RailBoss®

Custom 920i® Program

Operation Guide

RICE LAKE
WEIGHING SYSTEMS

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PN 119890 Rev D

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Rice Lake continually offers web-based video training on a growing selection of product-related topics at no cost. Visit ***www.ricelake.com/webinars***

1.0 Introduction

A 920i with RailBoss program can interface to one or more RailBoss scales and be used to weigh rail cars in double-draft and full-draft.

Manuals and additional resources are available from the Rice Lake Weighing Systems website at www.ricelake.com

Warranty information can be found on the website at www.ricelake.com/warranties

1.1 Overview

The RailBoss scale is available in double-draft and full-draft modes.

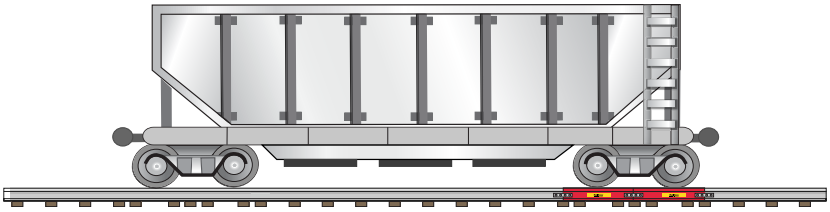

Figure 1-1. Double-Draft Installation

Double-draft mode weighs one set of rail trucks (all four wheels) at a time. This installation allows rail cars of different lengths to be weighed. Each end of the rail car is weighed separately and the weights are added together.

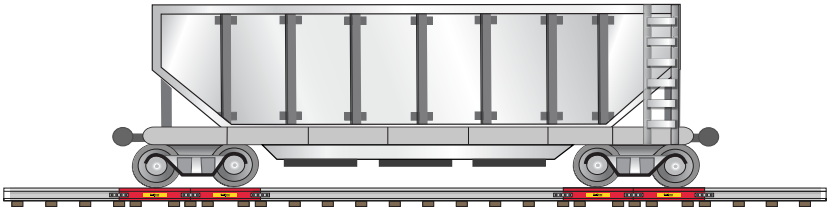

Figure 1-2. Full-Draft Installation

Full-draft weighments require a dual-channel A/D input card installed in a 920i. In this application, the RailBoss rails are located so that both ends of a rail car can be weighed simultaneously.

Note

Actual installation of rail sections, including rail cutting, tie positioning, and rail installation is recommended to be performed by an authorized rail contractor.

1.2 FCC Statement

The 920i complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Radio certificate number:

- US: R68WIPORTG
- Canada: 3867A-WIPORTG

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1.3 Safety

Safety Signal Definitions:

DANGER — *Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.*

WARNING — *Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.*

CAUTION — *Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.*

IMPORTANT — *Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.*

General Safety

Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.

WARNING

Failure to heed could result in serious injury or death.

Do not allow minors (children) or inexperienced persons to operate this unit.

Do not operate without all shields and guards in place.

Do not use for purposes other then weight taking.

Do not place fingers into slots or possible pinch points.

Do not use any load bearing component that is worn beyond 5% of the original dimension.

Do not use this product if any of the components are cracked.

Do not exceed the rated load limit of the unit.

Do not make alterations or modifications to the unit.

Do not remove or obscure warning labels.

Keep hands, feet and loose clothing away from moving parts.

2.0 Operation

2.1 Double-Draft Mode

Double-draft mode weighs one set of rail trucks (four wheels) at a time.

2.1.1 Double-Draft Softkey Functions

The scale softkeys displayed depend on the number of scales configured in the 920i file.

