OPERATING MANUAL

Factory Mutual approved Weighing Systems
for hazardous (explosive) area application.
Repair is expressly limited to factory trained
service personnel.

Fairbanks® Scales

Remote Display
Model H90-3052DR

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DISCLAIMER

Every effort has been made to provide complete and accurate information in this manual. However, although this manual may include a specifically identified warranty notice for the product, Fairbanks Scales makes no representations or warranties with respect to the contents of this manual, and reserves the right to make changes to this manual without notice when and as improvements are made to the product.

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SECTION 1: INTRODUCTION

1.1 Introduction

The following sections explain the specifications, operating controls, indicators, and operating instructions for the Fairbanks Model H90-3052DR. Programming of the instrument at the time of installation is necessary. These instructions assume that all of the equipment is properly installed and calibrated.

Read and understand this manual before power is applied to the instrument. A thorough understanding of all capabilities and procedures is essential for correct installation and operation of this equipment.

A. Modification

Absolutely no physical, electrical, or program modifications are to be made to this equipment. Electrical connections, other than those specified, may not be made and no physical alterations (mounting holes, etc.) are allowed. Alterations or modifications to the instrument may void any and all warranties.

B. Customer, Operator Responsibilities

It is the customer, operators' responsibility to maintain the equipment in good condition and operating order. This includes protecting the equipment from accidental or malicious damage. Failure to do some may void any and all warranties.

Other than the procedures authorized in this manual, no service, repair, or adjustment to the equipment may be made or performed by untrained personnel.

1.2 Instrument Location

The Instrument should be positioned away from direct sunlight which would make the display difficult to read.

FIGURE 2-1: REMOTE DISPLAY

The H90-3052DR Remote Display will ONLY work with H90-3051 ULPI Instruments with specially altered software. The altered H90-3051 Instruments are only available through special inquiry.

SECTION 2: DESCRIPTION

2.1 Introduction

The H90-3052DR Remote Display is designed for use with the H90-3051 ULPI indicator. The Remote display consists of an intrinsically safe display and a keypad. The remote display is connected to the H90-3051 indicator by a fiber optic output, through Channel B on the H90-3051. The two units communicate, transmit and receive, through the fiber optic cable accessory 5806.

The power source options for the remote display are battery accessory 352 or power supply accessory 5816 (see Appendix I).

Model H90-3052DR is approved by Factory Mutual for hazardous (explosive) area application.

2.2 Specifications

1. **Model Number:**
   H90-3052DR

2. **Units:**
   lb, kg

3. **Display:**
   High visibility, 6 digit liquid crystal display, with 0.8 inch digits

4. **Temperature Range:**
   Operating: – 10° to 40° C
   Storage: – 20° to 60° C

5. **Controls:**
   18 key keypad

6. **Battery Life:**
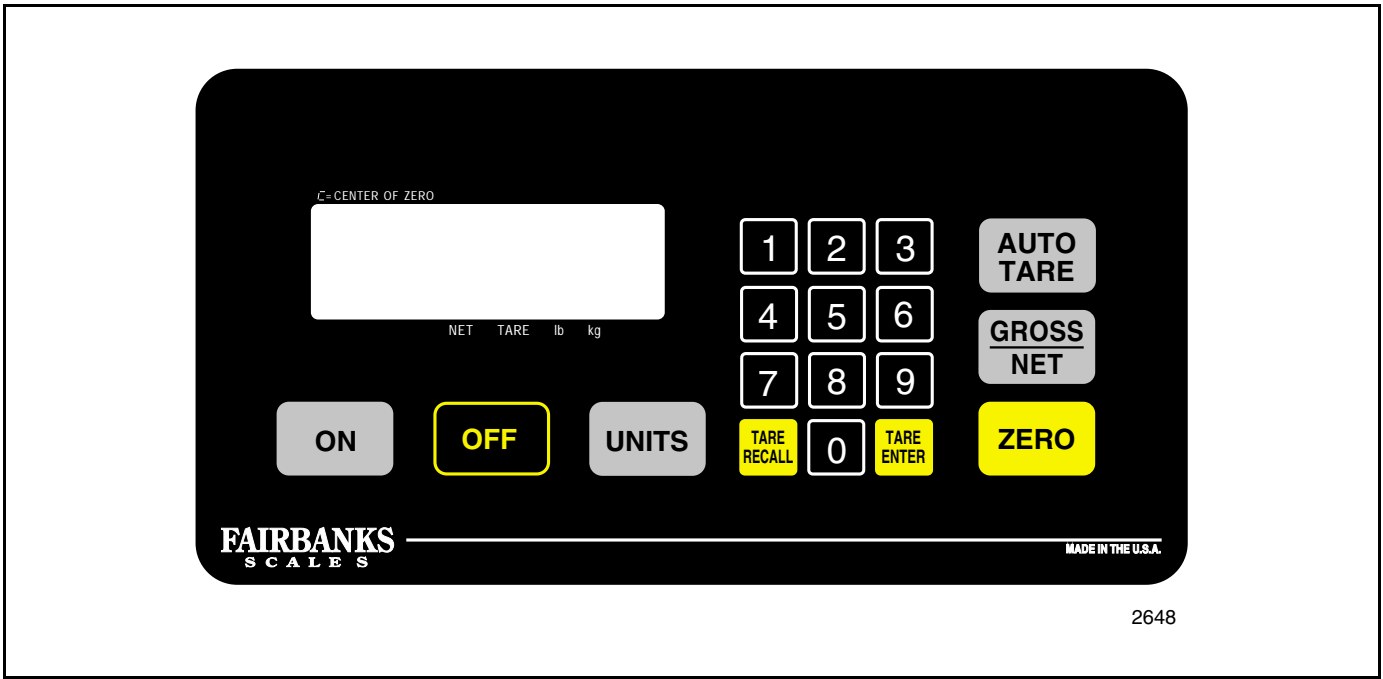   Continuous operation, 50 hours

