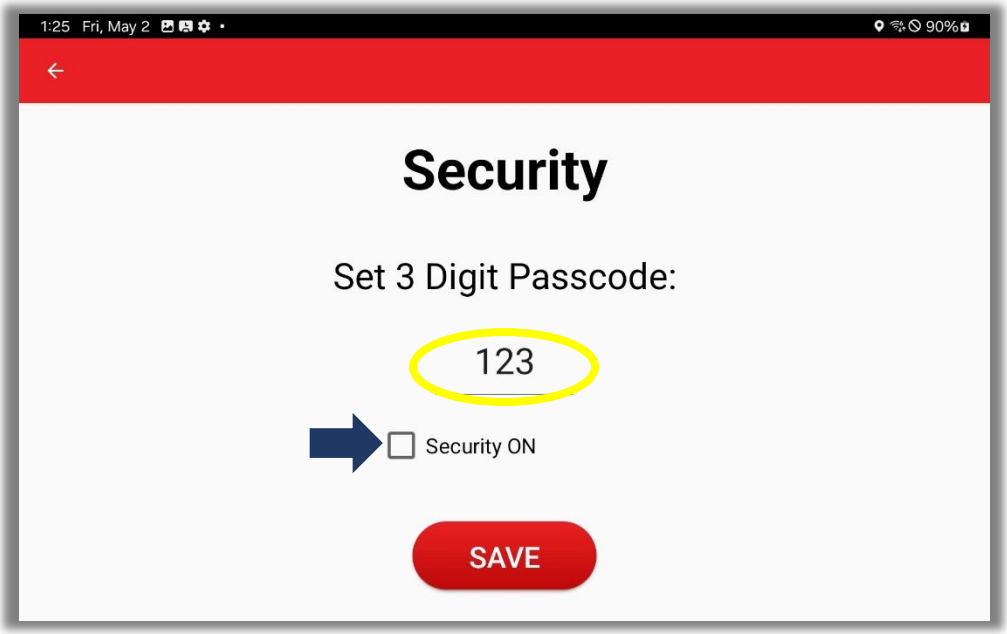


SECURITY

Then select “Security”.



To set a passcode, click on the line and type your desired 3-digit passcode then check the box next to “Security ON”.



SECURITY

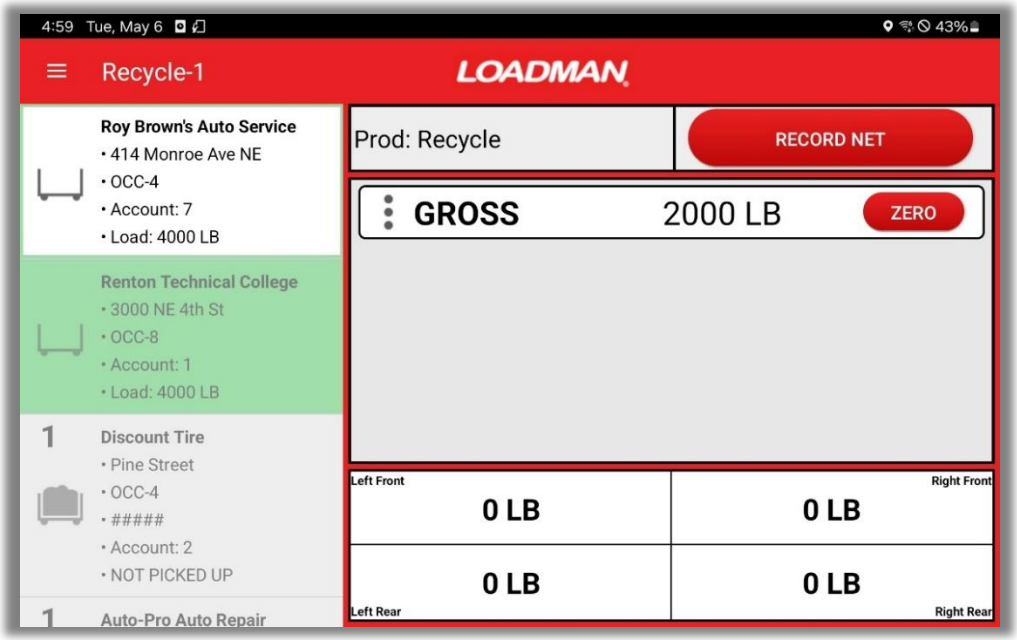
Click “SAVE” to save your changes. Now your selected passcode will be required to enter the SETTINGS menu.

NORMAL OPERATING MODE (ONLINE)

NORMAL OPERATING MODE (ONLINE)

When online, LoadCoder® allows drivers to upload data to the cloud for management and data recording. Logging in for online use is covered in the **STARTUP** section.

When using LoadCoder® online the interface will look much different. The image below shows the App in Normal Operating Mode online.

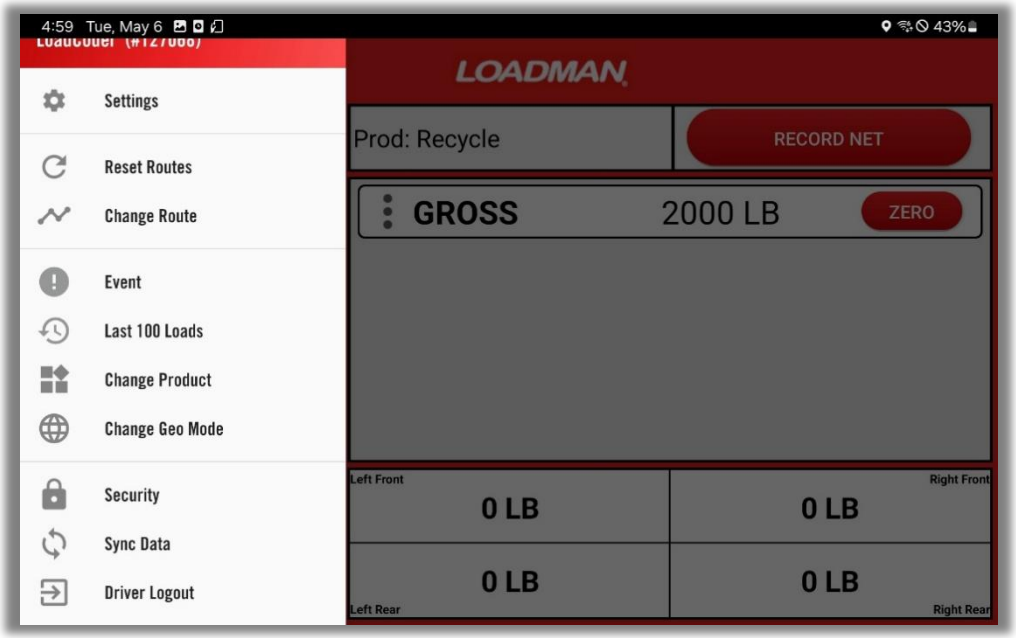


- The list on the left side of the screen shows each stop on the current route.
- The top left box that says, “Prod: Recycle” is the current product being loaded into the truck.
- The “RECORD NET” button on the top right allows drivers to record the weight being loaded at a particular stop.

THE SIDE MENU (ONLINE)

THE SIDE MENU (ONLINE)

When online, the side menu has many more options. Here is a description of each item:



- **SETTINGS –** Selecting this option will open the settings menu. See more about settings in the **SETTINGS (ONLINE)** section.
- **RESET ROUTES –** Selecting this option will allow you to reset the information gathered in the routes.
  - Whenever a stop is serviced, it will be marked as complete, and the load weight will be associated with that stop. This information will remain with the stop until the routes are reset, even if the App is closed or restarted.
  - You can also set a time of day for the routes to reset. This is in **SETTINGS** > **MISC**. If the time of day passes and the App is not running or the Android device is off, the routes will still be reset.
- **CHANGE ROUTE –** Selecting this option will bring up a dialog with a scrollable list of all routes. Tap on a route to select one.

THE SIDE MENU (ONLINE)

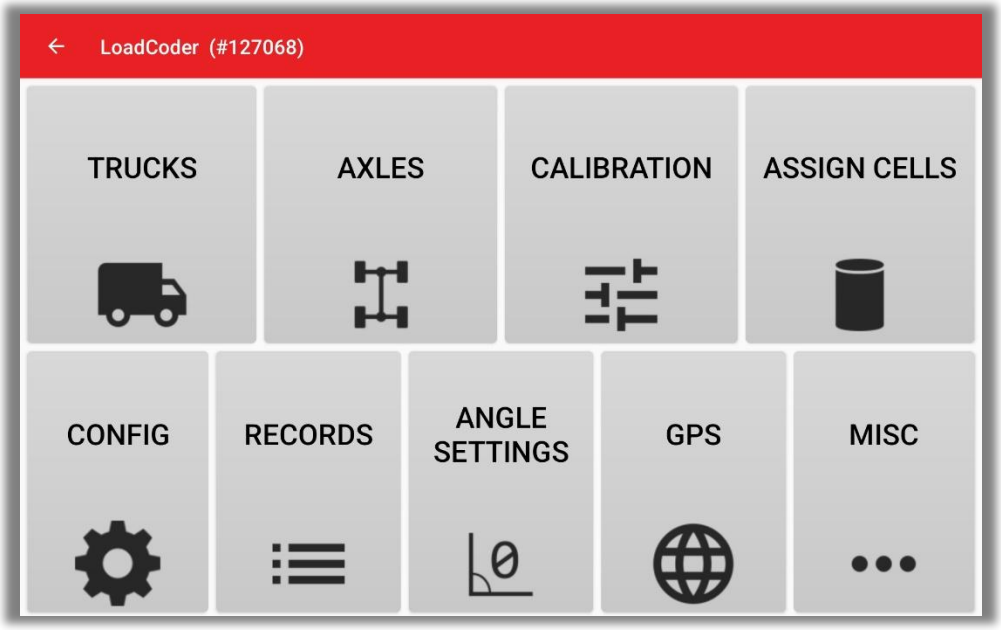
- There is also a button at the bottom labeled “GEO ROUTE BY PRODUCT” that will allow you to select a product type to run a geo-route with (see **CHANGE GEO MODE**).

- **EVENT –** An “Event” is any reason a stop cannot be serviced. This could mean anything from a car being parked in front of a container to a gate being locked. To send information about why a stop cannot be serviced, a driver can manually send an “event record”.
  - All possible events are pre-determined and set up beforehand in the *LoadMan®* Spotlight database (see **LOADMAN SPOTLIGHT DATABASE**). The list of events are downloaded to the Android device just like routes and route stops are.
  - Tap on the “EVENT” button to be presented with a list of possible events. Tap on one and you’ll be asked if you want to include a picture with the event. If you say yes, you can either take a picture with the Android device itself or select from a Google Photos library. If you don’t wish to include a picture, the event will send and be associated with the selected route stop.
- **LAST 100 LOADS –** Allows the driver to view the last 100 loads recorded by *LOADMAN®* including the date/time, customer, and RFID code (if applicable).
- **CHANGE PRODUCT –** Allows the driver to select the product they are picking up (recycling, MSW, compost, glass).
- **CHANGE GEO MODE –** This brings up a screen with options to change to geo-route mode or geo-fence mode. Or turn these modes off. (for more information see **CHANGE GEO MODE**).
- **SECURITY –** This is the same as in offline mode (see **SECURITY**).
- **SYNC DATA –** This causes a full reset of all data downloaded to the Android device. Examples of this data are things like routes, route stops, events and product types. This will delete all data on the tablet currently and re-download everything from the cloud database.
- **DRIVER LOGOUT –** Logs out the current driver and sends the App back to the login screen.

SETTINGS (ONLINE)

SETTINGS (ONLINE)

The image below shows the settings menu when operating online.



The table below provides a brief description of the new settings options (AXLES, CALIBRATION, ASSIGN CELLS, CONFIG, and MISC are the same as offline mode).

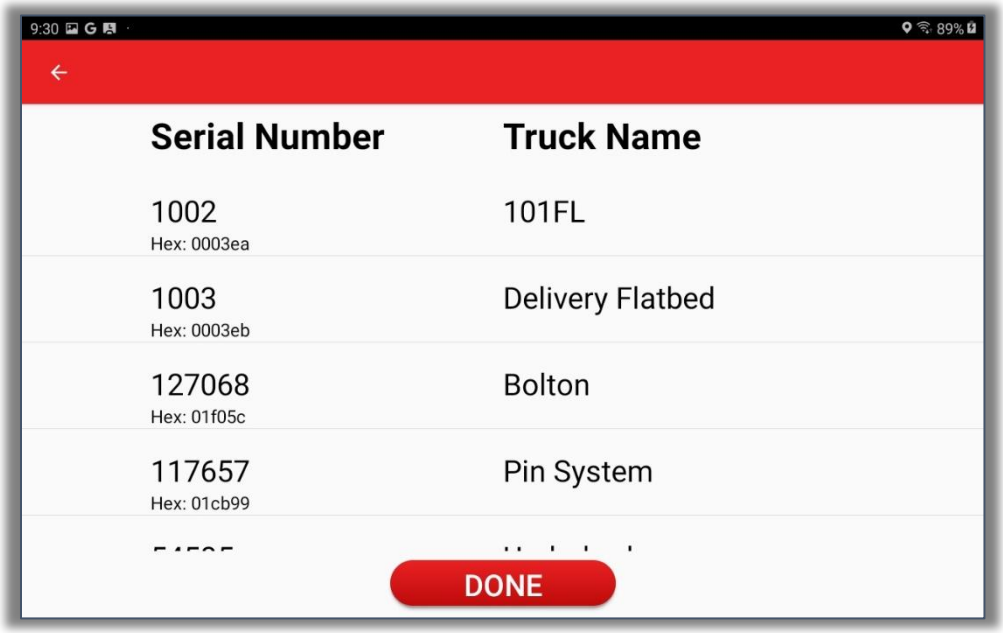
RECORDS	Displays any load records that were not sent due to no internet connection
ANGLE SETTINGS	Configuration of the angle settings for tipping bodies and fork loaders
GPS	Shows the coordinates of the truck, allows for configuration of automatic location-logging, and setting of the Geo Route Radius

Below are detailed explanations of these new settings.

SETTINGS (ONLINE)

TRUCKS

The trucks page is slightly different when operating online.

