GASBOY

CFN Series

CFN III Manager's Manual
for Windows NT®

Version 3.3

Computer Programs and Documentation

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Approvals

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Underwriters Laboratories:

U. L. File#	Products listed with U. L.
MH4314	All dispensers and self-contained pumping units
MH6418	Power operated Transfer Pump Models 25, 25C, 26, 27, 28, 72, 72S, 72SP, 72X, 73 and 1820
MH7404	Hand operated Transfer Pump Models 1230 Series, 1243 Series, 1520 and 1720 Series
MH10581	Key control unit, Model GKE-B Series
	Card reader terminals, Models 1000, 1000P
	Site controller, Model 2000S CFN Series
	Data entry terminals, Model TPK-900 Series
	Fuel Point Reader System

New York City:

NYFD C of A #	Product
4823	9100A, 9140A, 9152A, 9153A, 9800A, 9840A, 9850A, 9852A, 9853A, 9140
4997	9822A, 9823A
5046 pending	9100Q, 9140Q, 9152Q, 9153Q, 9800Q, 9840Q, 9852Q, 9853Q

California Air Resources Board (CARB):

Executive Order #	Product
G-70-52-AM	Balance Vapor Recovery
G-70-150-AE	VaporVac

NCWM - Certificate of Compliance:

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COC#	Product	Model #	COC#	Product	Model #	COC#	Product	Model #
95-179A2	Dispenser	9100 Retail Series, 8700 Series, 9700 Series	91-019A2	Dispenser	9100 Commercial Series			
95-136A5	Dispenser	9800 Series	91-057A3	Controller	1000 Series FMS, 2000S-CFN Series			

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5,257,720

Point of Sale/Back Office Equipment

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1 – Introduction

This reference manual explains commands that are used to setup, maintain, produce reports on, and diagnose problems for a CFN III system.

Your service technician will set up your CFN III and introduce you to some of its features. This manual can help you avoid many unnecessary service calls, and help assure that your CFN III works the way you want it to.

This manual is for anyone who needs to know how to issue commands to the CFN III, or interpret the log printout and other reports. Generally the site manager or person in charge of operations at the site should be familiar with this manual and its contents so you can operate and maintain the CFN III information. Attendants do not need to read this manual in order to operate the Check Point or Profit Point consoles, which are covered in other manuals.

This manual is not intended to be read cover to cover, but you should become familiar with its contents so you can look up information when you need it.

Your Operating System

Your SITE CONTROLLER III (SC III) comes with a PC operating system called Windows NT® from Microsoft. This new system is icon based, meaning that to access the command window and/or applications you must use your mouse. You must move the mouse (which moves the arrow on the screen) over the icon that you want to open and double click, using the left mouse button. Your technician will instruct you on the basics of this system and accessing your CFN3 command window. The CFN3 command window must remain running at all times. It can be minimized, more about that later, but once closed, you will lose contact with the site controller.

When the SC III software was installed, your technician or system administrator configured it with your particular devices and the procedures your company follows. For example, if your site accepts cash for fuel, the SC III has been told whether the customer is required to pay before pumping (a *prepay* system) or is allowed to pay after pumping (a *postpay* system).

Starting Your CFN3 Application

The computer is turned on (booted) by pressing the button on the front of the computer. Make sure that the monitor is turned on and there are no diskettes in the A: drive. It will take a few moments to start. You do not need to double click the CFN3 icon to start operations, the operating system has been programmed

to do this for you. The CFN3 command window automatically opens. Press the return key if your signon prompt does not display immediately.

Quitting Your CFN3 Application

The preferred way to quit the CFN3 application is to press the ALT key and while continuing to press the ALT key, press the X key. This will terminate your site operations.

Minimizing the Command Window

The site controller runs with either the command window open or minimized.

Minimizing the CFN3 command window collapses the window on your desktop into the taskbar at the bottom of the screen, running it in the background. To place the window in the background, click the small box in the upper right corner of the command window that has an underline. Notice the box with the "X". Clicking once on the X will *quit* the application and terminate site operations. You need to log on again by double clicking on the CFN III icon. Remember that the CFN3 command window must remain either open or minimized to communicate with the CFN III. If your window is not open, or has been "minimized", click once, using the left mouse button, on the CFN3 box in the taskbar to open the window onto the desktop.