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FIGURE 3-1: FRONT PANEL

SECTION 3:
FRONT PANEL

3.1 Keys

ON

Turns display ON

  a. after battery pack replacement

  b. when the operator turns the display off

Will not turn the H90-3051 ON.

OFF

Turns display OFF. Will not turn the H90-3051 OFF.

GROSS NET

Toggles between GROSS and NET modes on both the remote display and the H90-3051.

AUTO TARE

Enters the weight on the platform into the H90-3051 TARE memory and sets the scale and remote display to the NET mode.

UNITS

Toggles the indicators between lb and kg on both the remote display and the H90-3051, if the H90-3051 is programmed for lbs or kgs.

ZERO

With the scale in GROSS mode, sets the remote display and the H90-3051 equal to ZERO and turns on the Center-Of- Zero indicator.

TARE RECALL

Causes the current tare weight on the H90-3051 to be displayed.

TARE ENTER

Enters tare weight as input by the operator through the numeric keypad

0 through **9**

Numeric keys for manual input of tare weight

3.2 Indicators

NET
Net Mode

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TARE
Tare Mode

lb
pounds

kg
kilograms

3.3 Displayed Legends

$\sqsubset\overline{\phantom{\rule{0ex}{0ex}}}$
Center-of-Zero

LobAtt (Low Battery)

3.4 Blank Display

When the remote display is in the "OFF" condition, the liquid crystal display is completely blank.

3.5 Low Battery Condition

If the remote display is operational (ON) and senses that the input (battery pack) voltage is below the level which guarantees correct operation, it will turn OFF.

3.6 Low Battery Legend

When the remote display is first turned ON, the "LobAtt" legend will appear briefly and the display will turn itself OFF if a low battery condition exists.

3.7 Back Panel Description
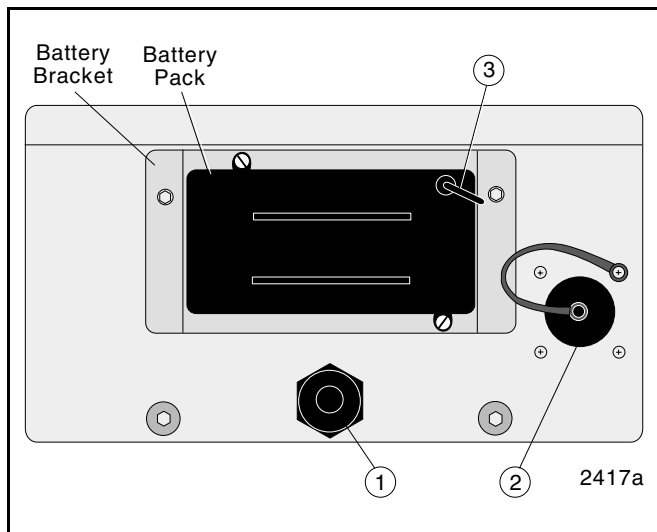
FIGURE 3-2: BACK OF INSTRUMENT

1. Dustproof gland and guide for fiber optic cable

2. Battery port with protective cap used when battery cable is disconnected

3. Battery cable

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SECTION 4: INSTALLATION

4.1 H90-3051 Front Panel Printer Programming, Channel A

A. Channel A, Printers

1. Data available to be printed:

   Gross weight
   Tare weight
   Net weight
   Time
   Date
   ID
   Ticket Number

   The above data items can be enabled or disabled for printing. See Function Key Programming, Channel A.