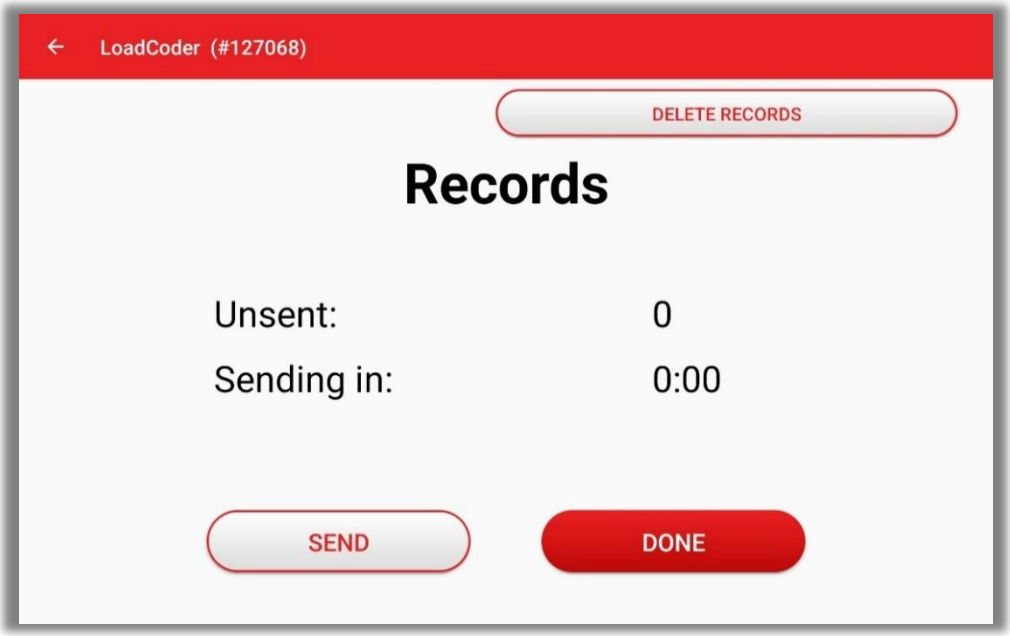


- Displayed here are all trucks licensed for the application. This page contains a scrollable list of all Serial Numbers, which are the default identifiers for the scale systems, and truck names that have been assigned to the serial numbers. This allows a user to assign a truck a specific name so that it shows up as that name throughout the app, such as the "Scanning for Trucks" page.
- For example, *LoadMan®* will assign a scale system a serial number that could be "12345". If that scale system was installed on "Truck A", then someone could assign the name "Truck A" to "12345" so that when the App displays the scale system to connect to, it will show "Truck A", which could be more helpful to the operator.
- If LoadCoder® is "online", meaning it is intended to send data to the internet, then the trucks can be assigned names on *LoadMan®*'s cloud software platform Spotlight Load Manager. All Android devices licensed for the database will reflect the assigned truck names.
- If the Application is "offline", meaning it will not send data to the cloud, then the truck names can be edited directly on this page by tapping on the "Truck Name".

SETTINGS (ONLINE)

RECORDS

The records page displays any unsent records and will attempt to send them every 1 minute.

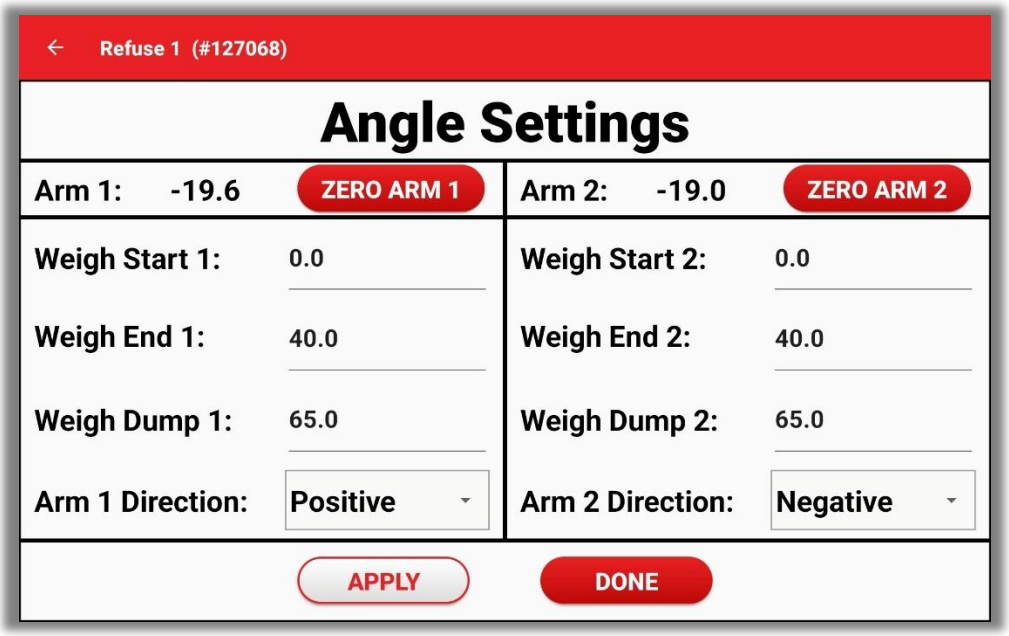


- **Unsent Records** - The number of unsent records on the device. Records that happen when the Android device does not have an internet connection are saved to the local storage on the device and are sent when the device regains an internet connection.
- **Sending In -**There is a one-minute countdown timer that will attempt to send the records automatically. This occurs in the background all the time when the App is running. The records should be sent automatically when an internet connection is made without having to enter this menu normally.
- If desired, the records can be sent manually by tapping on the “SEND” button. Once they begin to send, the number of unsent records should drop until it hits zero.
- If for whatever reason records exist that cannot be sent to the cloud due to a problem with the data, the “DELETE RECORDS” button can be pressed to clear out all unsent records.

SETTINGS (ONLINE)

ANGLE SETTINGS

The angle settings page is for calibrating the arms for cart tippers and rear loaders. This is useful when operators of cart tippers and rear loaders desire to know the weight of each individual load dumped into the truck (see **CART TIPPER MODE** for more).



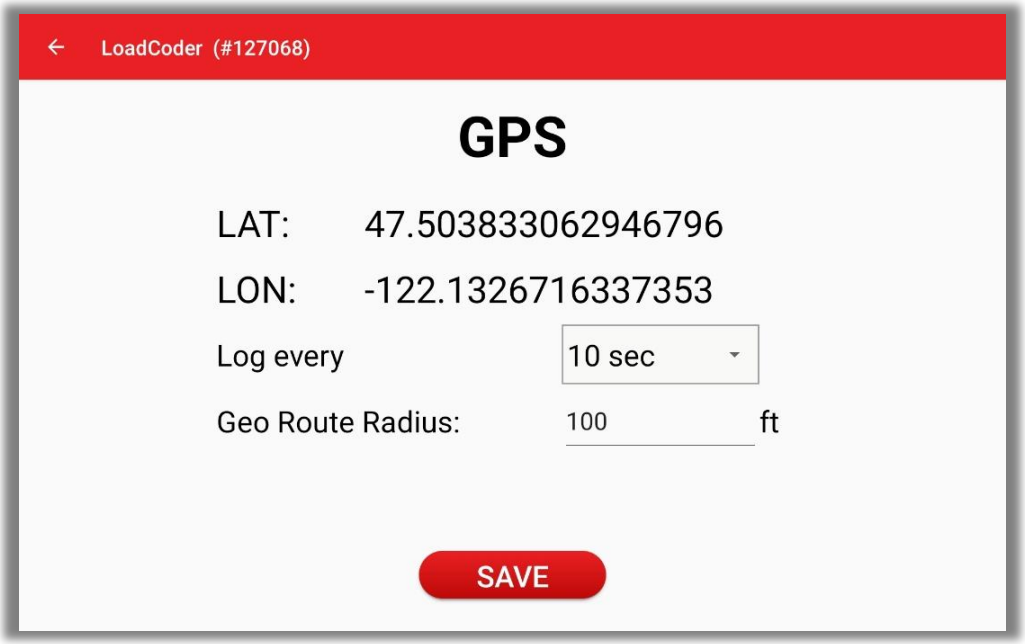
- **WEIGH START –** Should be set to 0.0 degrees. WEIGH START is the programmable angular set point where the weigh-in-motion window starts the weighing of each load.
- If it isn't programmed to 0.0 tap on the underlined text field to the right of "Weigh Start" and enter it. Hit the "APPLY" button to save the value
- **WEIGH END –** should be programmed to 40.0 degrees. WEIGH END is the programmable angular set point where the weigh-in-motion window ends the weighing of each load. If it isn't programmed to 40.0 tap on the underlined text field to the right of "Weigh End" and enter it. Hit the "APPLY" button to save the value
- **WEIGH DUMP –** should be set to 65.0 degrees. WEIGH DUMP is the programmable angular set point where the Arms are in what is considered the DUMP LOAD Position. If it isn't programmed to 65.0 tap on the underlined text field to the right of "Weigh Dump" and enter it. Hit the "APPLY" button to save the value.
- **ARM X DIRECTION –** Tap on the box next to "Arm Direction" to bring up a small drop down where you can select either "Positive" or "Negative". Select the option that causes

the angle to go in a positive direction when the module is raised and tap on “APPLY” to save the setting.

Note: As you lift the arms up, the angle in the box next to the “ZERO ARM” button should go in a positive direction. If it goes in a negative direction, the programmable “Arm Direction” needs to be reversed,

GPS

The GPS page shows the current location of the truck and allows for configuration of auto-logging and setting of the Geo Route Radius.



- **LAT –** The current latitude of the Android device.
- **LON –** the current longitude of the Android device.
- **Log Every** xx **Seconds –** The interval that the Application will send a GPS record. A GPS record contains just the GPS coordinates, the time and data and the truck/driver.
- **Geo Route Radius –** This is a number, in feet, of how far away LoadCoder® will select a route stop to be displayed on the route list when the App is in geo route mode. See **CHANGE GEO MODE** for more information.

CHANGE GEO MODE

CHANGE GEO MODE

In Geo Mode, LoadCoder® will use the location of the truck to display customers on the main menu that are within a certain radius of the truck. There are two Geo Modes*:

GEO-ROUTE MODE

- This mode updates the route list to show close-by stops only. Every time the truck comes to a stop, the list will be updated.
- What customers are in the route list is determined by the “geo-route radius”. This is a number, in feet, of how far away the App will detect a stop and display it on the route list. For example, if the geo-route radius is 1000 feet, all stops within 1000 feet of the truck will be displayed on the list.
- All stops within the geo-route radius will be displayed, with the closest stop at the top of the list, followed by any other stops that are within the radius, in order of their proximity to the truck. The top stop will also automatically be selected.
- You can change the size of the geo-route radius in GPS/GEO ROUTE in **SETTINGS**.
- If no stop is detected, there will always be a stop labeled CUSTOMER UNKOWN that will be associated with any loads recorded.
- If the truck is in an area with many stops close to each other, some action may need to be taken by the driver to select the correct one when picking it up. This can be done by simply tapping on the desired customer on the route list if it is not automatically selected when the truck comes to a stop.

GEO-FENCE MODE

- This mode selects and locks onto "CUSTOMER UNKNOWN" on the route list. When this specific stop is selected, the *LoadMan®* server will assign any record (load record, event record, etc...) to the best possible match based on the GPS coordinates of that record.
- This is done on the “back-end” of the system. Meaning the Android App will send the record associated with CUSTOMER UNKNOWN and let the cloud software assign the record later.
- The geo-route radius DOES NOT matter for this mode.

CHANGE GEO MODE

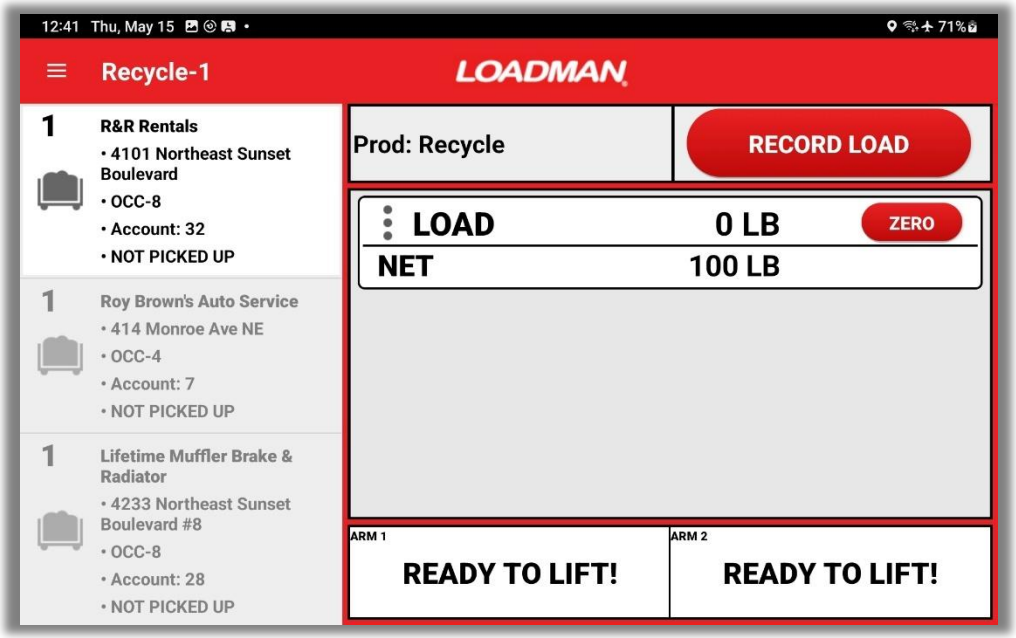
***You can put the tablet into either or both modes. If both are enabled, CUSTOMER UNKNOWN will still be at the top of the list and most loads will be recorded with it, but the driver will also have a list of near-by stops underneath that they can select if they are picking up a container that is near another one**

CART TIPPER MODE

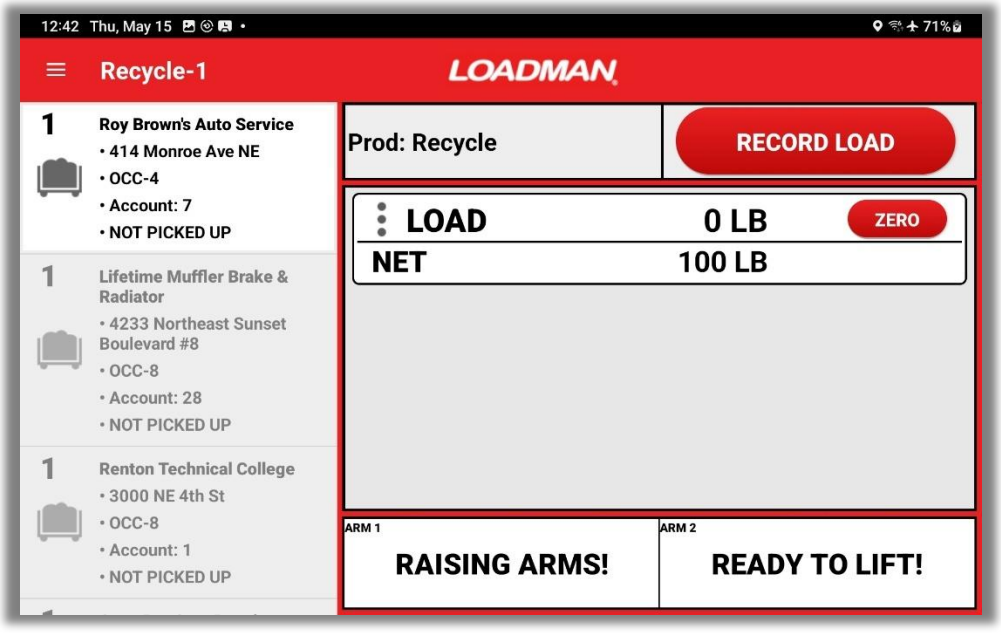
CART TIPPER MODE

When operators are using LoadCoder® with a cart tipper, the App will display the arm status on the main menu and will automatically send a load record each time a load is picked up.

Both arms will display “READY TO LIFT!” when the arms are not in use and they have been calibrated correctly (see **ANGLE SETTINGS**).

