BARGETENDER USER'S GUIDE (V1.1)

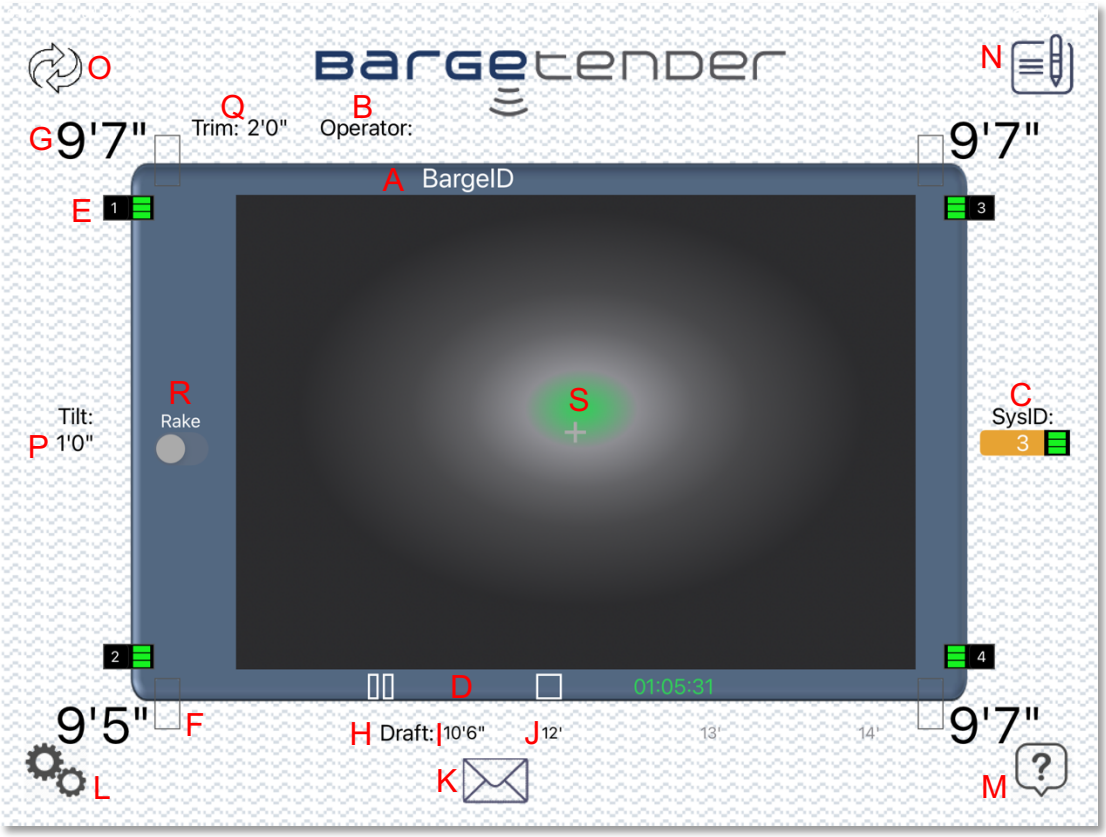
Caden Comisky

Bargetender, LLC

Bargetender Introduction

Thank you for your interest in the Bargetender Drafting System. With proper care and maintenance, your Bargetender Drafting System will give you years of reliable service. This user's guide will walk you through the pertinent aspects of the Bargetender application running on an iOS™ tablet; as well as the proper installation of the Bargetender sensors on the vessel.

Bargetender iOS App Instructions >> Main Page:



A: The barge ID can be entered by clicking on "BargeID" on the screen. This can be useful when documenting which barge has been loaded (helpful when using the email feature).

B: Tap your finger on the screen to the right of "Operator" if you'd like to document who is loading the barge (helpful when using the email feature).

C: The system ID is set by Bargetender during installation. The drafting sensors are set to a specific RF frequency that corresponds to the system ID. The system ID should not be changed by the operator.

D: There is a timer feature (start, pause, and play) available (helpful when using the email feature). To clear the timer, click on the stop button twice. Once the timer is cleared, the data from that barge load is copied to the notes (notes are located in the top right corner – labeled “N” in the image above).

E: Draft sensor #1 is populated in this position on the bow of the barge. The drafting sensors can be placed at different positions on the barge (8 total position options), but all of the sensors in the app should be placed in the same position as they are on the barge. There is also a battery level indicator. Once the battery level goes to yellow (two bars), you should have about a week left before they need to be charged. Once it turns red (one bar), you should charge it that day.