2. The data will be transmitted over Channel A each time the [PRINT] key is pressed if there is no motion on the platform and a valid weight is displayed, ie. not out of weighing range or in a non-weighing mode. "ACK" legend will appear momentarily.

3. If the [PRINT] key is pressed during an inhibit condition, printing will not occur once the inhibiting condition ends. The [PRINT] key will have to be pressed again.

B. Formatting Print Locations For Data Strings To Be Printed

The locations are set by entering a line number and a column number for the data item. A line number of 0 will inhibit the printing of an item. Three types of printers are provided for: a ticket printer, a form printer and a tape printer.

A weight string consists of 6 or 7 weight characters, six units characters and three legend characters as shown below:

"39050 tonne GR" or "390.02 ton TA" or "1234.56 gal NT"

Each character within the quotation marks (spaces included) will be printed. The six units characters and/or the three legend characters may be suppressed.

For the remaining strings, typical outputs are given below:

" 3:38 PM"	or	"17:56"			time
"11–13–90"	or	"4– 4–91"			date
" 123"	or	"123456"	or	" 0"	identifier
"# . . . 123"	or	"# . . . . . 7"			ticket number

Tare and net weights may be printed only when the instrument is in the NET weighing mode (net weight displayed).

For all three printers, all characters in the weight strings only may be printed with enlarged character sizes (spaces included). Large characters are two columns wide.

Ticket printer line spacing is set by the printer switches at 5, 6, 7 or 8 lines per inch. The form printer and the tape printer have a fixed line spacing.

Both the ticket and tape printers have a 40 character width with normal size characters. For large characters, the width changes to 20 and 24 characters respectively.

Inverted printing is possible with the ticket printer - the printer switch (inverted print switch - 7) must be set to the closed position at all times.

Interface characteristics such as baud rate, number of bits/char etc. are programmed as follows. At the completion of that sequence, the prompt "PtAL 0" is given.

Pushing the [ENTER] key will exit the program mode whereas pushing the [PRINT] key will change the prompt to "PtAL 1". Pushing the [ENTER] key will now get the operator into the formatting program (pushing the [PRINT] key will change the prompt back to "PtAL 0").

In addition to I/O Output Accessory A5805 being installed in the instrument, Accessories 4901656, 5807, and 5808 must be installed and Channel A must be enabled at Service Program Step 15.

1. Place the instrument into the weighing mode.

2. Press [FUNC]. "FunC" will be displayed.

3. Press [7 PROG] and the display will show "CuSt".

4. Press [PRINT] key and the display will show "Chan".

a. Press [ENTER] to return to the Weigh mode.

b. Press [PRINT] and "Chan A" is displayed.

5. With "Chan A" prompt displayed, press the [ENTER] key. The display will show the Channel A baud rate.

NOTE

Do not set a baud rate of 19200 on one channel and 38400 for another. Any other combination is acceptable.

Set the Output Format as listed in the following chart.

The [PRINT] key toggles the operator through the available options. The [ENTER] key saves the displayed options and advances to the next parameter.

B. Programming Chart, Channel A

Baud Rate Options	
Displayed Options 300 600 1200 2400 4800 9600 19200 38400	For Models K500, Okidata and Eaton Ticket Printers
Stop Bits Options	
Displayed Options Stop 1 Stop 2	For Models K500, Okidata and Eaton Ticket Printers
Parity Options	
Displayed Options EuEn Odd	For Models Okidata and Eaton Ticket Printers
nonE	For Model K500 Printer
Character Data Bits Options	
Displayed Options Char 7 (7 bit character)	For Model Eaton Ticket Printer
Char 8 (8 bit character)	For Models K500 and Okidata Printers
Net Print Options	
"gtn"	When in Net mode Gross, Tare and Net weight is printed
"nEt"	When in Net mode Net weight only is printed

Formatting: The [PRINT] key is used to scroll through the options available at a particular step. The [ENTER] key causes the current option to be registered and advances the program to the next set of options.