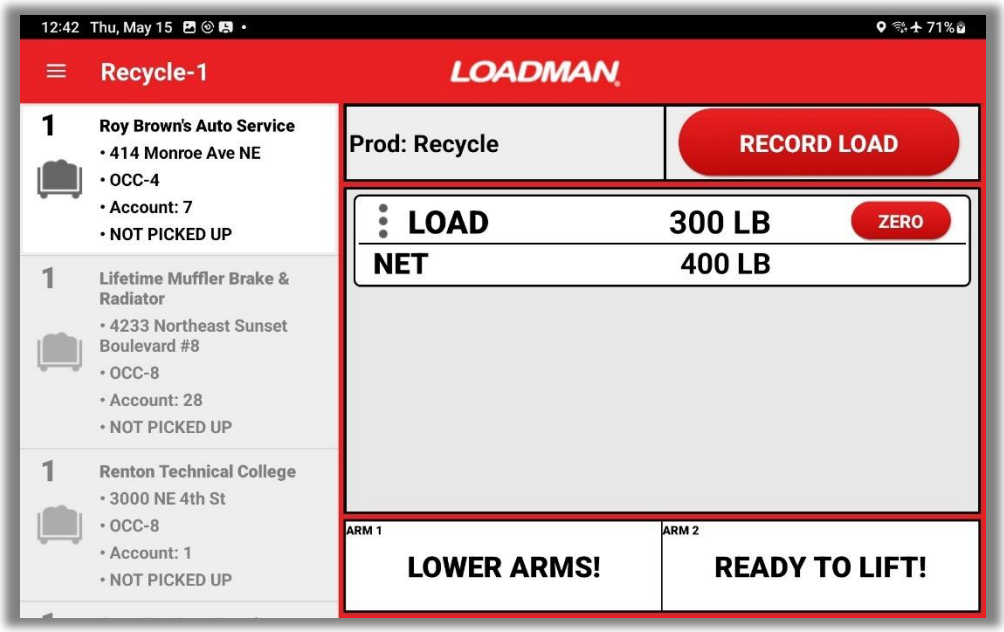


When one arm is raised, the App will detect this and say, “RAISING ARMS!”

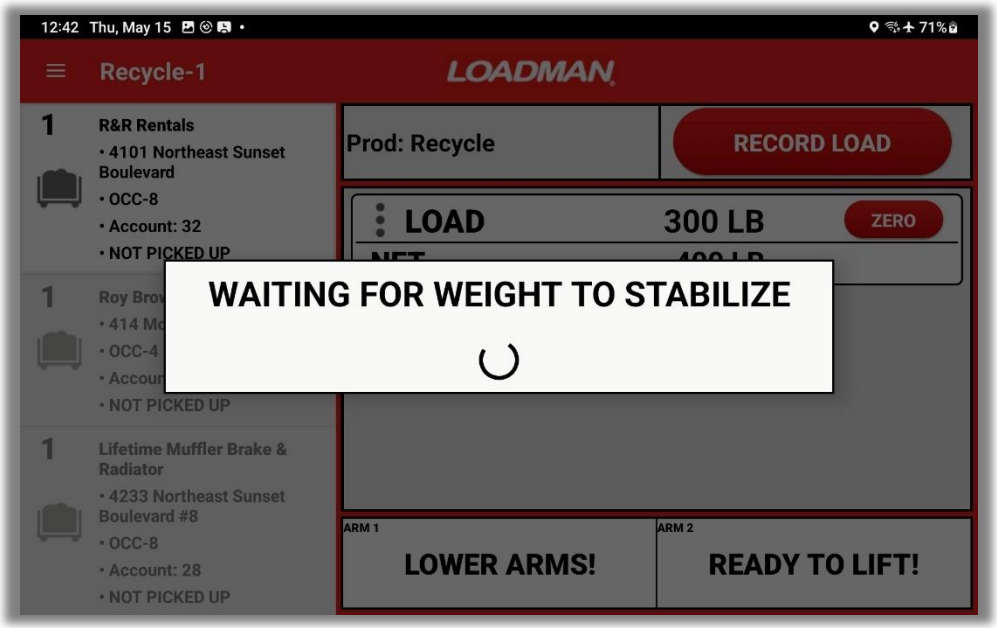


CART TIPPER MODE

When the arm has reached the threshold configured in **ANGLE SETTINGS**, the App will say, “LOWER ARMS!”

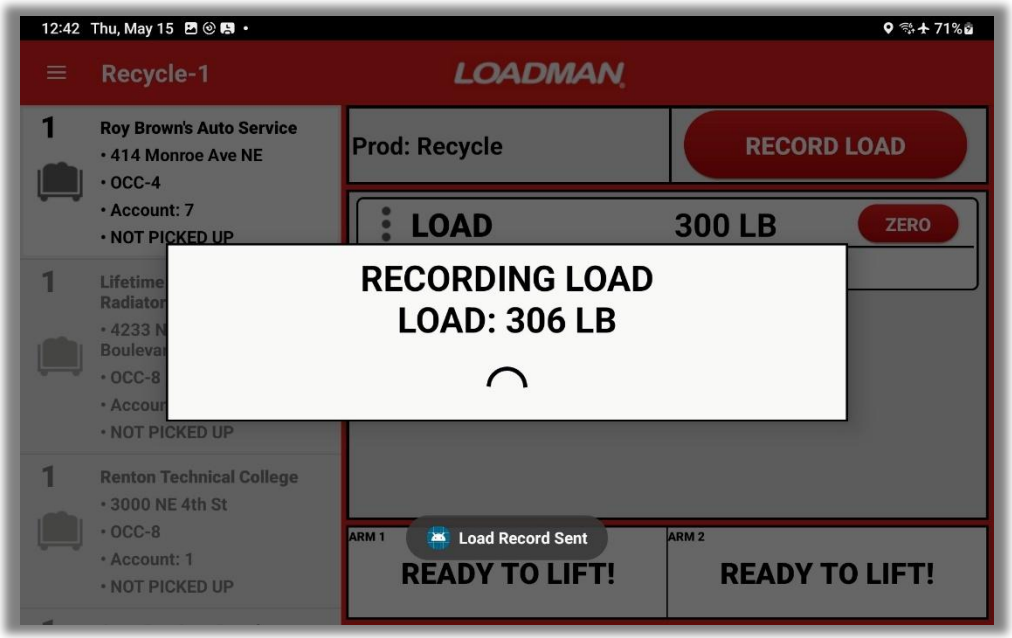


When the arms are lowered back to the ground, the App will then wait the set amount of seconds set in STABLE TIMER (configured in **MISC**) for the weight to stabilize in the truck.

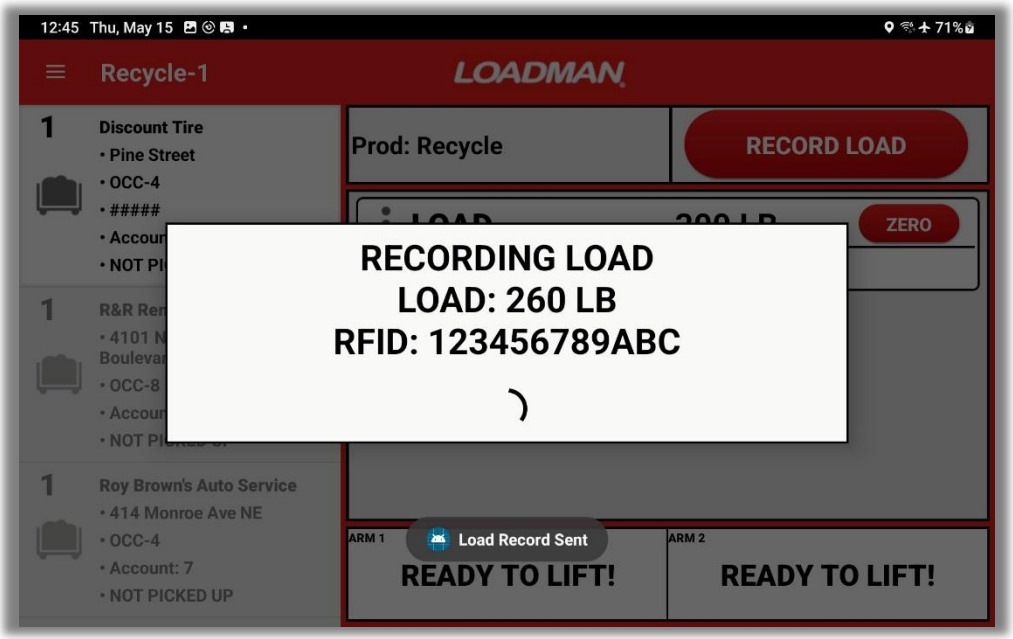


After this, LoadCoder® will record the load that was dumped in the truck and will assign the load to the customer selected.

CART TIPPER MODE



If RFID (see **RFID MODE**) mode is on, the App will also record the RFID code associated with the container picked up.

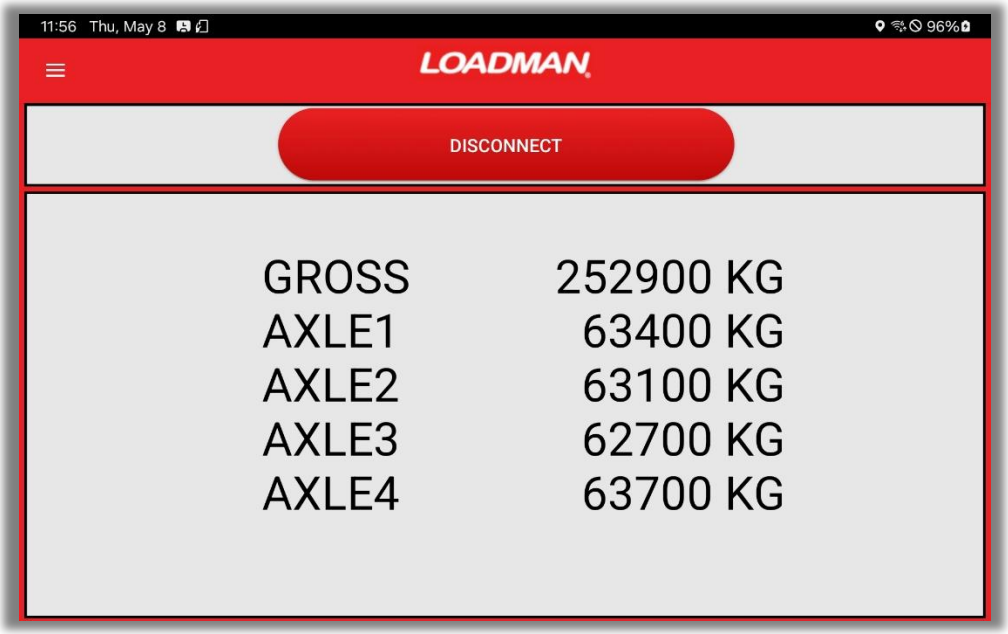


Note: the STABLE TIMER and LAST NET TIMER must be configured for the Cart Tipper Mode to function properly. See **MISC** > SCALE SETTINGS

SCOREBOARD MODE

SCOREBOARD MODE

For operators who only wish to see weight data, LoadCoder® has the ability to act as a scoreboard display and will show the weights detected by *LOADMAN*® in text format. The main menu in scoreboard mode looks like the image below.



The 3 horizontal lines (hamburger) button on the top left of the screen will have no options. The driver can only disconnect from the meter if they wish. To change the display in the app, drivers will have to configure their desired settings in the *LOADMAN*® meter. Here is a brief description of how to change the display in the meter:

- Continually depress the ⏻ **POWER** button, through the “GOODBYE!“ message, and until the “LOADMAN SETUP“ message is displayed.*
- Press the ❨SELECT key until you get to the “INSTALL?” page.
- Press the ↻PROGRAM key so that the “NO” changes to “YES”.
- Press the **SET** PROGRAM key to enter the “INSTALL” menu.
- Press the ❨SELECT key until you get to the “SETUP RS232?” page and select the ↻PROGRAM key.
- The meter will display, “RS232 PORT #1?” Press the **SET** PROGRAM key.
- Use the ❨SELECT key to find the “PRT” options.

SCOREBOARD MODE

- Use the PROGRAM key and the **SET** PROGRAM key to select the desired print displays.
- When you are finished, press the SELECT key until the meter says, “EXIT SETUP?” Select “YES”.
- The App should now display your desired settings.

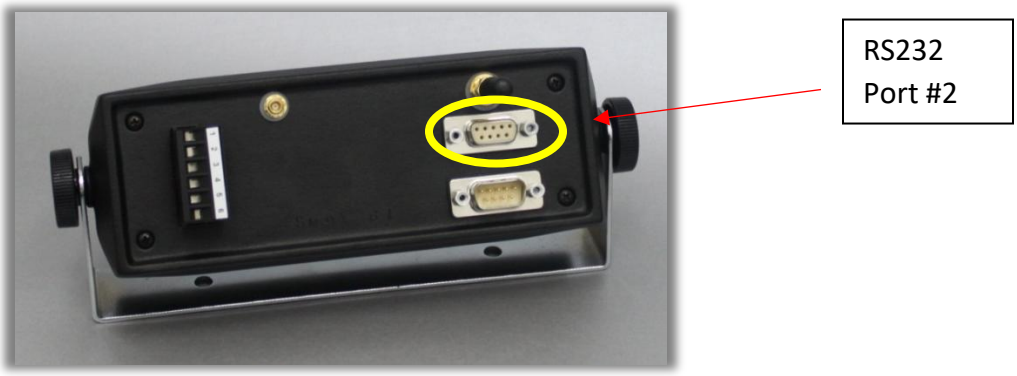
***While configuring the display in the meter, the App may display a message saying, “NO SIGNAL FROM TRUCK”. If this happens, just select, “KEEP LISTENING” and the App will reconnect once you exit SETUP mode in the meter**

Note: for more information on how to operate the *LOADMAN*® LM200 meter, refer to the *LOADMAN*® LM200 Operating Guide

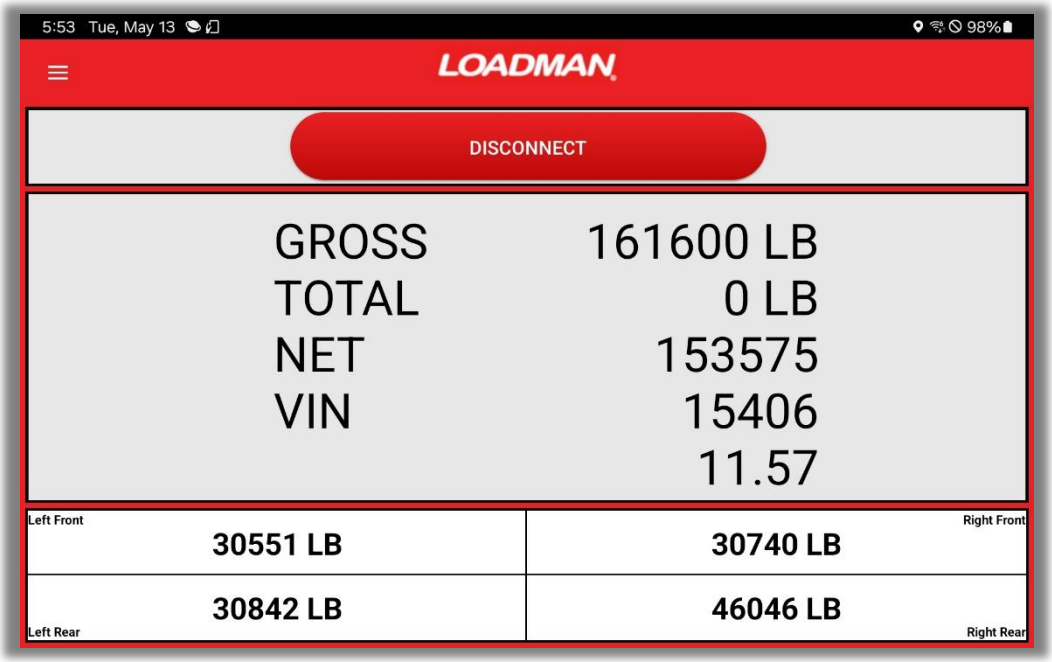
SCOREBOARD MODE WITH WEIGHT DISTRIBUTION

SCOREBOARD MODE WITH WEIGHT DISTRIBUTION

In addition to the scoreboard display, LoadCoder® can also display weight distribution to allow drivers to see where the weight is located in the truck. To do this, users must connect to the second RS232 port (shown below)



When this port is configured with a wireless connection, it will show up as another truck in the "SCANNING FOR TRUCKS" page. Connecting to that truck will bring the app to a screen that looks like this:



SCOREBOARD MODE WITH WEIGHT DISTRIBUTION

The main difference will be the weight distribution table at the bottom of the screen. The Loadcells that contribute to each location in the truck are configurable by disconnecting from the second port, connecting to the first RS232 port, and navigating to **SETTINGS** > **ASSIGN CELLS** (see **ASSIGN CELLS** for instructions on how to configure the Loadcells). Here is an explanation of how to connect to the second RS232 port:

1. Click the “DISCONNECT” button at the top of the screen.
2. Click “SCAN FOR TRUCKS”.
3. Select the other truck option.
4. If you wish to configure the Loadcells, follow steps 1-2 and select the first option from the list of trucks.