F: This is a spot where a sensor could be placed on the barge. To add a sensor, click on the empty spot, and type in the number of the sensor that is in that position. To remove a sensor from the screen altogether, click on the sensor, and type in number “9” and click “done” on the keypad. This will remove the sensor from the screen.

G: This is the draft of the barge in that specific corner. This could also represent the freeboard depending on which mode you are in.

H: You can change from Draft measurements to Freeboard measurements by clicking on the word “Draft.” This will put you in “FrBd” mode which is now giving you freeboard measurements.

I: This is your target draft. Set your target draft by tapping on the number to the right of “Draft” and using the keypad to make the entry.

J: You can set your hull depth by tapping the 12’, 13’, or 14’ number on the screen.

K: By clicking on this mail icon, you can email out the data of the current or fully loaded barge. Data such as Barge ID, start time, end time, initial drafts, final drafts, operator, dock ID, date, time, etc. can be captured for each barge by using the email feature. You will need Wi-Fi or an active cellular card in the iPad to use this feature.

L: This will take you to the settings page which will be described in more detail later in this manual.

M: For any questions you may have, you can find our email information here.

N: After each barge is loaded and the timer is stopped, the information from that specific load is copied over to the notes. Additional notes can be added in by using the keypad on the iPad (such as damages to the barge, or if there was an issue where you had to wait on trucks or trains for an extended period of time). These notes can also be included in the email if/when using that feature.

O: This will “flip” the barge from left to right, which is moving the bow and stern back and forth. The bow is facing to the left in the image above. The bow can be denoted by the “Rake” dial button. This is an important feature when you are using the email feature to document your final drafts.

P: Tilt is how much variance the loader has to work with in the draft from side to side. For instance, if the tilt is set to 1’ like in the image above, the loader can have 1’ of tilt from side to side before the level circle (green in the image above) is pegged against one side of the payload. In general, the larger the tilt and trim are set, the less sensitive the level circle is (less it moves around during loading).

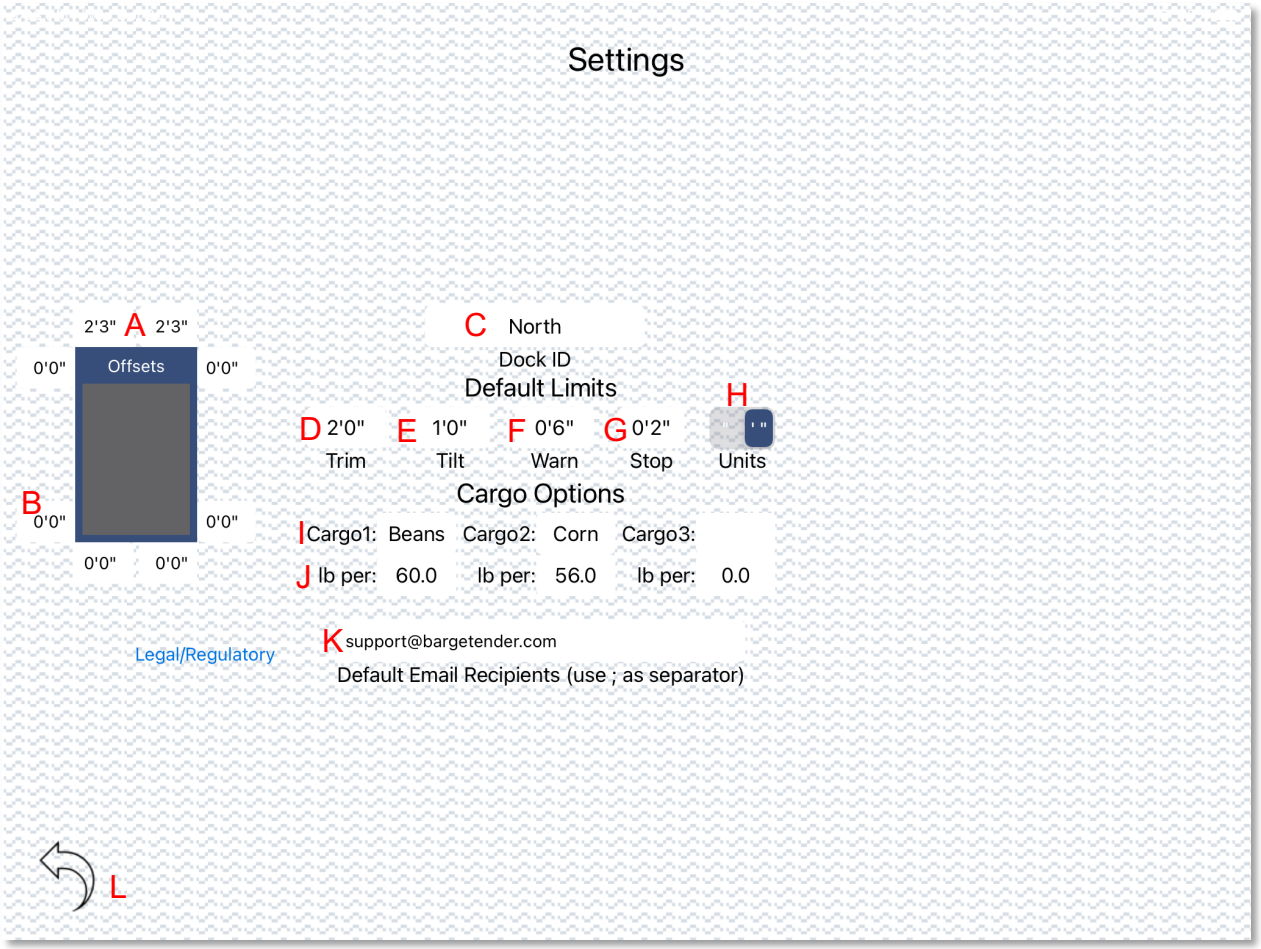
Q: Trim is how much variance the loader has to work with in the draft from front to back. For instance, if the tilt is set to 2’ like in the image above, the loader can have 2’ of tilt from front to back before the level circle (green in the image above) is pegged against one end of the payload. In general, the larger the tilt and trim are set, the less sensitive the level circle is (less it moves around during loading).