After "gtn" or "nEt" has been entered, the display will show "PtAL 0". Pressing the [PRINT] key will toggle the display between "PtAL 1" and "PtAL 0" ("PtAL" stands for "Print Alter"). Pushing the [ENTER] key will cause the instrument to revert to the normal weighing mode. Pushing the [ENTER] key while the display shows "PtAL 1" will advance the instrument to the formatting options.

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C. Formatting Options

The first option is the printer type. The table below gives the options available for each printer type.The option that appears as a prompt corresponds to the current option selected.

PRINTER TYPES   (1'st option)
"tiCPrt"   "ForPrt"   " taPE "
"CHARACTER SIZE"
"EnHAnC"   "RE9uLr"
LEGEND SUPPRESSION
"LE9End"   "noL9nd"
UNIT SUPPRESSION
" unit "   "nounit"
REVERSE PRINT   (ticket printer only)
"Pt r2L" - prints right to left   "Pt L2r" - prints left to right
FORM LENGTH   (form printer only)
"LE 110"   "LE 55"   "LE 35"   "LE n"
11 inches   5.5 inches 3.5 inches   next print begins
                                                      after end of last print

The prompt "grL xx" appears and xx is the current value of the line where the gross weight string will be printed. To change the line number, use the numeric keys ("1"

through "9" and "0") and push [ENTER] to register the desired value. Decimal point entry is ignored (an entry of 13.5 is registered 135 e.g.). To exit the format program, push only . To verify/change other line or column num-

bers, push the [ENTER] key. The complete list of prompts/locations are listed in sequence below. The format program mode will automatically terminate after the ticket column location is displayed and any non-numeric key is activated.

"grL	xx"	gross line number
"grC	xx"	gross column number
"tAL	xx"	tare line number
"tAC	xx"	tare column number
"ntL	xx"	net line number
"ntC	xx"	net column number
"tiL	xx"	time line number
"tiC	xx"	time column number
"dAL	xx"	date line number
"dAC	xx"	date column number
"idL	xx"	identifier line number
"idC	xx"	identifier column number
"nuL	xx"	ticket line number
"nuC	xx"	ticket column number

D. Ticket Number

Ticket Number entry will be inhibited if Program Step 15 is not set to 1 or 3 (Chan A enabled).

Place the instrument in the weigh mode.

1. Press [FUNC] and [3] keys. The "ENTER" and "ACK" legends are lighted and the current ticket number is displayed.

2. To change the ticket number, use the numeric keys [0] through [9] and then press [ENTER]. To retain the displayed ticket number, press only [ENTER]. The instrument will return to the weigh mode. Ticket numbers have a range from 0 to 999999.

A ticket number is only printed when a net weight is printed and is incremented after each print. When the instrument enters the "SLEEP" or "LO BAT" mode, the next ticket number to be printed is entered into non-volatile memory. This is the ONLY time the ticket number is entered into non-volatile memory. If power is lost during operations, the instrument will re-start with the last ticket number in the non-volatile memory.