Note: any settings you change when connected to RS232 port #1 will affect RS232 port #2

COLLECTING DATA

COLLECTING LOAD DATA

When a load is recorded, load data is sent via the internet to the *LoadMan*® servers. There, the data is stored in the database that the LoadCoder® Android App is licensed for. If there is no internet connection to the Android device, the load data will be stored in the local storage of the Android device until an internet connection is reestablished. The following are all possible data that can be sent in a load record:

Table 12. Recorded Load Data

LOAD DATA
Date & Time
Account Number
Route ID
Load Weight (LOAD MODE or AUTO RECORD MODE only)
Container Weight
Net Truck Weight
Product
GPS Coordinates
Asset ID Number
Meter Serial Number
RFID Tag Number*
Arm 1 or 2*

***These apply only to cart tipper installations**

AUTOMATIC RECORDING

LoadCoder® can be configured for automatic data collection so that drivers don't have to worry about entering load data manually.

To enable auto record, enter all weight Set-Points (see **SETTINGS** > **MISC** > SCALE SETTINGS > MORE SETTINGS) and select "Auto Record" in **MISC.**

Below is an example of auto record settings for max loading and dumping:

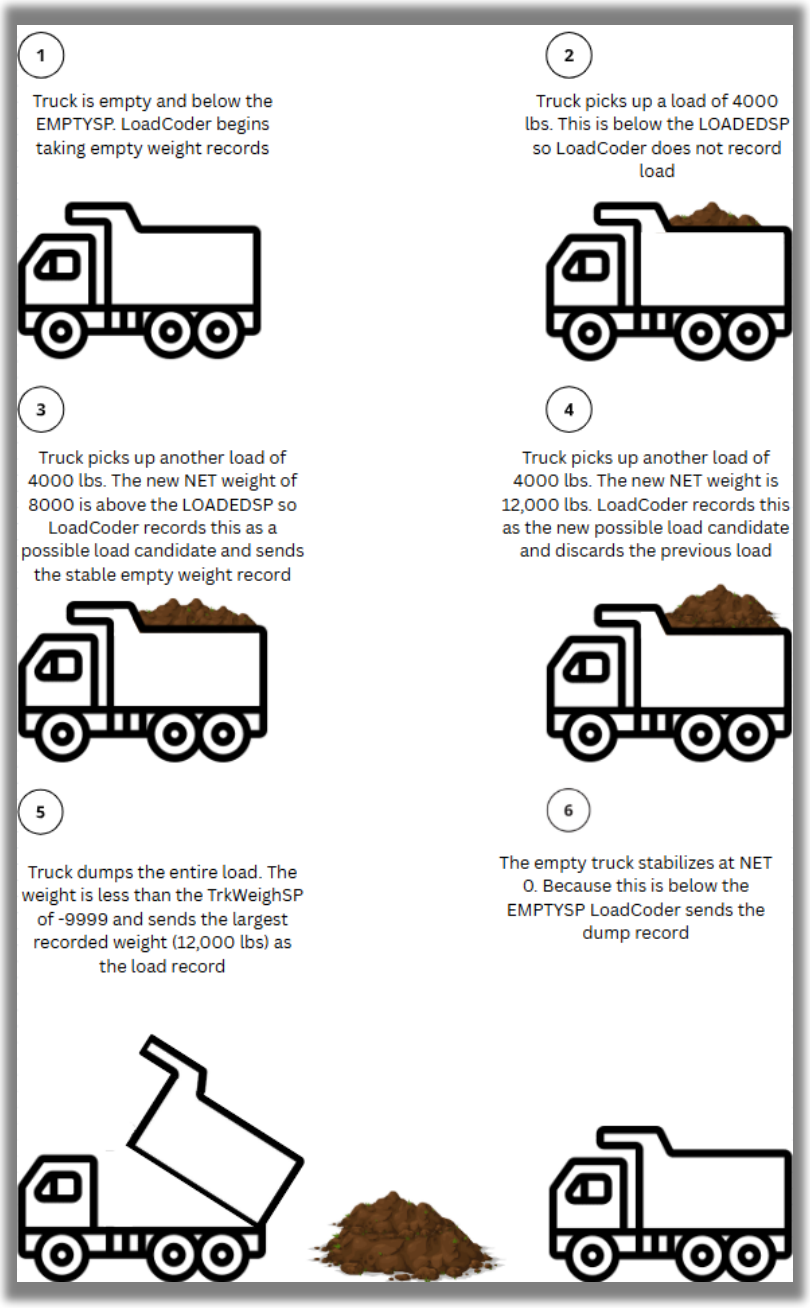
AUTO RECORD EXAMPLE

Load-to-Max and Dump

- **TRKWEIGHSP = -9999 LBS**
- **STABLESEC = 10 SEC**
- **STABLEWEIGH = 200 LBS**

COLLECTING DATA

- **EMPTYSP = 1000 LBS**
- **LOADEDSP = 7000 LBS**



1) LoadCoder® starts taking empty weight records because NET weight is below the EMPTYSP of 1000 lbs.
2) Load picked up by truck. Record nothing as a 4000 lb load is less than LOADEDSP of

7000 lbs.

3) Second load picked up by truck – total of 8000 lbs is greater than LOADEDSP. Therefore, record loaded weight and stable empty weight as a possible load data record (with current time, location, etc).
4) Third load picked up by truck – total of 12,000 lbs. Therefore, this becomes the new load data record candidate. Dismiss the last candidate of 8000 lbs.
5) Truck dumps entire load – Weight goes below TRKWEIGHSP and zero net weight less than EMPTYSP=1000 LBS.
    a. The last load data record candidate is now recorded with its original date and time at 12,000 lbs.
    b. The empty truck weight will be recorded (zero lbs) at the time it was emptied.

Now the driver can return, Load-to-Max and Dump – while LoadCoder® automatically handles the data collection.

OUT-OF-SEQUENCE OR UNPLANNED COLLECTIONS:

It sometimes is necessary to collect a load out-of-sequence or to record a load that was unplanned during a collection route. There are several options available through the front panel PROGRAM buttons for these and similar situations.

- If the Application is in a geo detection mode, the app should automatically detect any customer, even when they are out of sequence.
- If the Application is in geo route mode, and the customer is part of the selected route, it should appear on screen and be automatically selected. If it is not part of the route, it is recommended that CUSTOMER UNKNOWN be selected, which is always at the bottom of the route list.
- If the Application is running in geo fence mode, CUSTOMER UNKNOWN will always be selected and thus, no action is needed.

COLLECTING DATA

- If the Application is running in sequence mode (aka non-geo detection mode) AND the stop is in the current route, then the driver will need to scroll to and select the current customer if it is out of sequence. If the stop is in a different route, the route will need to be changed by opening the side menu and selecting “Change Route”. Alternatively, you could scroll to the bottom of the route list and select CUSTOMER UNKNOWN, which will always be there.

RECORDING UNEXPECTED PROBLEMS:

Sometimes a problem will occur in picking up or delivering a load and it is valuable to record that problem for a particular route stop (e.g., no container, road blocked, gate locked, etc.). For more information on recording these problems or “events”, see **EVENTS** in **NORMAL OPERATING MODE (ONLINE)**.

SENDING UNSENT DATA

If the LoadCoder® application tried to send records of any kind to the cloud, but was unsuccessful due to no internet connection, the data will be stored locally in the Android device and will be sent when an internet connection is reestablished (see **RECORDS** in **SETTINGS (ONLINE)**).

LOADMAN SPOTLIGHT DATABASE

LOADMAN SPOTLIGHT DATABASE

The *LoadMan®* Spotlight database allows managers to see all the data being uploaded by trucks in their fleet real-time.

To use the Spotlight software:

1. Navigate to https://loadmanspotlight.com/
2. You will be brought to a login page. After logging in a message will appear saying, "Please Select an Application".
3. Select "Spotlight LoadManager".
4. Another page will appear saying, "Please Select a Location".
5. Select your desired location and click "SUBMIT".

The main page looks like the image below. Refer to the table below for a description of each menu option.

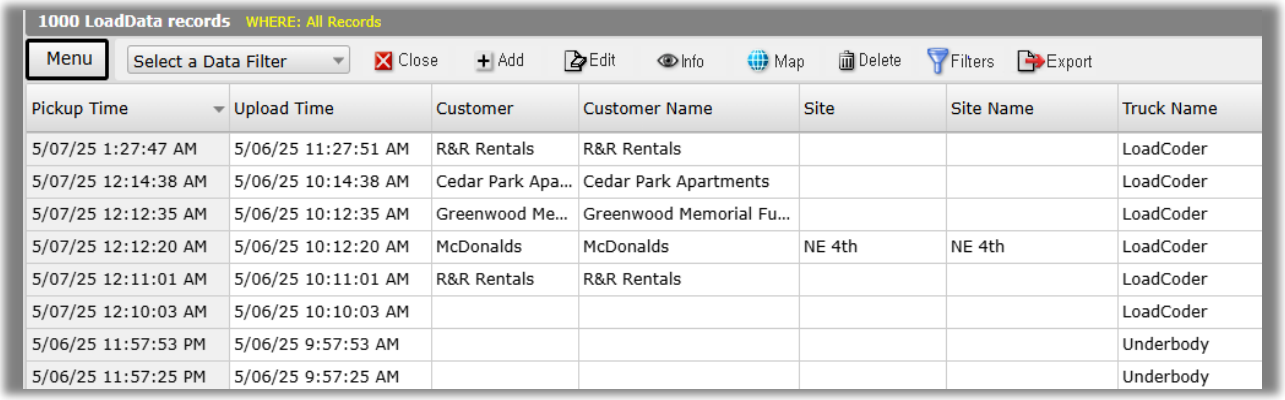
Load Data	Displays all data uploaded by the fleet
Customers	Displays customer information including phone # and address
Routes	Displays all the downloadable routes for drivers
Trucks	Displays all trucks in the fleet

LOADMAN SPOTLIGHT DATABASE

Drivers	Displays all drivers and their information
Products	Displays all product types that drivers can pick up
Assets	Displays owned containers
Events	Displays all event types that drivers can report
Maps	Displays the map for truck and load tracking

LOAD DATA

The Load Data page allows managers to see all the load records being uploaded by the drivers in real time.



Pickup Time	Upload Time	Customer	Customer Name	Site	Site Name	Truck Name
5/07/25 1:27:47 AM	5/06/25 11:27:51 AM	R&R Rentals	R&R Rentals			LoadCoder
5/07/25 12:14:38 AM	5/06/25 10:14:38 AM	Cedar Park Apa...	Cedar Park Apartments			LoadCoder
5/07/25 12:12:35 AM	5/06/25 10:12:35 AM	Greenwood Me...	Greenwood Memorial Fu...			LoadCoder
5/07/25 12:12:20 AM	5/06/25 10:12:20 AM	McDonalds	McDonalds	NE 4th	NE 4th	LoadCoder
5/07/25 12:11:01 AM	5/06/25 10:11:01 AM	R&R Rentals	R&R Rentals			LoadCoder
5/07/25 12:10:03 AM	5/06/25 10:10:03 AM					LoadCoder
5/06/25 11:57:53 PM	5/06/25 9:57:53 AM					Underbody
5/06/25 11:57:25 PM	5/06/25 9:57:25 AM					Underbody

You can view each load record upload, when it was uploaded, the customer, and which truck picked it up. Using the scroll bar at the bottom of the screen to scroll to the right will reveal more information like the driver's name, the route they are on, the weight of the load, etc.

At the top of the screen there is a "Menu" button. Hovering over it will reveal some options, mainly the "Refresh" option to refresh the load data as drivers are constantly uploading new records.

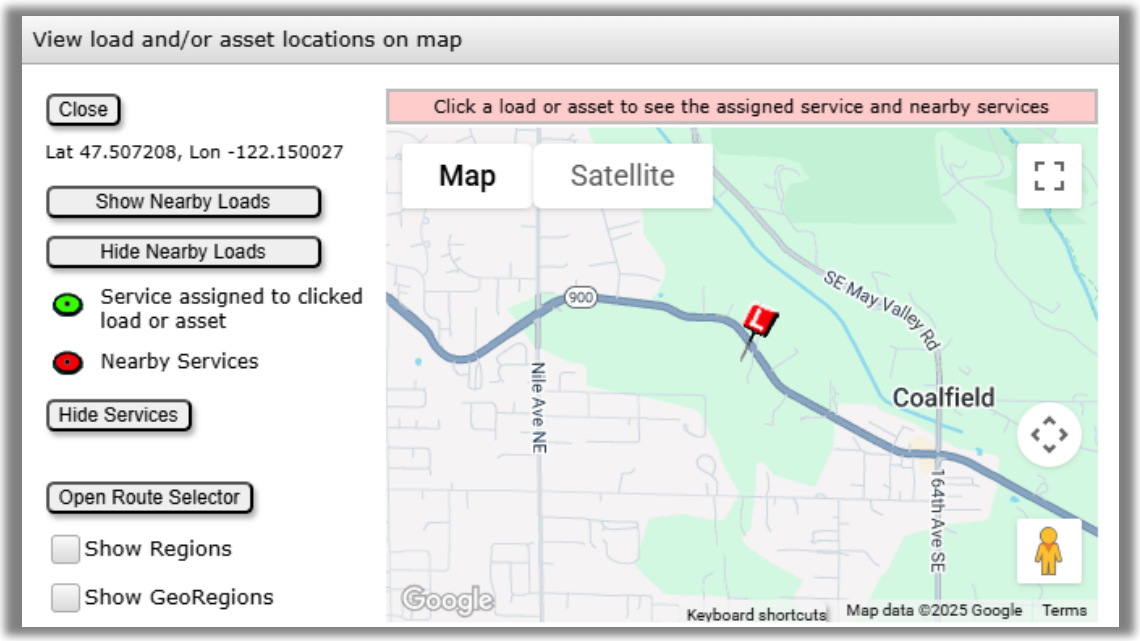
- **SELECT A DATA FILTER –** Allows you to filter the data according to a certain category.
- **CLOSE –** Returns to the main menu.
- **ADD –** Allows you to manually enter a load record.
- **EDIT –** Allows you to manually edit the selected data row (To select a data row, simply click anywhere on the desired row).
- **INFO –** Brings up a pop-up menu displaying load information, customer information, and location information of the selected data row.