R: For a very specific loading scenario like the one in the image below, if there are two sensors located on the bow of a raked barge, then you can turn on the Rake dial by tapping your finger on the dial below the word “Rake.” This will automatically turn on the rake offset feature and account for the additional height that the rake adds to the draft on a barge. This is our way of compensating for the height that the rake angle adds in hopes of providing a much more accurate draft reading. On average, we suggest that you use 27 inches for the rate offset. You will know that the rake offset has been enabled when two diagonal white lines appear on the bow of the barge. The rake offset is set in the settings page which is described in more detail later in this document. To disable the rake offset, simply tap on the dial button once again.

S: The green circle represents how the barge is currently loaded and where the center mass resides. In the settings page (will be described in more detail later in this document), the user can set certain thresholds of when the circle turns from green to yellow and from yellow to red. This can provide guidance on your load status as you near your target/final drafts.

The next section will describe the settings page which can be accessed by clicking on the gears located in the bottom left-hand corner of the app.

Bargetender iOS app instructions >> Settings Page:



A: This is where you input your rake offset values for the scenario when two draft sensors are placed on the bow and the other two are placed on the stern. On average, we recommend that you use 27 inches for the rake offset, but this can be changed to any value.

B: We also give you the ability to input an offset for each draft position around the barge. If for some reason the draft sensors are consistently 1” or 2” different from your manual draft readings, you can apply an offset by typing in 1” into these boxes.

C: You can input your dock ID here. This feature is helpful when using the email feature.

D: Trim is how much variance the loader has to work with in the draft from front to back. For instance, if the tilt is set to 2' like in the image above, the loader can have 2' of tilt from front to back before the level circle (green in the image above) is pegged against one end of the payload. In general, the larger the tilt and trim are set, the less sensitive the level circle is (less it moves around during loading).

E: Tilt is how much variance the loader has to work with in the draft from side to side. For instance, if the tilt is set to 1' like in the image above, the loader can have 1' of tilt from side to side before the level circle (green in the image above) is pegged against one side of the payload. In general, the larger the tilt and trim are set, the less sensitive the level circle is (less it moves around during loading).

F: When a target draft is set in the main screen as described above, this window indicates when the level circle turns from green to yellow. Since it is set to 6" above, when your **average** draft gets within 6" of your target draft, the circle will turn from green to yellow.

G: When a target draft is set in the main screen as described above, this window indicates when the level circle turns from yellow to red. Since it is set to 2" above, when your **average** draft gets within 2" of your target draft, the circle will turn from yellow to red.