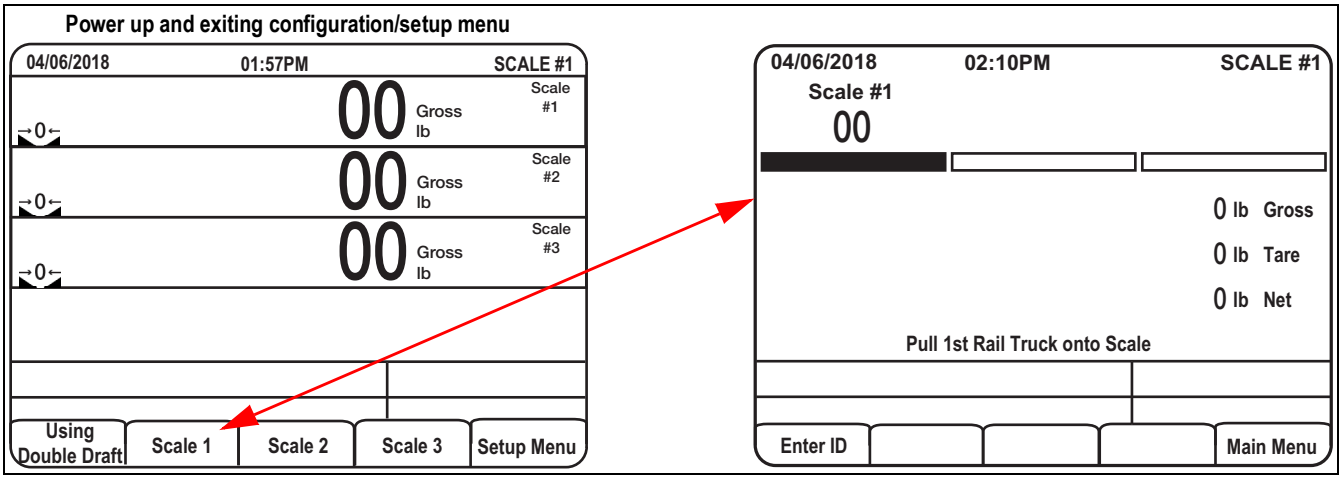

Figure 2-1. 920i Double-Draft Menu

Softkey	Function
Using double-draft	Toggles between double-draft and full-draft mode
Scale 1-3	Display weight of scale; number of softkeys is dependent on number of scales (up to 3) connected to system
Setup Menu	Enter setup menu; see Section 3.3 on page 8

Table 2-1. Double-Draft Softkey Functions

2.1.2 Double-Draft Rail Car Processing

Double-draft weighments using one four-rail section can be used with either a single- or dual-channel A/D input card installed in the 920i.

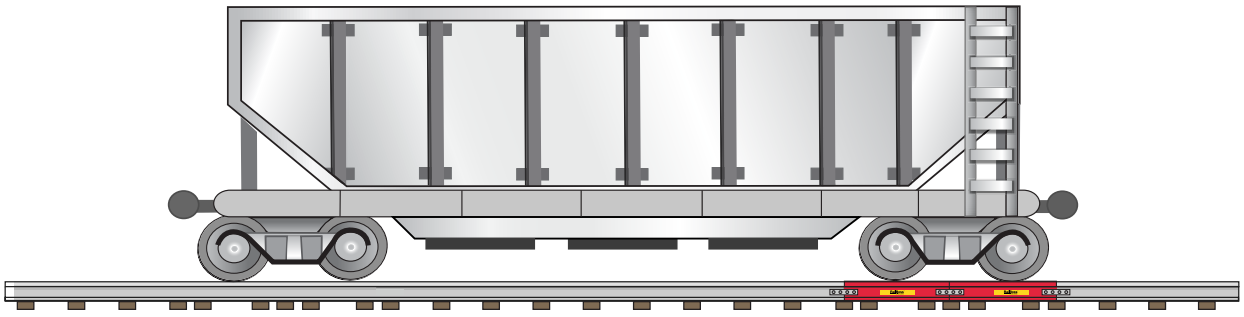

Figure 2-2. Double-Draft RailBoss Setup

1. Ensure ***Using Double Draft*** is the first softkey displayed. See Figure 2-1.
2. Position the first rail truck (four wheels) on a scale (Scale 1, Scale 2 or Scale 3).

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3. Press the corresponding scale's softkey. This scale remains active until the ***Main Menu*** softkey is pressed. Figure 2-3 displays.

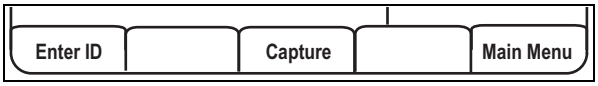

Figure 2-3. Operation Softkeys

Note ***The* Capture *softkey only appears if the weight is above the threshold weight on the selected scale.***

4. Press the **Enter ID** softkey to enter a rail car ID. ***Enter Rail Car ID*** displays.
5. Enter the rail car ID using the numeric keypad or press to use an alphanumeric keyboard.
6. Press .