LOADMAN SPOTLIGHT DATABASE

- **MAP –** Displays the location of the load for the selected data row (see MAP for more information).
- **DELETE –** Delete the selected data row.
- **FILTERS –** Same as the "SELECT A DATA FILTER" drop-down menu.
- **EXPORT –** Export load data.

MAP

The map allows users to view the location of a recorded load, and see their downloadable routes.



This image shows the map on the LoadData page. The **CUSTOMERS, ROUTES,** and **ASSESTS** pages have a map function but each have slightly different options (to be covered later).

The pin on the map shows the load selected on the LoadData table.

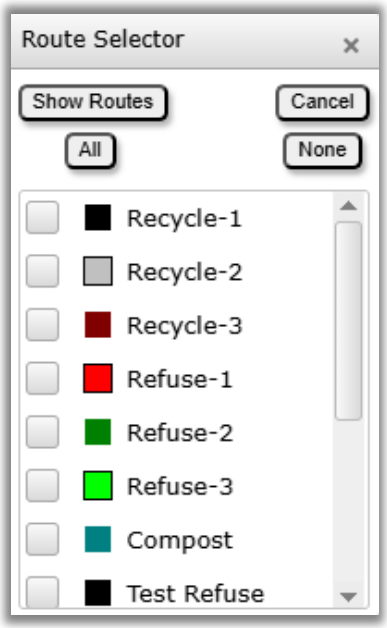
- **SHOW NEARBY LOADS –** Shows other recorded loads that are near the current one selected (select "Hide Nearby Loads" to stop displaying).
- This icon displays services attached to the current load selected (click the pin to display).

LOADMAN SPOTLIGHT DATABASE

-  This icon displays services that are near the selected load (click the pin to display).
- **HIDE SERVICES –** Click this button to hide the service icons.
- **OPEN ROUTE SELECTOR –** Allows the user to display their downloadable routes on the map (more information in ROUTE SELECTOR).
- **SHOW REGIONS –** Any load picked up in a specific region tells Spotlight to assign that load to a specific customer. Regions can be drawn by the user by navigating to TOOLS > REGIONS (same for **CUSTOMERS, ROUTES,** and **ASSETS**).
- **SHOW GEOREGIONS –** These work similarly to normal regions but are used for services instead of loads (same for **ROUTES**).

ROUTE SELECTOR

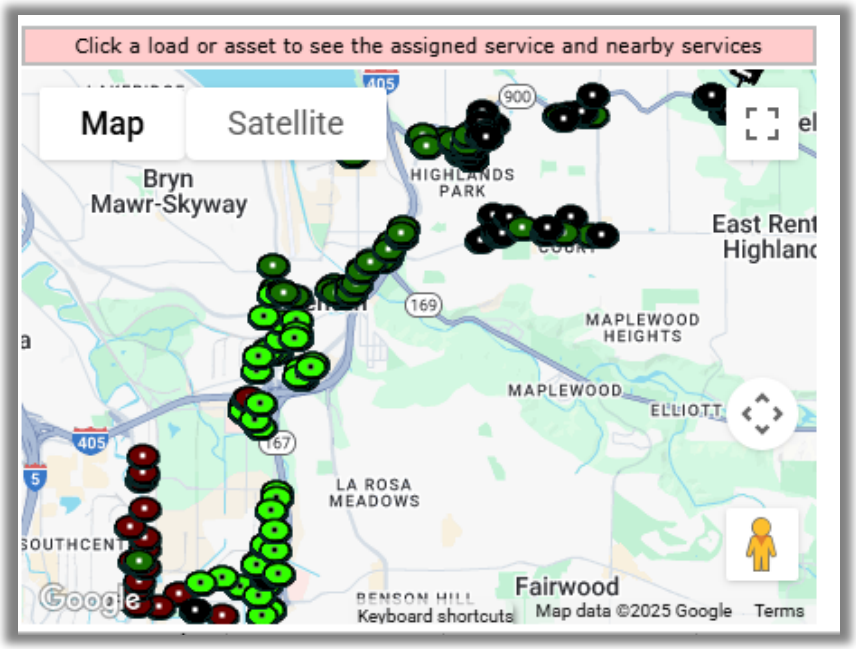
The route selector button opens a menu that looks like the image below (this option is available on the **LOAD DATA, CUSTOMERS, ROUTES,** and **ASSETS** pages).



The list shown are all the downloadable routes that drivers may be on. Select any number of these to be displayed on the map. The color next to each route is the color that it will be displayed as on the map. If you wish to see all routes, click “All”. To confirm the action, click “Show Routes”.

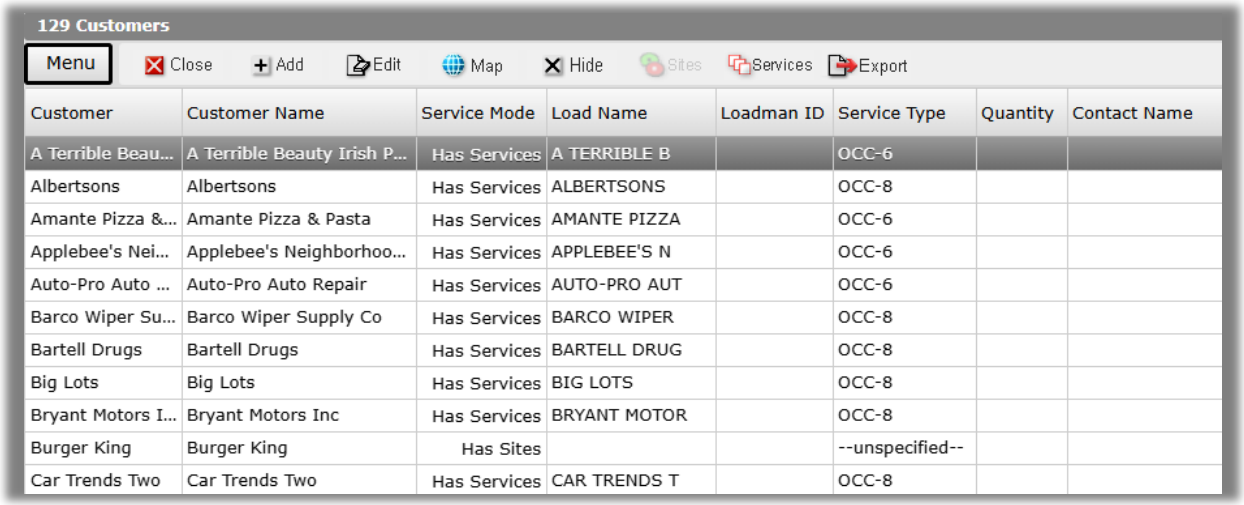
The map will now look like the image below. Hover over each icon to view information about the stop.

LOADMAN SPOTLIGHT DATABASE



CUSTOMERS

The customers menu displays information about each customer including phone #, address, and the type of service they have requested.



129 Customers

Menu | Close | Add | Edit | Map | Hide | Sites | Services | Export

Customer	Customer Name	Service Mode	Load Name	Loadman ID	Service Type	Quantity	Contact Name
A Terrible Beau...	A Terrible Beauty Irish P...	Has Services	A TERRIBLE B		OCC-6		
Albertsons	Albertsons	Has Services	ALBERTSONS		OCC-8		
Amante Pizza &...	Amante Pizza & Pasta	Has Services	AMANTE PIZZA		OCC-6		
Applebee's Nei...	Applebee's Neighborhoo...	Has Services	APPLEBEE'S N		OCC-6		
Auto-Pro Auto ...	Auto-Pro Auto Repair	Has Services	AUTO-PRO AUT		OCC-6		
Barco Wiper Su...	Barco Wiper Supply Co	Has Services	BARCO WIPER		OCC-8		
Bartell Drugs	Bartell Drugs	Has Services	BARTELL DRUG		OCC-8		
Big Lots	Big Lots	Has Services	BIG LOTS		OCC-8		
Bryant Motors I...	Bryant Motors Inc	Has Services	BRYANT MOTOR		OCC-8		
Burger King	Burger King	Has Sites			--unspecified--		
Car Trends Two	Car Trends Two	Has Services	CAR TRENDS T		OCC-8		

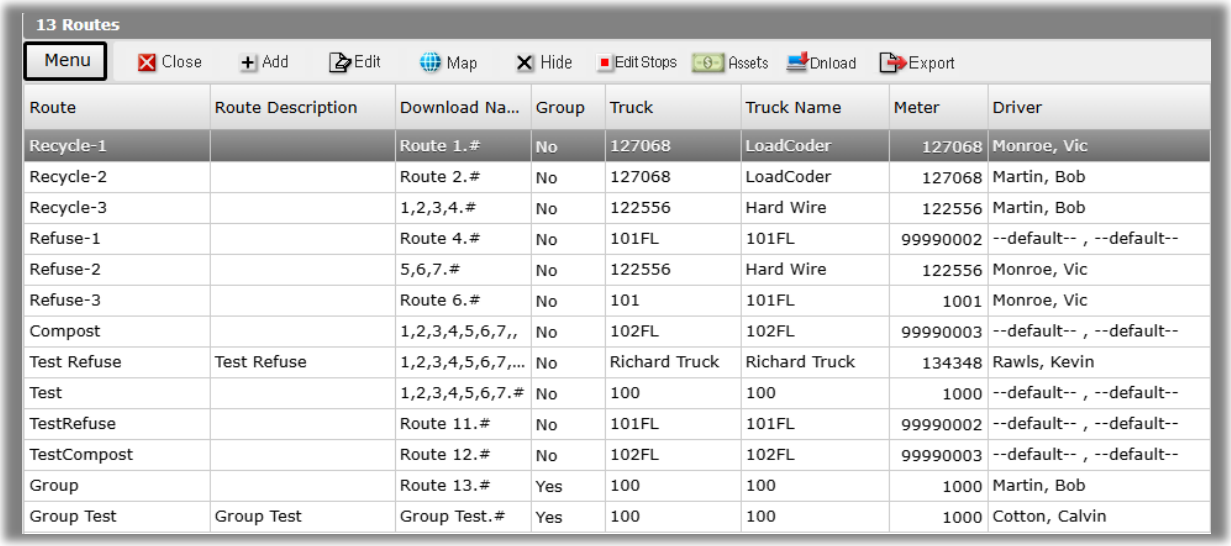
- **ADD –** Add a new customer.
- **EDIT –** Edit selected customer's information.
- **MAP –** See MAP.

LOADMAN SPOTLIGHT DATABASE

- **HIDE –** Hides the selected row. To show hidden rows, hover over “Menu” and select “Show Hidden”.
- **SITES –** Will appear when a customer with “Has Sites” is selected. Shows the types of services done for that customer.
- **SERVICES –** Will appear when a customer with “Has Services” is selected. Shows the types of services done for the selected customer.

ROUTES

The routes page shows all downloadable routes for drivers. You can edit each route and assign drivers to routes.



13 Routes

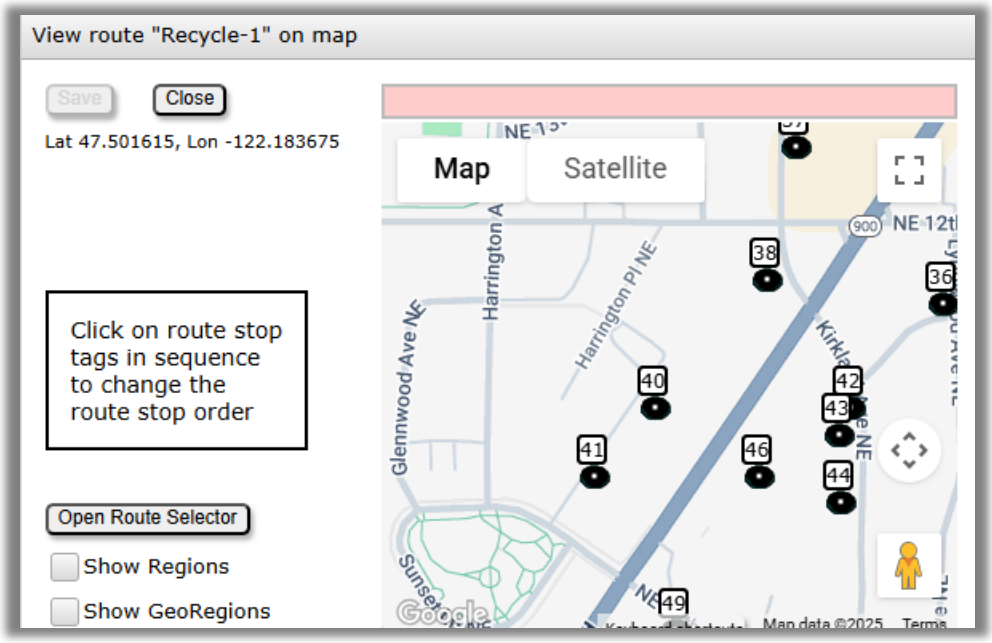
Menu | Close | Add | Edit | Map | Hide | Edit Stops | Assets | Dnload | Export

Route	Route Description	Download Na...	Group	Truck	Truck Name	Meter	Driver
Recycle-1		Route 1.#	No	127068	LoadCoder	127068	Monroe, Vic
Recycle-2		Route 2.#	No	127068	LoadCoder	127068	Martin, Bob
Recycle-3		1,2,3,4.#	No	122556	Hard Wire	122556	Martin, Bob
Refuse-1		Route 4.#	No	101FL	101FL	99990002	--default-- , --default--
Refuse-2		5,6,7.#	No	122556	Hard Wire	122556	Monroe, Vic
Refuse-3		Route 6.#	No	101	101FL	1001	Monroe, Vic
Compost		1,2,3,4,5,6,7,,	No	102FL	102FL	99990003	--default-- , --default--
Test Refuse	Test Refuse	1,2,3,4,5,6,7,...	No	Richard Truck	Richard Truck	134348	Rawls, Kevin
Test		1,2,3,4,5,6,7.#	No	100	100	1000	--default-- , --default--
TestRefuse		Route 11.#	No	101FL	101FL	99990002	--default-- , --default--
TestCompost		Route 12.#	No	102FL	102FL	99990003	--default-- , --default--
Group		Route 13.#	Yes	100	100	1000	Martin, Bob
Group Test	Group Test	Group Test.#	Yes	100	100	1000	Cotton, Calvin

- **ADD –** Add a new downloadable route.
- **EDIT –** Edit the selected route (truck, driver assign, map color, route name).
- **MAP –** (See MAP) in **ROUTES,** you can use the map to edit the order of the stops in the selected route.
- **EDIT STOPS –** Edit the order of stops for the route.
- **ASSETS –** Select specific assets to be downloaded with recipe routes.
- **DOWNLOAD –** Download the data.
- **EXPORT –** Export the data.