H: You can view the drafts in either inches or feet and inches. To change between the different options, just tap your finger on the desired unit just below the H on the screen. **If you are in ' " mode (feet and inches mode), to type in 1" using the keypad, you should type in "0.1." To type in 10" when in ' " mode, you should type in "0.10." To input 8'10", you should type in "8.10." However, if you are in " mode (inches mode) then you can just type in the number of total inches.**

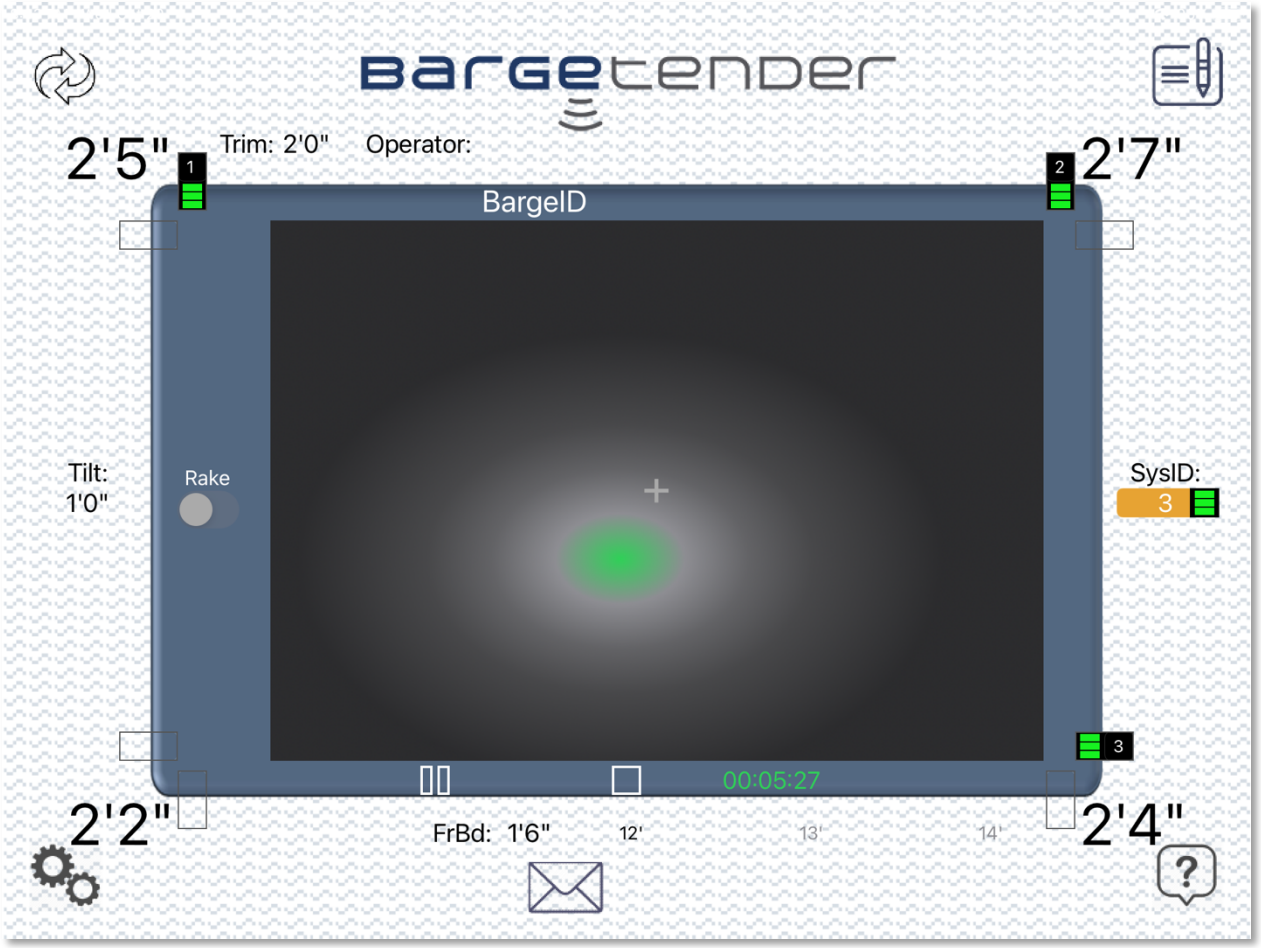
I: There is also an advanced feature within this app that will allow you to estimate the tonnage of your final load. You can set a target tonnage (i.e. 1700t) and at any point of the loading process, you will get a percentage of how much of that target you have loaded. You have up to three different types of "cargo" that can be entered in the settings page. You can see in this example that Cargo1 is Beans and Cargo2 is Corn.