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4.2 Output Formats

A. Typical Channel A, Printer Output

```
     2000 lb     GR



   03:02 PM
    4- 9-91
         0
```
GROSS MODE

```
     2000 lb     GR
     1000 lb     TA
     1000 lb     NT
   03:02 PM
    4- 9-91
         0
```
NET MODE

```
     1999 lb     GR
     5000 lb     TA
          lb     NT
   03:03 PM
    4- 9-91
         0
```
NET MODE with NEGATIVE NET

```
          lb     GR
     1999 lb     TA
          lb     NT
   03:04 PM
    4- 9-91
         0
```
NET MODE, NEGATIVE GROSS and NET

```
          lb     GR



   03:04 PM
    4- 9-91
         0
```
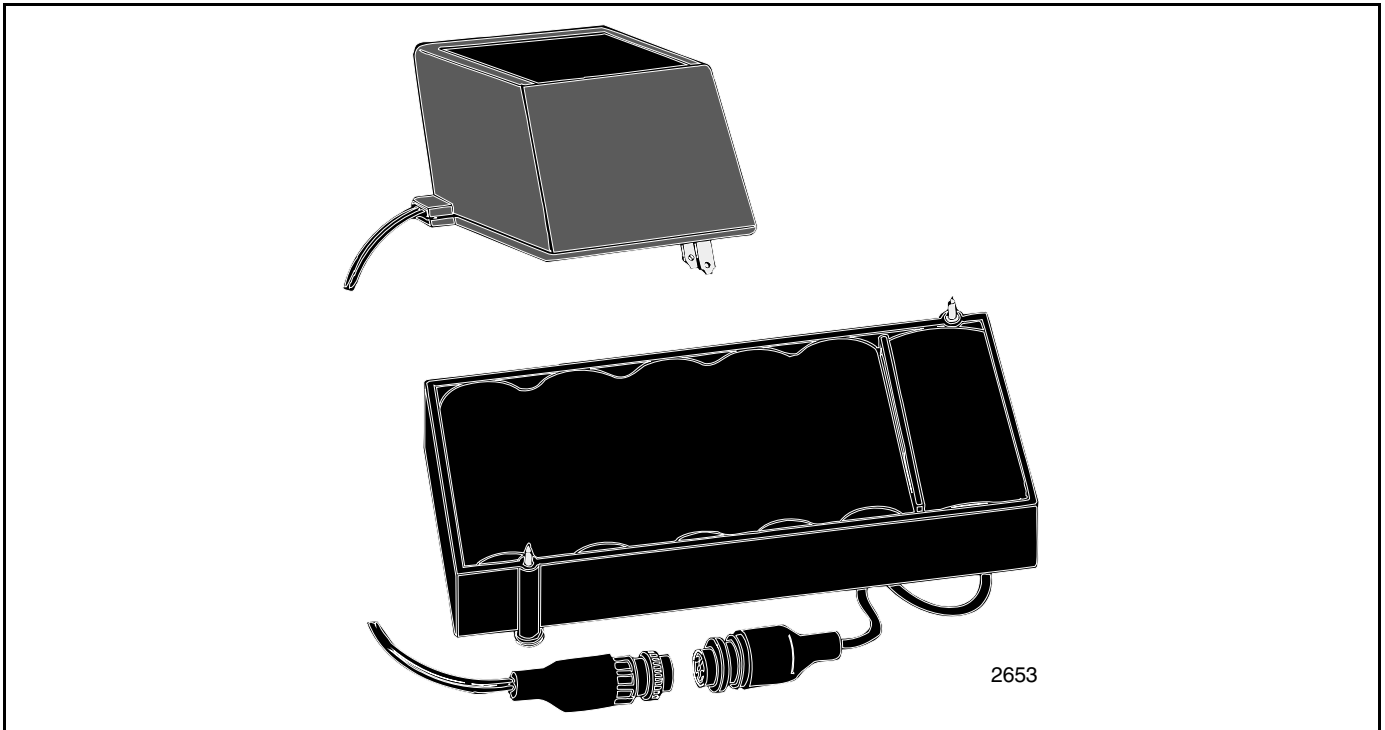GROSS MODE, NEGATIVE GROSS   *2494*

FIGURE 5-1: BATTERY PACK RECHARGER

SECTION 5: BATTERY PACK

5.1 Battery Pack Replacement

Disconnect the battery pack connector from the battery port. Loosen the two thumb screws holding the discharged battery pack in place and remove to a safe area for recharging.

Replace with a freshly charged battery pack.

Press the [ON] key to restore the instrument to operation.

5.2 Battery Pack Recharging

The Battery Pack Recharger is to be used to recharge the Battery Pack. DO NOT USE FOR ANY OTHER PURPOSE.

The Battery Pack Recharger will partially recharge a fully discharged battery pack in about 16 hours. To recharge a battery pack:

1. Place the discharged battery pack on a flat surface with the connector facing upward.

2. Insert the connector on the recharger into the connector on the battery pack.

3. Plug the recharger into a standard 110 VAC/60 Hz outlet.

4. A minimum of 16 hours of charging time is required before a battery pack can be reused. Full charge, 100% capacity, is attained between 36 and 48 hours of charging time.

5. At temperatures above 84° F, battery packs can not be recharged to 100% of their nominal capacity.

If a recharged battery pack is not required for immediate use, it should be left on the charger to maintain maximum charge. Leaving the battery pack on the charger will not damage either component.

WARNING
Battery packs are to be recharged in non-hazardous areas only.

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Model H90-3052DR Remote Display is NOT for use with the H90-3052 Instrument. Model H90-3052DR Remote Display will work only with the H90-3051 ULPI with special software.

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~~APPENDIX I: CONTROL DRAWING~~

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