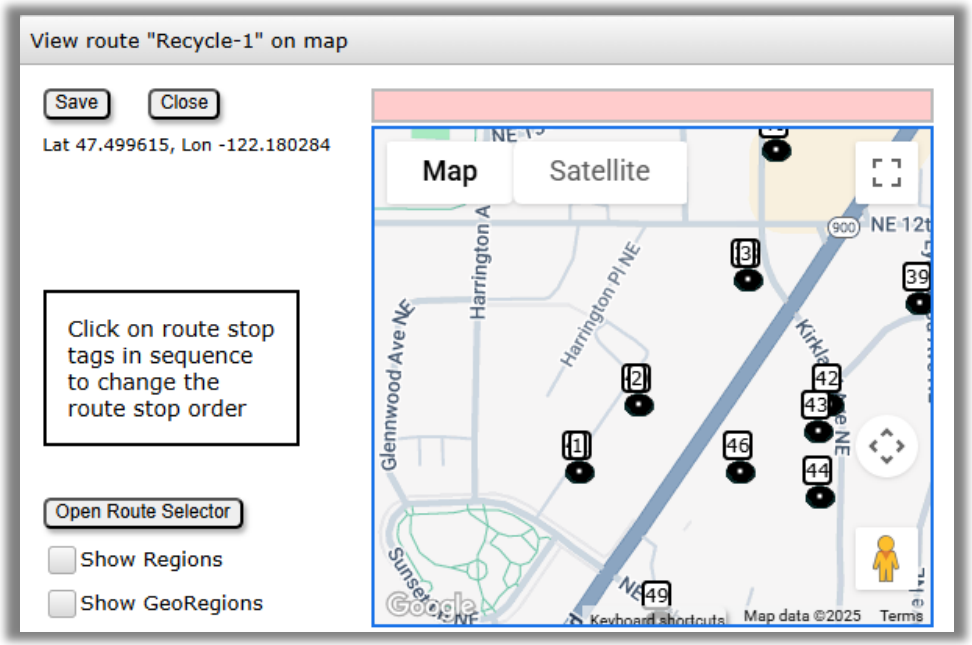
LOADMAN SPOTLIGHT DATABASE

The image below shows the stops on the “Recycle-1” route. The numbers show the order of the stops.



To change the order of the stops, click on the stops in the order you desire, and the numbers will change.

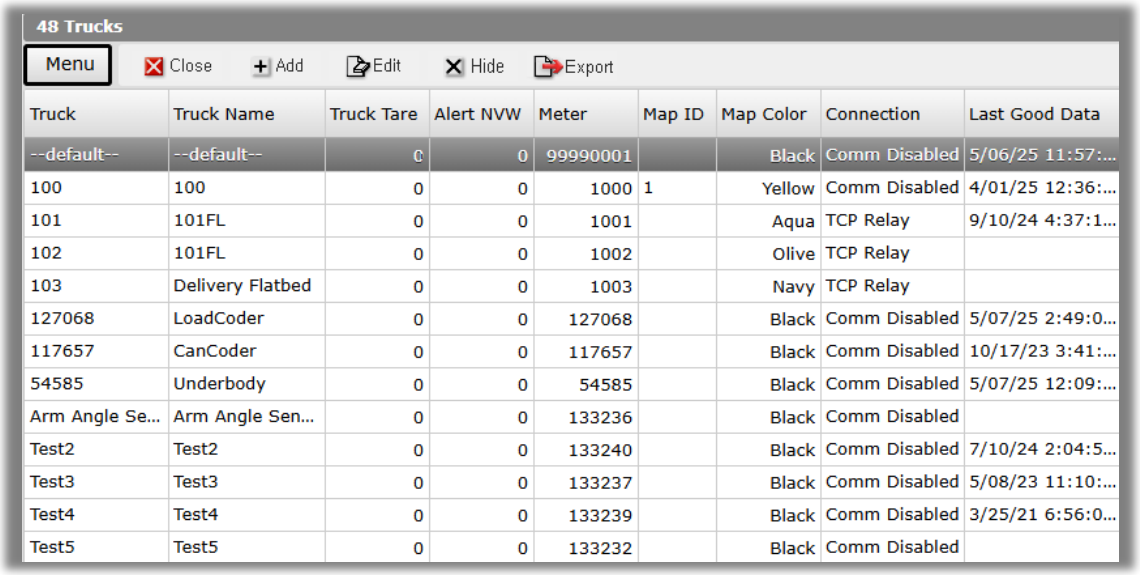
After clicking “41”-“40”-“38” in that order, the new order is “1”-“2”-“3”.



LOADMAN SPOTLIGHT DATABASE

TRUCKS

The trucks menu displays all of the trucks in the fleet.



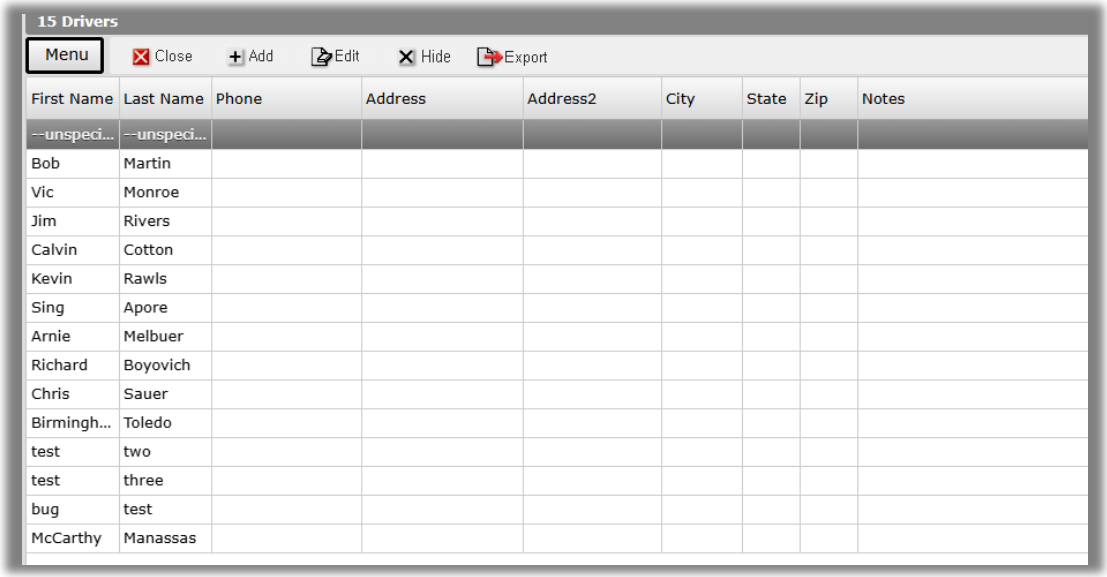
Truck	Truck Name	Truck Tare	Alert NVW	Meter	Map ID	Map Color	Connection	Last Good Data
--default--	--default--	0	0	99990001		Black	Comm Disabled	5/06/25 11:57:...
100	100	0	0	1000	1	Yellow	Comm Disabled	4/01/25 12:36:...
101	101FL	0	0	1001		Aqua	TCP Relay	9/10/24 4:37:1...
102	101FL	0	0	1002		Olive	TCP Relay	
103	Delivery Flatbed	0	0	1003		Navy	TCP Relay	
127068	LoadCoder	0	0	127068		Black	Comm Disabled	5/07/25 2:49:0...
117657	CanCoder	0	0	117657		Black	Comm Disabled	10/17/23 3:41:...
54585	Underbody	0	0	54585		Black	Comm Disabled	5/07/25 12:09:...
Arm Angle Se...	Arm Angle Sen...	0	0	133236		Black	Comm Disabled	
Test2	Test2	0	0	133240		Black	Comm Disabled	7/10/24 2:04:5...
Test3	Test3	0	0	133237		Black	Comm Disabled	5/08/23 11:10:...
Test4	Test4	0	0	133239		Black	Comm Disabled	3/25/21 6:56:0...
Test5	Test5	0	0	133232		Black	Comm Disabled	

- **ADD –** Add a new truck to the fleet.
- **EDIT –** Edit the name, tare weight, and color of the selected truck.
- **HIDE –** Hide the selected row.
- **EXPORT –** Export the data.

DRIVERS

The drivers menu shows all drivers in the fleet.

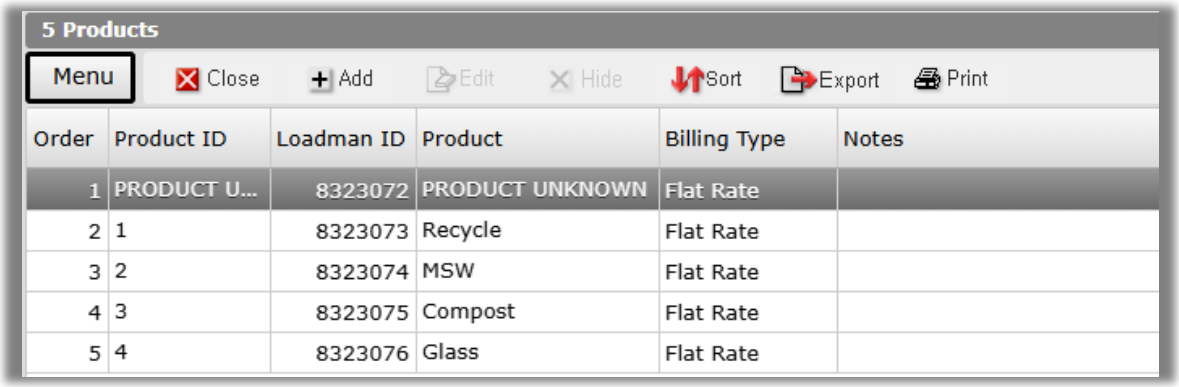
LOADMAN SPOTLIGHT DATABASE



All menu options are the same as the **TRUCKS** menu but for the drivers.

PRODUCTS

The products menu displays the types of products that drivers may pick up.

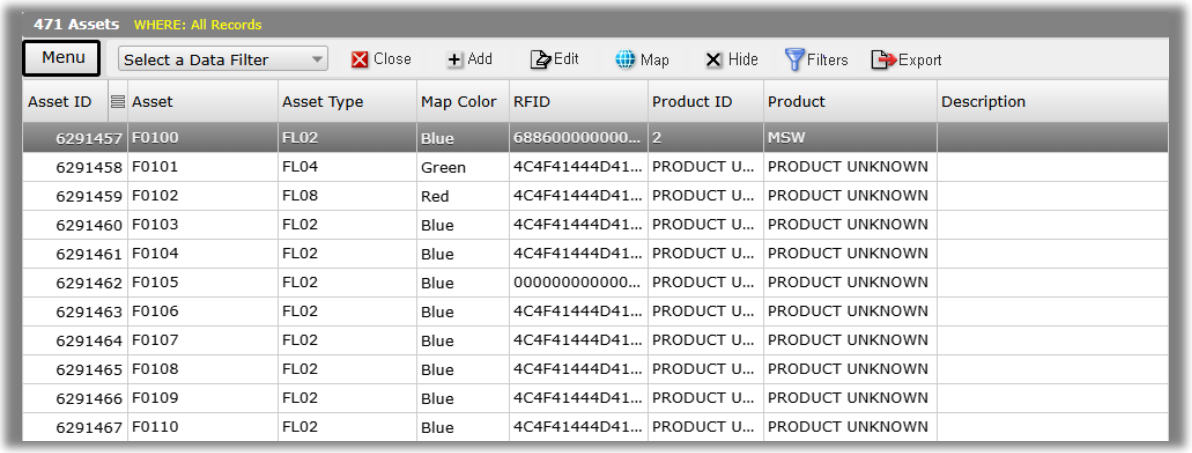


- **ADD –** Add a new product.
- **EDIT –** Edit the selected product.
- **HIDE –** Hide the selected row.
- **SORT –** Edit the order that the products are displayed in.
- **EXPORT –** Export the data.
- **PRINT –** Print the data.

LOADMAN SPOTLIGHT DATABASE

ASSETS

The assets menu allows users to see and edit their containers that have RFID tags for container tracking purposes.



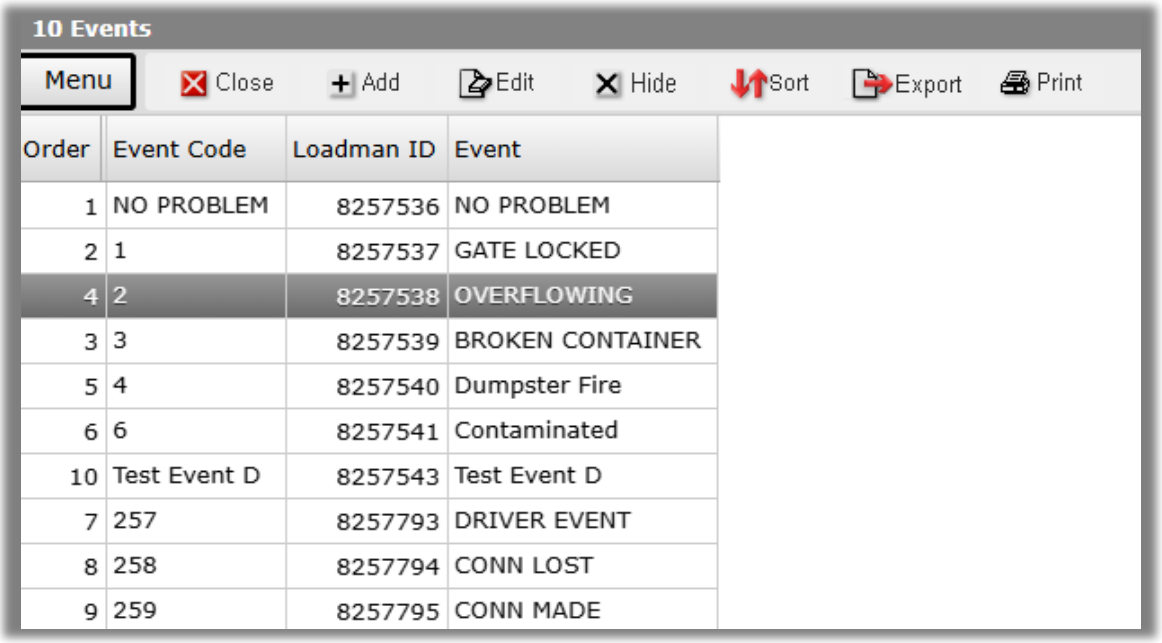
Asset ID	Asset	Asset Type	Map Color	RFID	Product ID	Product	Description
6291457	F0100	FL02	Blue	688600000000...	2	MSW	
6291458	F0101	FL04	Green	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	
6291459	F0102	FL08	Red	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	
6291460	F0103	FL02	Blue	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	
6291461	F0104	FL02	Blue	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	
6291462	F0105	FL02	Blue	000000000000...	PRODUCT U...	PRODUCT UNKNOWN	
6291463	F0106	FL02	Blue	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	
6291464	F0107	FL02	Blue	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	
6291465	F0108	FL02	Blue	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	
6291466	F0109	FL02	Blue	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	
6291467	F0110	FL02	Blue	4C4F41444D41...	PRODUCT U...	PRODUCT UNKNOWN	

- **ADD –** Add a new container.
- **EDIT –** Edit a container's name, product, RFID code.
- **MAP –** See selected container's location.
- **HIDE –** Hide the selected row.
- **FILTERS –** Apply filters to the data.
- **EXPORT –** Export the data.