J: This is a constant for how many pounds there are per bushel for the specific cargo listed above. For this example, there are 60 pounds of beans for each bushel loaded. This is useful when using the tonnage calculator that will be described later. This constant can be changed at any time by the user by clicking in the window and using the keypad.

K: This is where you enter the email addresses that you'd like to send the final draft readings to after each barge is loaded. Separate multiple emails addresses by a semicolon. This feature is helpful only when using the email feature.

L: Clicking the back arrow will take you back to the main page with the barge view.

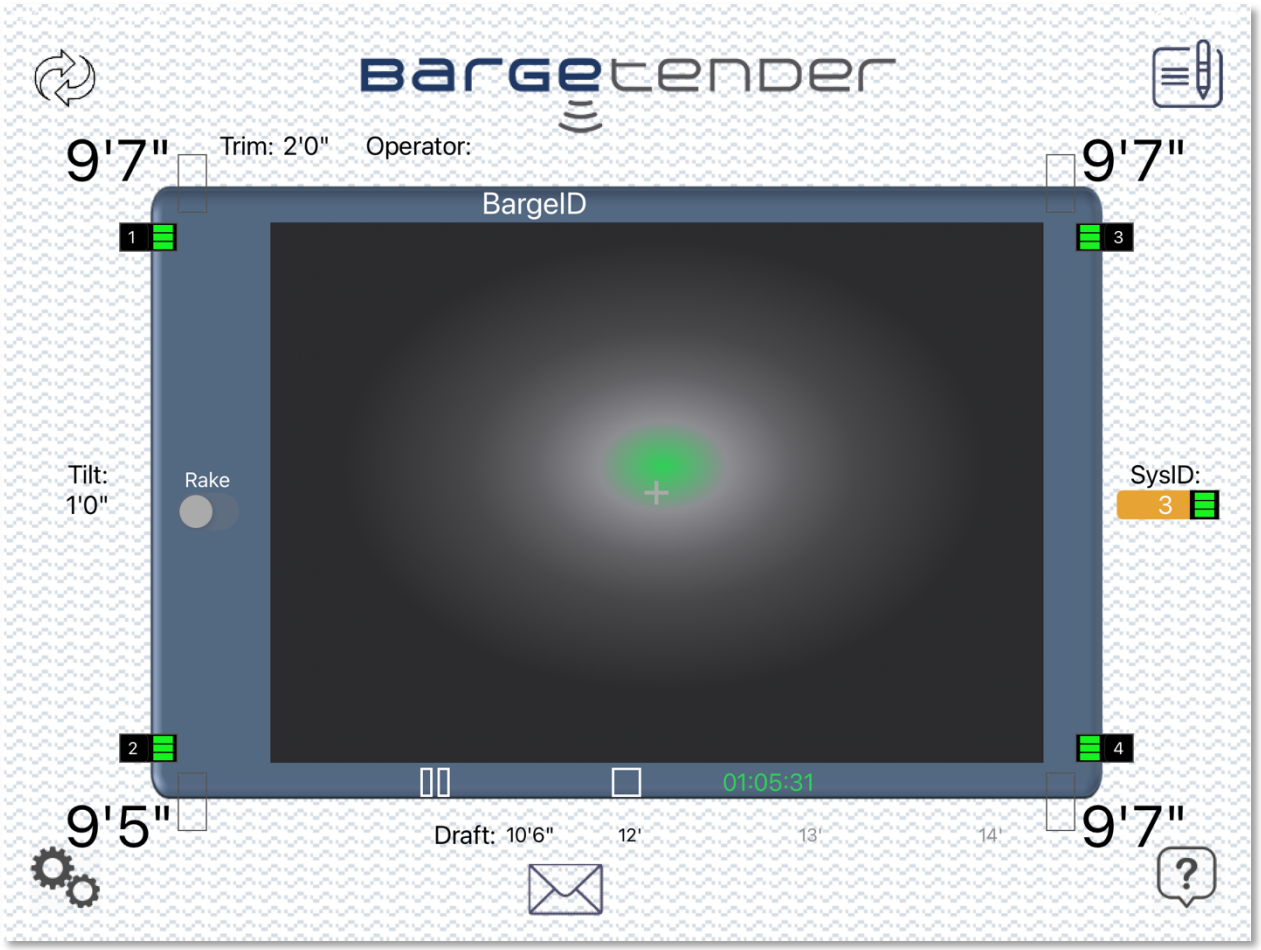
Bargetender iOS App Instructions >> Suggested Sensor Configurations:



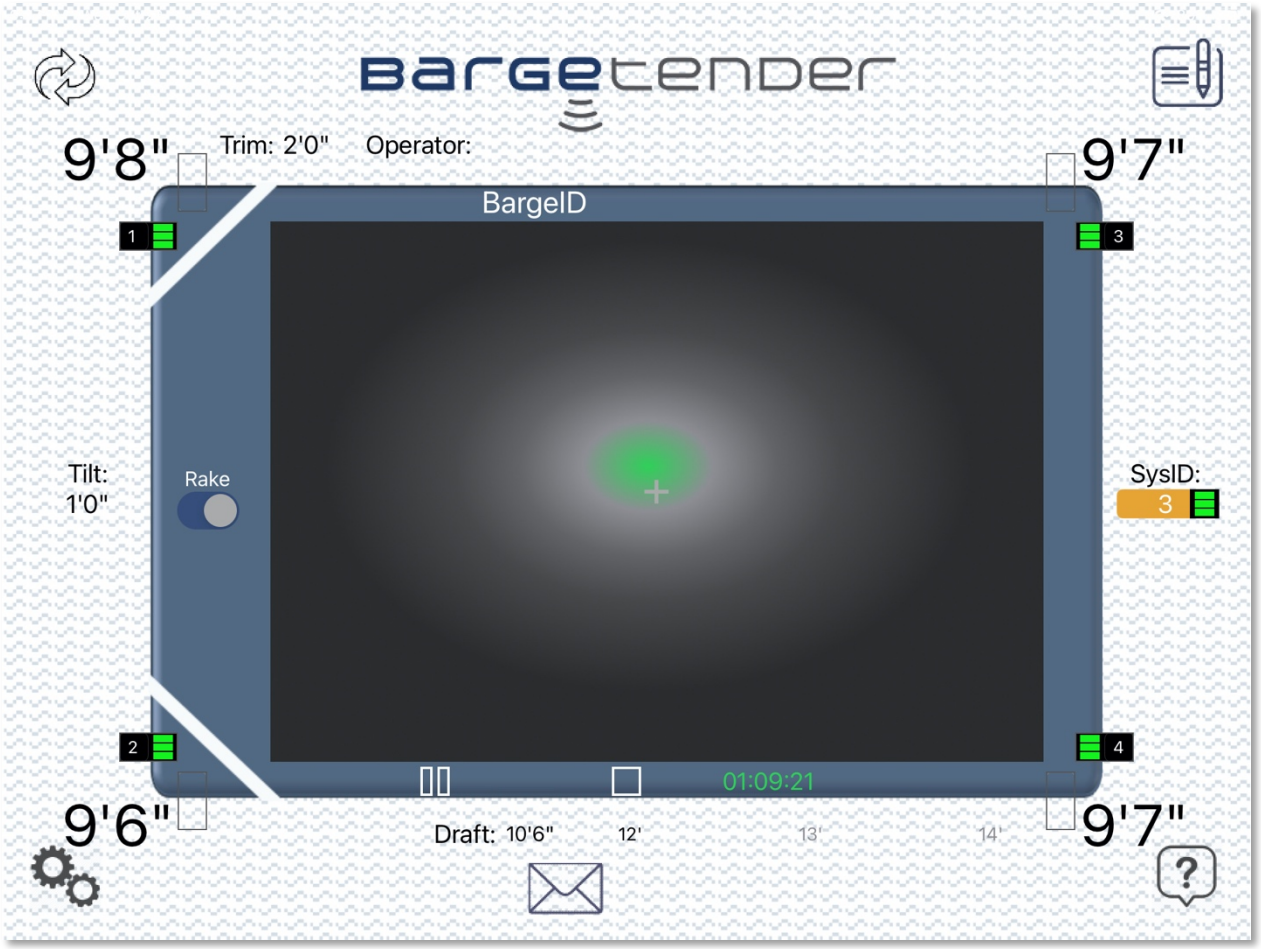
This configuration is the most versatile and can be used in almost every situation. Typically, two sensors are always placed over the “side” of the barge (1 and 2 in this scenario). Sensor 3 is placed off the downriver end of the barge (which is the stern in this scenario and is usually the stern for most loading docks). This configuration is desirable because you can get by with just 3 sensors and 1 sensor can be saved as a backup. The lower left corner (2’2” in this case) is projected as a calculation of the other three measurements. We have found this to be a very accurate configuration that works in most scenarios. You can see in this scenario that the app is in freeboard (FrBd) mode and not draft mode.