Note ***The ID field can be optional or mandatory based on the ID Required setting in the Setup Menu. If optional, it can be entered any time before the second rail is processed. See Section 3.1 on page 7.***

7. Press to capture the tare weight of Rail Truck #1. The tare weight displays.
   To enter a known tare value:
   - Use the keypad to enter value
   - Press

Note ***Tare field is optional and can be entered any time before the rail truck is processed.***

8. Press the ***Capture*** softkey to weigh the first rail truck. The weight displays next to Rail Truck #1. The system displays ***1st Rail Truck Captured - Pull Next onto Scale***.
9. Pull the second rail truck onto the scale.

Note ***The second set of trucks can be weighed on another scale by pressing the Main Menu softkey.***

10. If a tare was captured for Rail Truck #1, repeat Step 7 to capture the tare weight of Rail Truck #2.
11. Press the **Capture** softkey to weigh the second rail truck. The weight displays next to Rail Truck #2.
12. System does the following:
    - Prints a double-draft weigh ticket; the **Reprint** softkey is displayed in case an error occurs during printing
    - Stores the information in the transaction database; if the transaction database is full, the system automatically deletes the oldest 25% of existing data
    - Increments the ticket number

    Once the weight drops below the threshold weight:
    - The rail car ID, if entered, is cleared
    - The tare weights, if used, are cleared
    - ***Pull 1st Rail Truck onto Scale*** displays

Note ***To abort the ticket, press the Main Menu softkey.***

2.2 Full-Draft Mode

Full-draft weighments require a dual-channel A/D input card installed in the 920i and two four-rail sections of the RailBoss Scale. A single scale cannot process full-draft.

2.2.1 Full-Draft Softkey Functions

The scale softkeys are dependent on how many scales are configured in the 920i file.

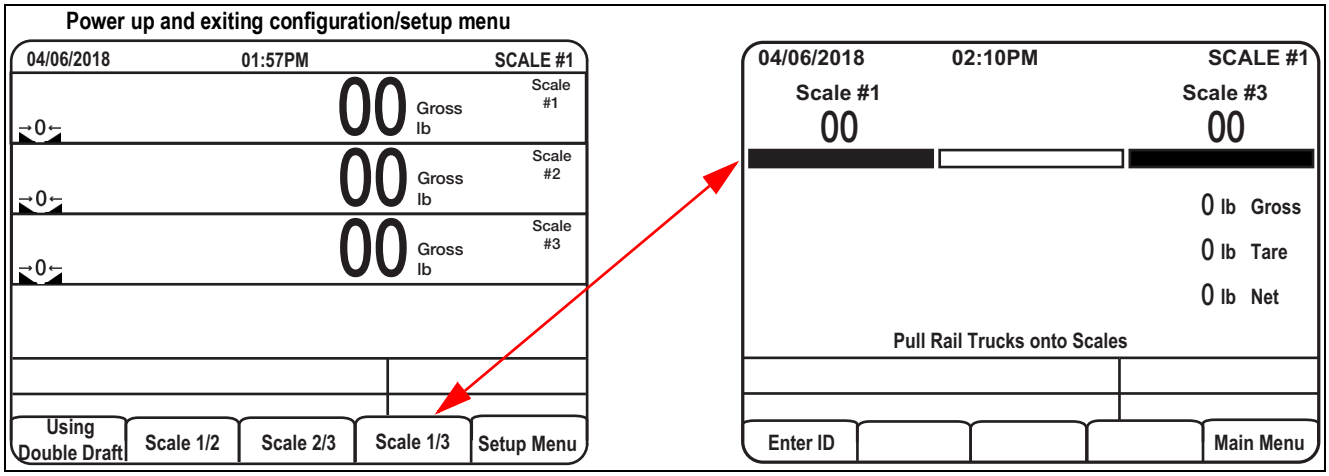

Figure 2-4. 920i Main Screen Using Full-draft

Main Screen Softkey	Function
Using double-draft	Toggles between double-draft and full-draft mode
Scale 1/2, 2/3, 1/3	Displays weight of selected scales
Setup Menu	Enters the setup menu; see Section 3.3 on page 8.