EVENTS

Displays the types of events that drivers can report.

LOADMAN SPOTLIGHT DATABASE



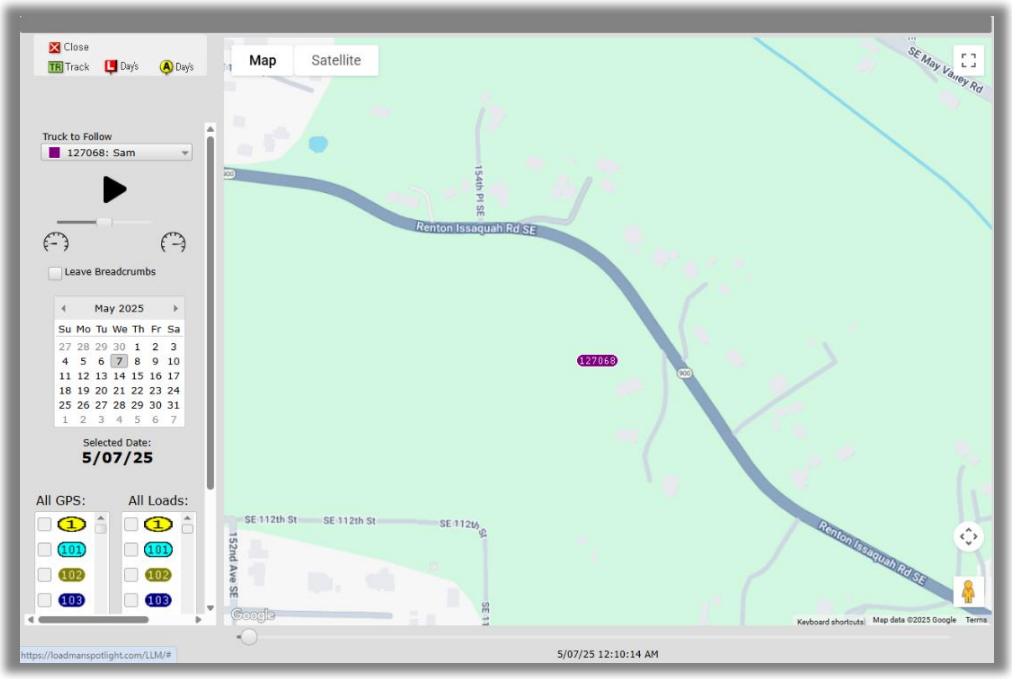
Order	Event Code	Loadman ID	Event
1	NO PROBLEM	8257536	NO PROBLEM
2	1	8257537	GATE LOCKED
4	2	8257538	OVERFLOWING
3	3	8257539	BROKEN CONTAINER
5	4	8257540	Dumpster Fire
6	6	8257541	Contaminated
10	Test Event D	8257543	Test Event D
7	257	8257793	DRIVER EVENT
8	258	8257794	CONN LOST
9	259	8257795	CONN MADE

- **ADD –** Add a new reportable event.
- **EDIT –** Edit the event code and event name of the selected event.
- **HIDE –** Hide the selected row.
- **SORT –** Sort the order of the events.
- **EXPORT –** Export the data.
- **PRINT –** Prints the data.

MAPS

The maps menu provides live tracking of each truck in the fleet and all downloadable routes using Google Maps.

LOADMAN SPOTLIGHT DATABASE



The image above shows the map when tracking a specific truck (in this case the truck named "120768" is being tracked). The drop-down menu on the left called "Truck to Follow" allows users to select specific trucks from their fleet to track.

Here is a description of the side menu items:

- **CLOSE –** Closes the map and goes back to the main menu.
- **TRUCK TO FOLLOW –** Select specific truck to track.
- ▶ **–** Plays back all data recorded on the selected day and follows the selected truck's movement throughout the day.
-  **–** The slider above these two dials controls the speed of the playback.
- **LEAVE BREADCRUMBS –** Leaves a trail of the truck's movement on the map during the playback.
- **CALENDAR –** The calendar allows users to select specific days the truck's data on that day.
- **SELECTED DATE –** Displays the date on the calendar selected.
- **ALL GPS –** Select which trucks' location data you would like to see on the map.
- **ALL LOADS –** Select which truck's load data you would like to see on the map.
- **CLEAR MAP –** Clears all selected trucks from the map display.

LOADMAN SPOTLIGHT DATABASE

- **MAP DATA REPORT –** Displays all data collected for each truck on the selected day.
- **OPEN ROUTE SELECTOR –** Select which routes you would like to see displayed on the map.
- **SHOW REGIONS –** See MAP.

WIRING DIAGRAMS

WIRING DIAGRAMS

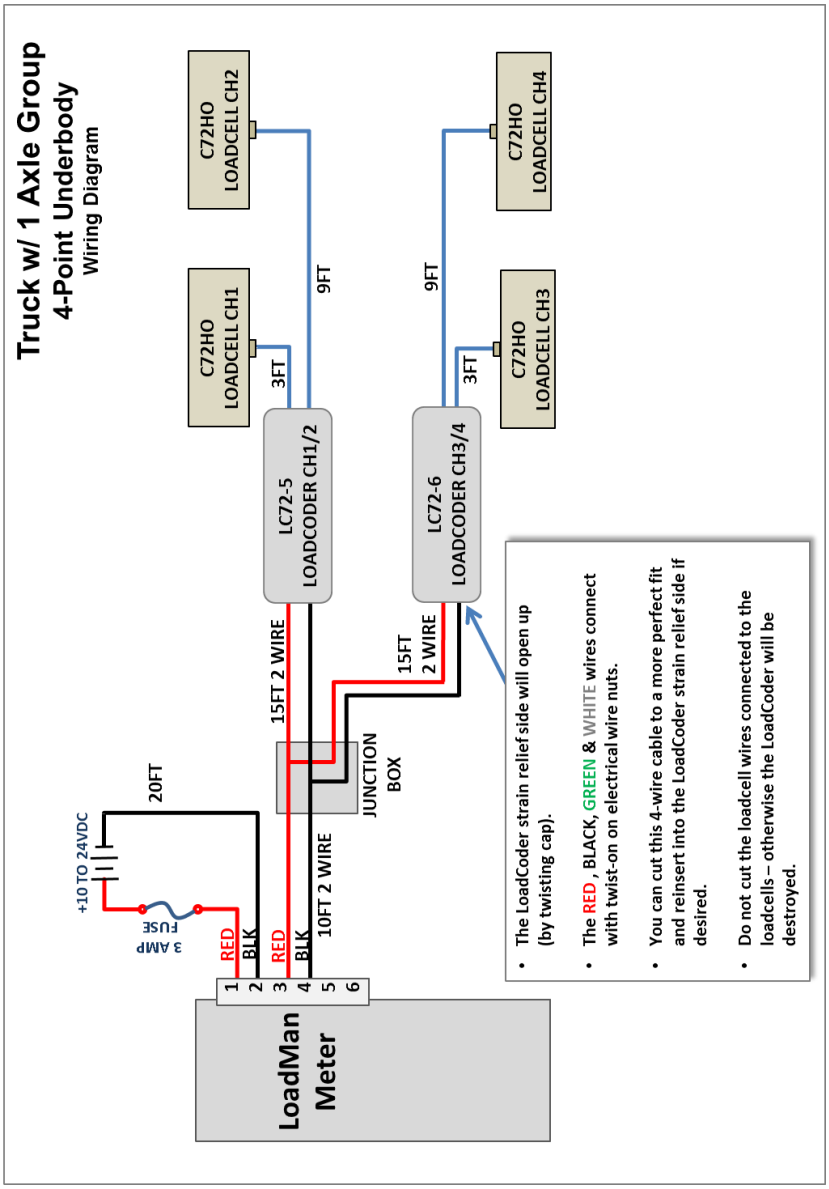


Figure 10. Wiring Diagram – Truck With 1 Axle Group
4 Point/Channel Underbody Weighing System

WIRING DIAGRAMS

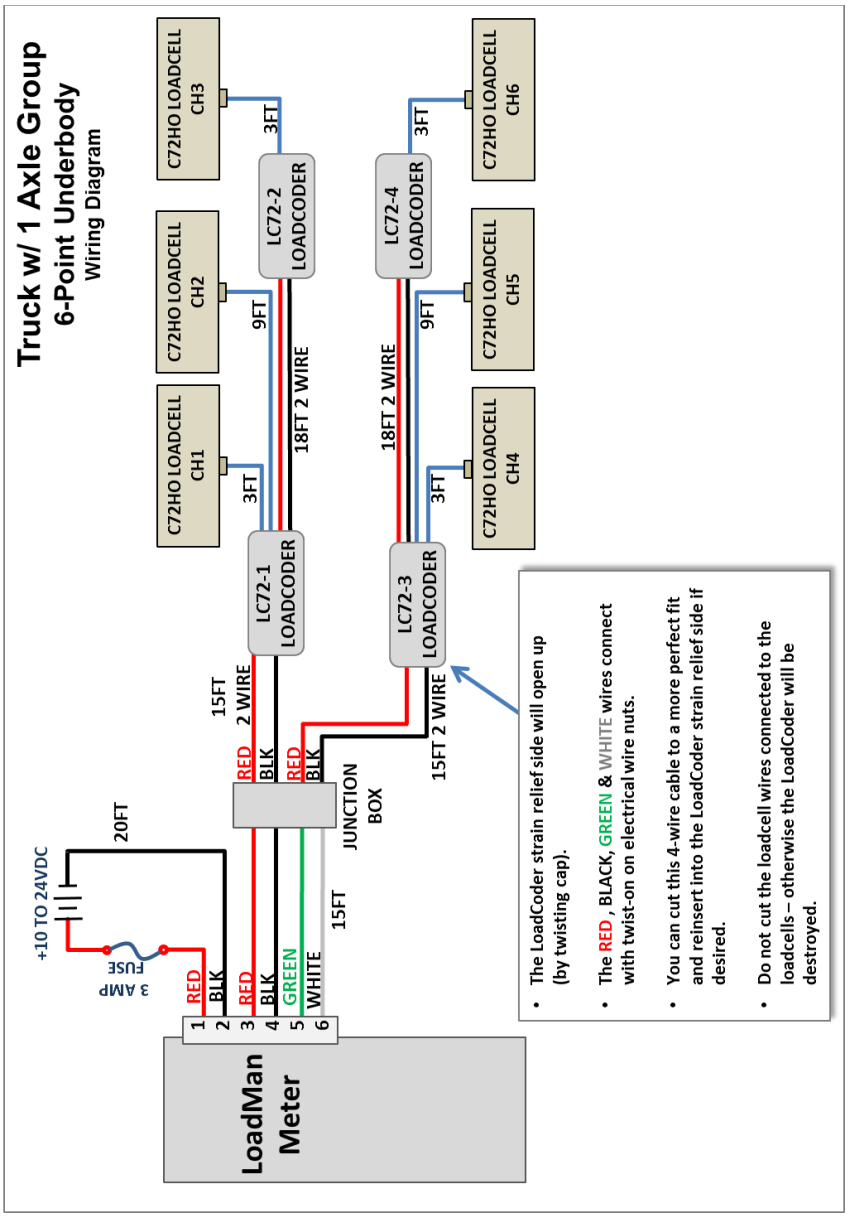


Figure 11. Wiring Diagram – Truck With 1 Axle Group
6 Point Underbody Weighing System