Note that in this configuration as well as any other configuration, the sensors can be interchanged with each other. For instance, sensors 3 and 4 could just as well

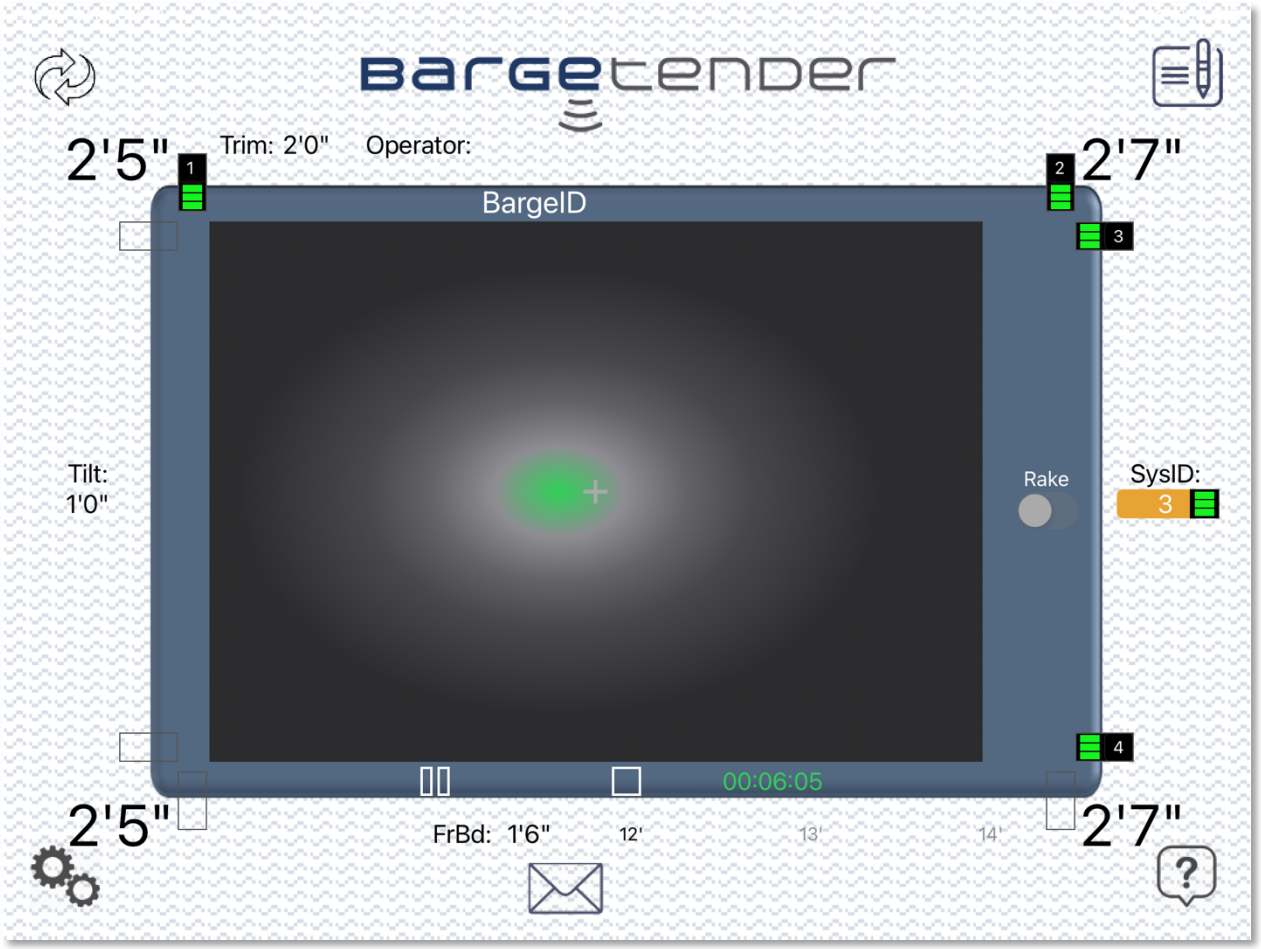
be placed over the "side" of the barge, and sensor 1 can be placed off the stern. The only requirement is that the loading operator matches the app with where the sensors are physically placed on the barge.