Table 2-2. Full-Draft Mode Softkey Functions

2.2.2 Full-Draft Rail Car Processing

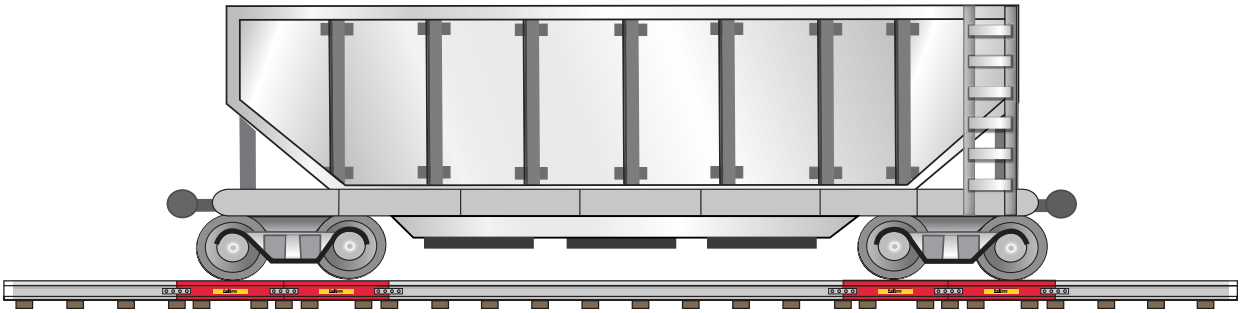

Figure 2-5. Full-Draft RailBoss Setup

1. Ensure the first softkey on the 920i is displayed as ***Using Full Draft*** (see Figure 2-4). If not press the ***Using Double Draft*** softkey to change to full-draft mode.
2. Position the rail car so both trucks are on a RailBoss scale. Full-draft mode can be performed in any of the following configurations:
   - One truck completely on scale 1, the other truck completely on scale 2 (press **Scale 1/2**)
   - One truck completely on scale 2, the other truck completely on scale 3 (press **Scale 2/3**)
   - One truck completely on scale 1, the other truck completely on scale 3 (press **Scale 1/3**)

Note ***If the rail trucks do not match up with the scale sections, it is necessary to perform a double-draft weighment. See Section 2.1 on page 3.***

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3. Select the appropriate scale combination softkey. This scale combination remains active until the ***Main Menu*** softkey is pressed. The live weight and the softkeys in Figure 2-6 are displayed.

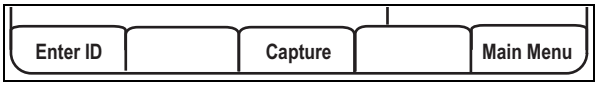

Figure 2-6. Operation Softkeys

Note ***The Capture softkey will only appear if the weight is above the threshold weight on the selected scales.***

4. Press the ***Enter ID*** softkey to enter a rail car ID, if desired. ***Enter Rail Car ID*** displays.
5. Enter the rail car ID using the numeric keypad or press to use an alphanumeric keyboard.
6. Press .

Note ***This ID field can be optional or mandatory based on the ID Required setting in the Setup Menu. If optional, it can be entered any time before the second rail is processed. See Section 3.1 on page 8.***

7. Press to capture the tare weight of Rail Truck #1. The tare weight displays.

   To enter a known tare value:

   - Use the keypad to enter value
   - Press

Note ***This field is optional and can be entered any time before the rail truck is processed.***

8. Press the ***Capture*** softkey. If an ID is required, but not yet entered, the system will prompt ***Enter Rail Car ID***. See Step 4.
9. System does the following:
   - Prints a full-draft weigh ticket; **Reprint** softkey displays in case an error occurs during printing
   - Stores the information in the transaction database; if the transaction database is full, the system automatically deletes the oldest 25% of existing data
   - Increments the ticket number