WIRING DIAGRAMS

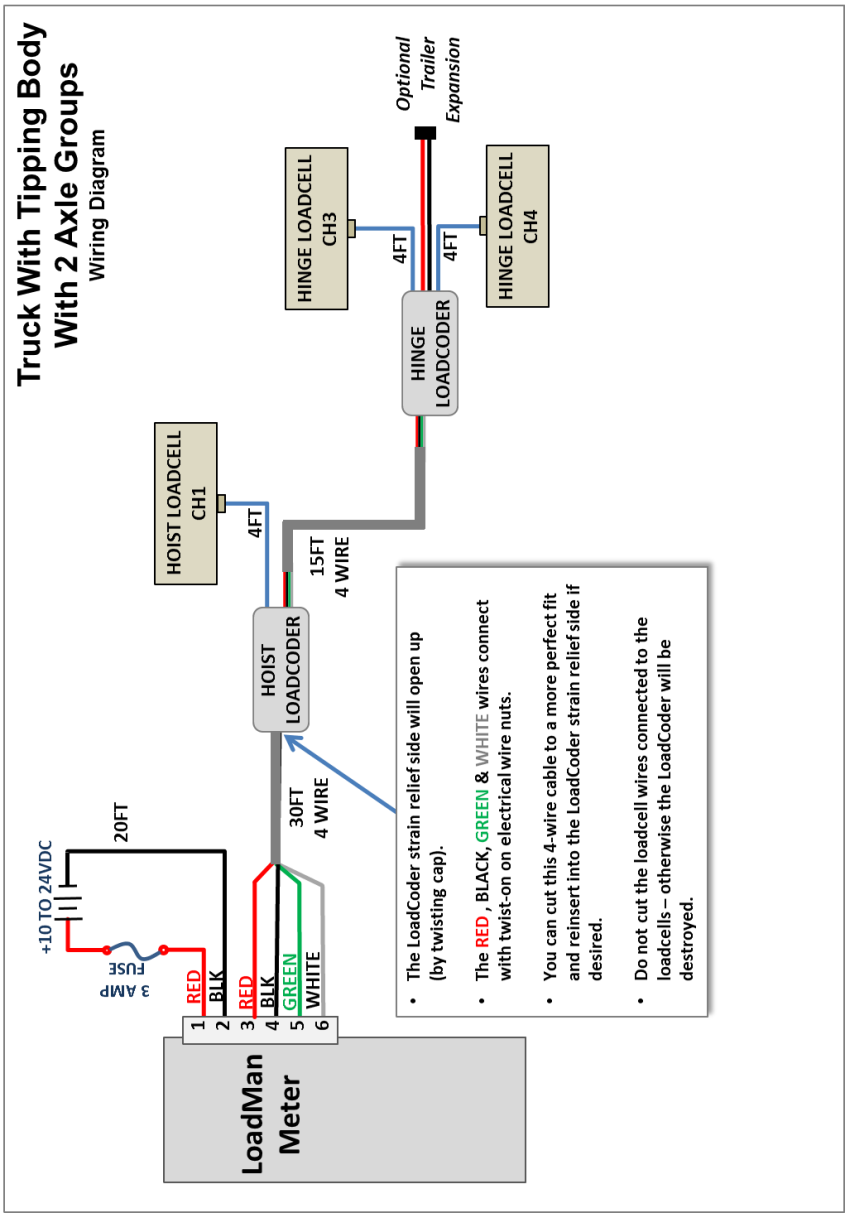


Figure 12. Wiring Diagram – Truck With Tipping Body
2-Axle Groups

WIRING DIAGRAMS

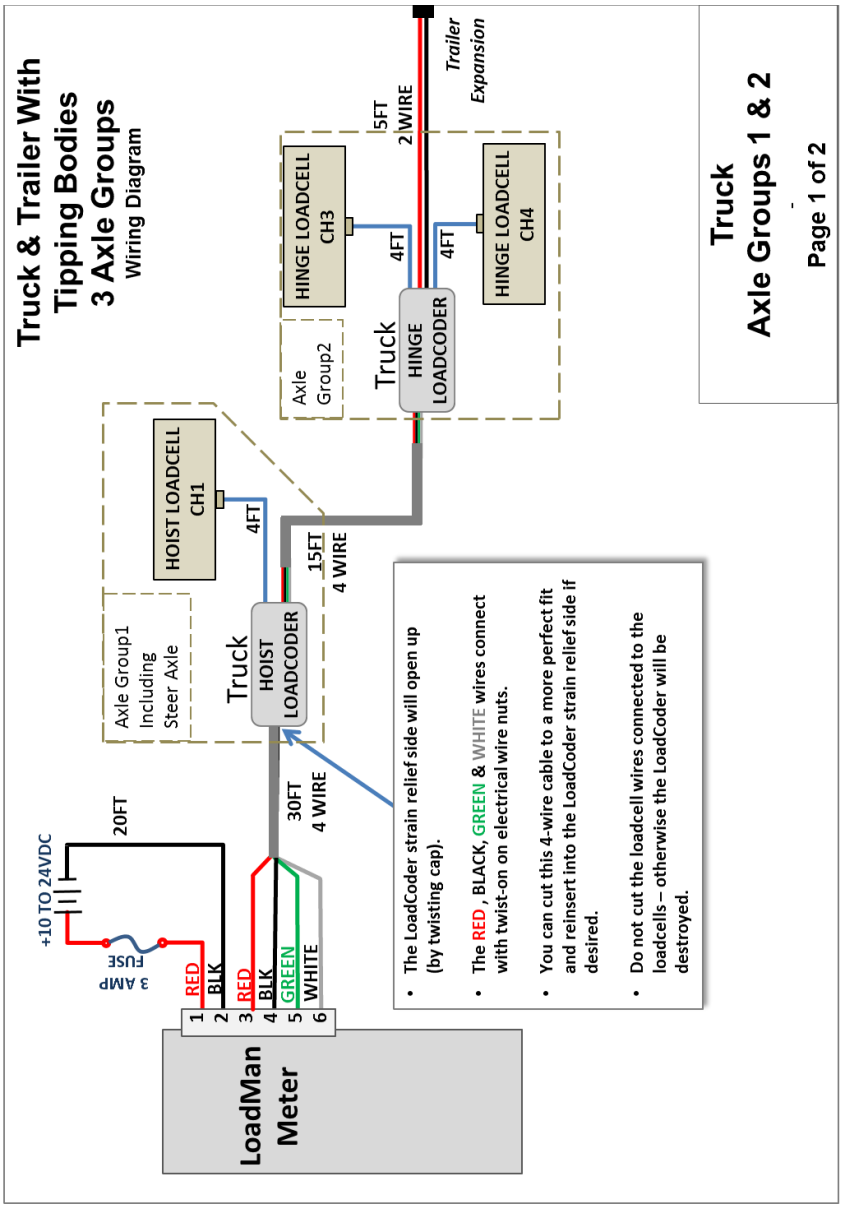


Figure 13. Truck & Trailer w/Tipping Bodies (TRUCK - Axle Groups 1 & 2)

WIRING DIAGRAMS

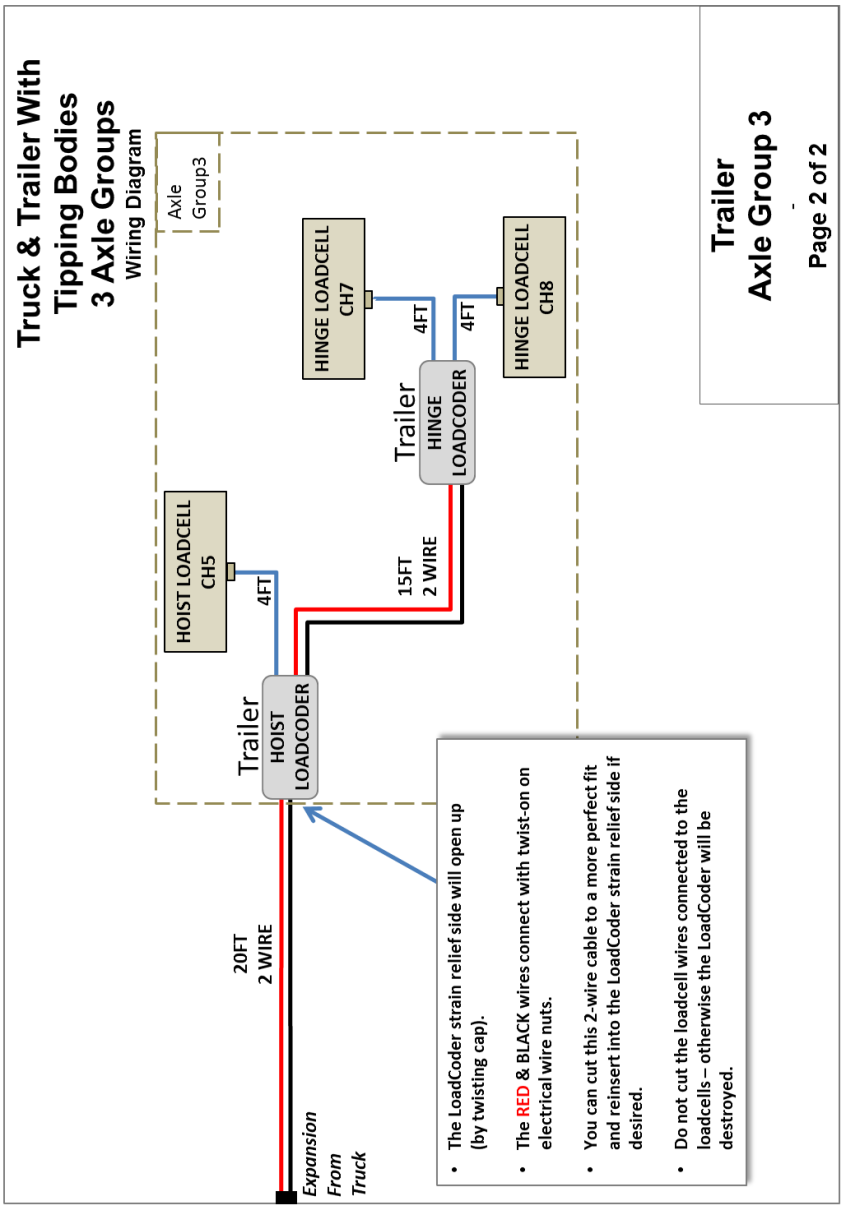


Figure 14. Truck & Trailer w/Tipping Bodies (TRAILER - Axle Group 3)

WIRING DIAGRAMS

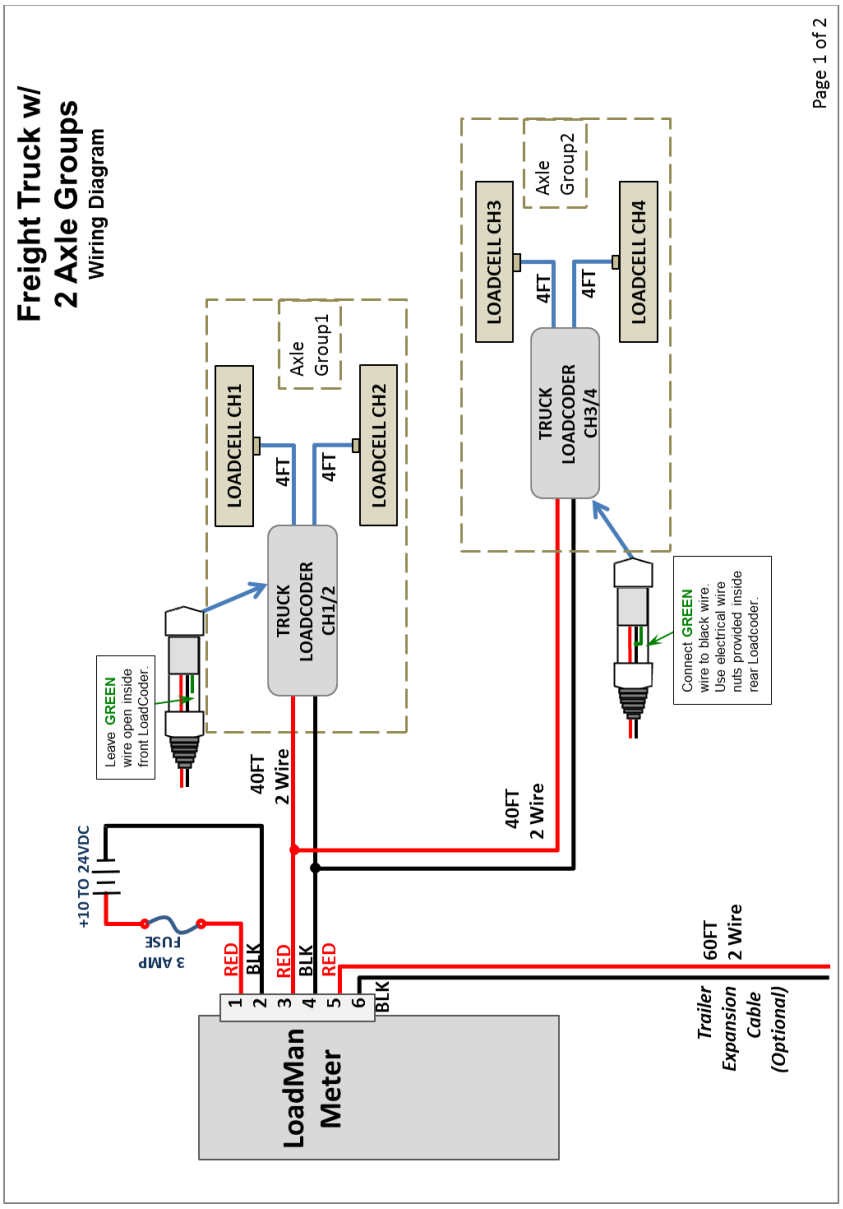


Figure 15. Freight Truck & Trailer w/ 4 Axle Groups (Axle Groups 1 & 2)

WIRING DIAGRAMS

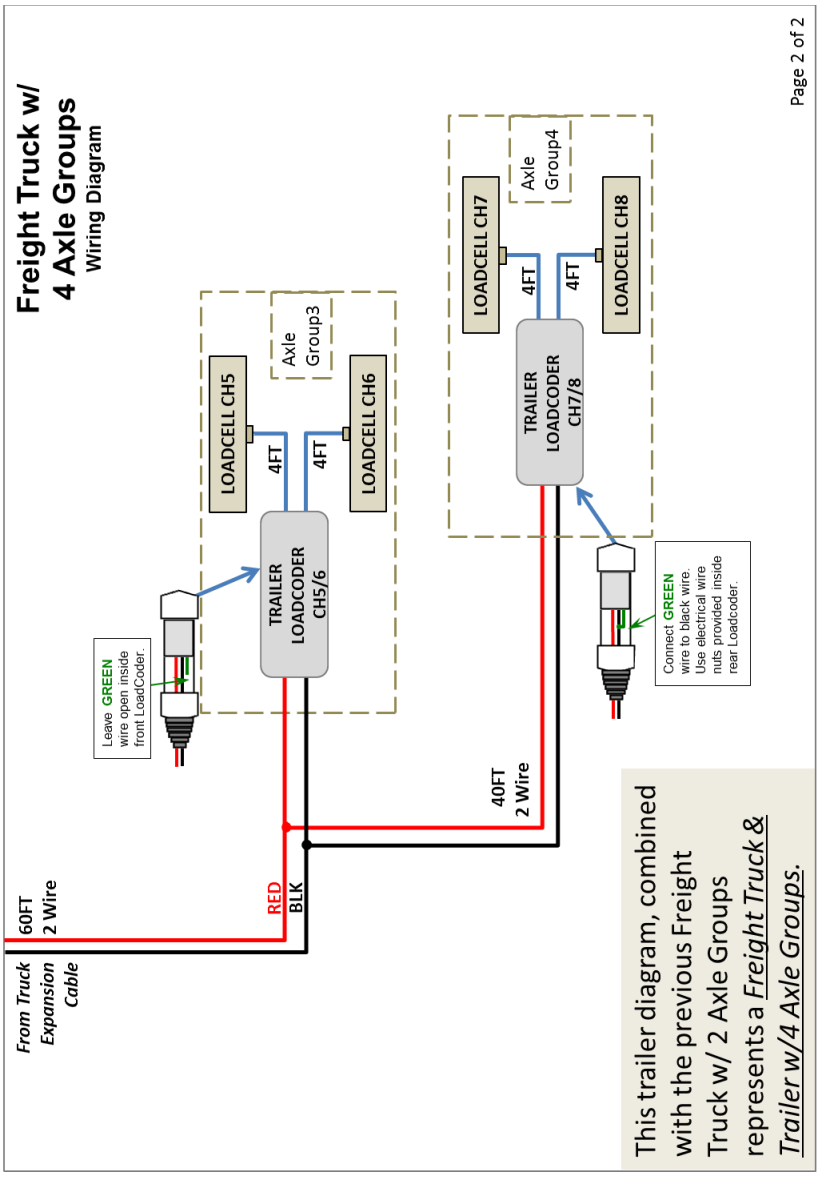


Figure 16. Freight Truck & Trailer w/4 Axle Groups (Axle Groups 3 & 4)

APPENDIX

APPENDIX

RFID MODE

The LoadCoder® Android app can be connected to an RFID reader and receive RFID tag information when picking up a load. This allows for the most accurate form of route stop identification that *LoadMan*® offers. RFID tags will need to be associated with route stops in *LoadMan*®'s cloud data management software. The setup of the RFID reader type can be selected in the **MISC** page. The RFID reader type options are;

- **Ethernet -** In this mode, the Android device will have to be connected via ethernet to the RFID reader. A small RFID icon will display in the top right corner of the normal operating mode if the connection is successful. If not, a circle with a line through it will display instead. Once connected, tags will be read during the weighing cycle. The RFID reader starts when the weighing system starts a new weighing cycle indicated by the READY TO WEIGH load state changing to the WEIGHING LOAD load state. The power of the RFID tag read can be set in **MISC** under SCALE SETTINGS.
- **Scales –** In this mode, the *LOADMAN* scale system will be connected to the RFID reader instead of to the Tablet, and tag data will come to the Android device from the *LoadMan*® LM500 black box. No ethernet connection is needed for this mode.

SCOUT ROUTE MODE

- In this mode, all buttons on the bottom of the screen in the normal operating mode will be replaced with a large "Learn Location" button. Tapping on it will send a "learn location record" to the cloud which tells the cloud-based backend software the GPS coordinates are of a selected stop or service on a route.
- A learn location record will have the selected route stop on the route list, along with the current GPS coordinates of the Android device.
- When the *LoadMan*® servers receive the learn location record, the GPS coordinates of the record will be assigned to the selected route stop. So, from then on, unless changed manually or with another learn location record, that stop will function with geo-route mode and geo-fence mode using the GPS coordinates learned for the selected stop or service.

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