This configuration is helpful when you have full access to both the bow and the stern without any interference from other barges, cables, ropes, debris, etc. If you are loading a box barge in this configuration, then you won't need to bother with the rake offset feature. However, if you have a raked barge, then you will need to click the "Rake" dial (please see the image below):



Now that the “Rake” dial has been turned on, the rake offset that was set in the Settings page has now been applied to this screen. And you should now have much more accurate draft readings.



If you don't want to ever bother with the "Rake" dial and a rake offset in general, then this is a workaround (explained here). This is an interesting configuration that will allow you avoid ever needing to use the rake offset feature. If you need to place sensors on the rake (bow) because the stern is obstructed by another barge, cables, ropes, debris, etc., then you can make this "L" pattern with the 4 sensors. We will calculate the angle/tilt of the barge by using a combination of drafting sensors to project all 4 drafts around the barge. And in this case, you will no longer need to input any rake offset. But to achieve this feature, you will need to create the "L" pattern as laid out above.

Bargetender >> Sensor Placement:

See the images below for guidance on how to place the sensor on the deck of the barge. The black arrow is a general indicator of how far to hang the sensor over the deck. In the bottom right picture, you can see how to use the D ring on the back of the sensor to help lift the sensor off the deck of the barge. The sensors can be placed in any of the eight positions on the deck of the barge as indicated in the iOS app explained earlier in this document. The only requirement is that the loading operator matches the placement of the sensors in the app to where they are physically located on the barge. In general, if the sensors are placed along the long side of the barge, we recommend placing the sensors within a few feet of the draft numbers/markings. If the sensors are placed over the bow or stern, we recommend moving them in from the side 5-10 feet to avoid cables or ropes.

Bargetender >> Legal / Regulatory:

1. Product Overview. Buyer acknowledges that the Automated Drafting System (“ADS”) operates as a "Read Only" monitoring system. The ADS does not control nor does it have any ability to control Buyer’s auxiliary equipment. The ADS further cannot prevent any errors caused by the method or manner in which Buyer inserts material into its vessel. Accordingly, Buyer expressly acknowledges that Bargetender cannot be held responsible for the overfilling of a barge and/or any damage caused by Buyer’s auxiliary equipment or any errors associated with the method or manner in which Buyer inserts material into its vessel.

2. Limitation of Remedy and Liability. BUYER EXPRESSLY AGREES THAT BARGETENDER WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE UNDER ANY THEORY OF RECOVERY, WHETHER BASED IN CONTRACT, IN TORT (INCLUDING, BUT NOT LIMITED TO, NEGLIGENCE AND STRICT LIABILITY) FOR: (1) ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE LOSS OR DAMAGE OR PUNTIIVE DAMAGES WHATSOEVER; (2) ANY DAMAGE TO ANY EQUIPMENT OR PERSONNEL; (3) ANY LOSS OF BUYER’S MATERIAL; (4) ANY ENVIRONMENTAL IMPACT AND COST RESULTING FROM ANY SYSTEM OR OPERATIONAL ERROR; AND/OR (5) ANY LOSS OF BUYER’S PROFITS OR REVENUE, INCLUDUING ANY LOSS OF BUYER’S ANTICIPATED PROFITS OR REVENUES. BUYER AGREES THAT UNDER NO CIRCUMSTANCES SHALL THE TOTAL AGGREGATE LIABILITY OF BARGETENDER, UNDER ANY THEORY OF RECOVERY , EXCEED THE AMOUNT RECEIVED BY BARGETENDER FROM BUYER UNDER THE APPLICABLE SALE.
FOR THE AVOIDANCE OF DOUBT, BUYER EXPRESSLY ACKNOWLEDGES THAT BARGETENDER SHALL NOT BE LIABLE FOR ANY DAMAGES OR INJURIES SUSTAINED BY BUYER, BUYER’S EMPLOYEES OR AGENTS, OR ANY THIRD PARTIES, DIRECTLY OR INDIRECTLY, FROM THE USE OF THE GOODS AND SERVICES PROVIDED BY BARGETENDER TO BUYER; RATHER, BUYER SHALL BE SOLELY RESPONSIBLE FOR ALL SUCH DAMAGES, LOSSES OR INJURIES.

3. Governing Law. These terms and conditions are formed and shall be construed, performed, and enforced under the laws of the State of Missouri.

4. iOS™ is a registered trademark of the Apple Corporation located in Cupertino, CA

5. FCC Statement(s).
   a) FCC ID: 2A26D-159184. This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
   b) 47 CFR 15.21: Information to the user. This user’s manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by Bargetender, LLC could void the user's authority to operate the equipment.