   Once the weight drops below the threshold weight:
   - The rail car ID, if entered, is cleared
   - The tare weights, if used, are cleared
   - The ***Reprint*** softkey is removed
   - The system displays ***Pull Rail Trucks onto Scales***

3.0 Serial Communications - Tickets, PC

3.1 Weigh Ticket

A technician can modify the auxiliary print format #1 through the 920i front panel or by using iRev.

```
Double Draft or Full Draft
Ticket Number: 2
Rail Car ID: 21544

Rail Truck #1:  27000 lb
Rail Truck #2:  24150 lb

Gross:  51150 lb
Tare:   10000 lb
Net:    41150 lb

10:59AM 07/09/2014
```

Figure 3-1. Weigh Ticket Example

3.2 Modifying the Database Tables

Interchange, a PC program, can be used to upload, export and clear database tables. The exported file may be saved as a delimited text file, an Excel spreadsheet, or an XML document. iRev is another option to do database maintenance.

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3.3 Application Setup and Configuration

The **Setup Menu** softkey is password protected and offers access to the display program name and version.

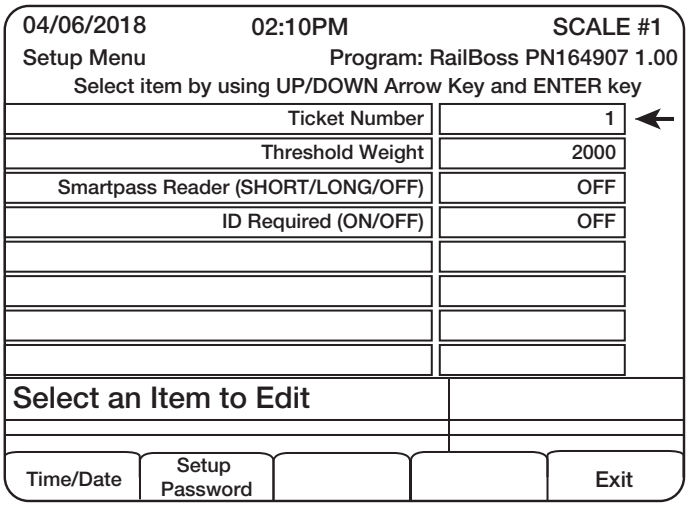

Figure 3-2. Setup Menu

Parameter	Default	Softkey	Description
System Time and Date	Current	Time/Date	Time and date of 920i
System Password	""	Setup Password	Set a password that is required to enter Setup menu; set to nothing for no password
Ticket Number	1	-	Modify/reset the incrementing ticket number
Threshold Weight	2000 lb	-	Minimum amount of weight needed to recognize a rail is on the scale
Smart Pass Reader	OFF	-	Enable or disable the Smartpass reader option on Port 1; Settings: SHORT, LONG, OFF Short and long refer to the types of cards used
ID Required	OFF	-	Enable or disable the requirement of an ID; if enabled, the system requires an ID

Table 3-1. Setup Menu

3.4 Transactions Database Tables

Field	Type	Description
Ticket	Integer	Sequential ticket number
ID	String	Unique alphanumeric rail car id
Rail1Wgt	Real	Rail Truck 1 Weight
Rail2Wgt	Real	Rail Truck 2 Weight
Rail3Wgt	Real	Rail Truck 3 Weight
GrossWgt	Real	Weight of rail car and product
TareWgt	Real	Empty weight of rail car
NetWgt	Real	Weight of product only
Mode	String	DD – Double-Draft & FD –Full-Draft
TD	Date/Time	Time and Date of transaction

Table 3-2. Transactions (TRANS) Database Table – 800 Records

3.5 Hardware Setup

Slot	Type
1	Dual Channel A/D Card
2	Single Channel A/D Card

Table 3-3. Option Card Locations

Slot	Bit	Type	Function
0	1-6	Off	Currently Not Used

Table 3-4. Digital I/O

Port	Type	Description	Setup
1	PROGIN	Optional Smartpass	9600,8,N,2
2	CMD/KEYBRD	iRite Downloads (Optional P/S2 Keyboard)	115200,8,N,2
3	CMD	TM-U220 Printer	9600,8,N,2
4	CMD	Currently Not Used	9600,8,N,2

Table 3-5. Serial Port

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