Should you accidently quit the CFN3 program by clicking in the "X" in the upper right corner, double click on the CFN3 icon using the left mouse button and log in again.

Levels of Operation

The CFN3 application has 2 user levels of operation: Gasboy, which is the daily CFN3 operation (and Integral Profit Point if you have it) and Administrator which allows you to add software updates, create/delete users, add passwords, change your PC settings, etc. You can run your site from the Administrator level but it is not recommended.

Gasboy Level

Figure 1-1: Gasboy - CFN3 Desktop
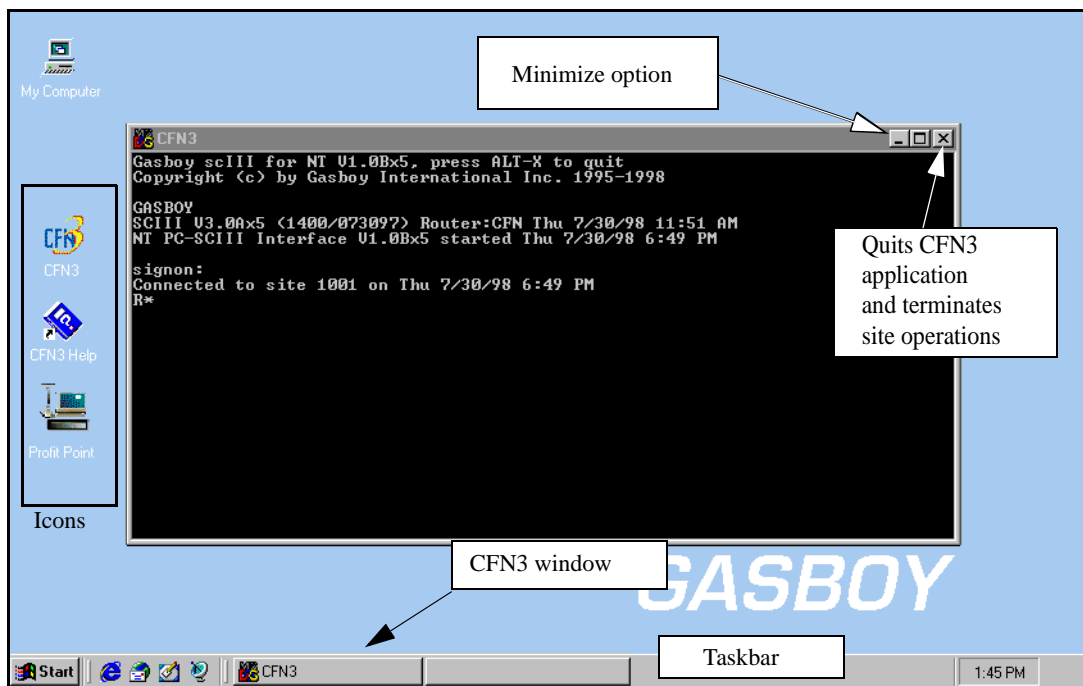
Gasboy is the default login (user) and is the working level of operation. All CFN3 operations occur at this login level. When you turn on the computer the user is Gasboy with GASBOY as the password. The desktop will contain very few icons; CFN3, CFN3 Help, My Computer, and Integral Profit Point (optional). Your day to day site operations use this login.

Figure 1-1 shows a typical CFN3 desktop with the various icons available and the CFN3 command window open. Notice in Figure 1-1 that the CFN3 icons (CFN3, the Integral Profit Point and the CFN3 HELP) are located in the lower left of this desktop. Icons are your link to starting your software programs. The icons can be placed anywhere on the desktop but must always be available should you need to open the program.

At the bottom of the screen is a taskbar. Whenever an application is open it will be represented at the bottom of the screen in this taskbar. If you minimize the CFN3 command window it will be represented in this taskbar. This is your identification that the CFN3 command window is still running. The command window must remain open, or run in the background (minimized), to communicate with the site controller.

Clicking on the box representing the program will open or minimize the program's window on the desktop.

Administrator Level

Administrator is where users are added or deleted, your hardware settings changed, passwords changed, etc. You can also add software updates. The Administrator requires a separate login, has a different password, and has additional features/options. There are more icons displayed on the desktop.

The RUN command, used to install software from the Start button, is only available from the Administrator level. This command is an NT operating system command and is separate from the CFN3 RUN command.

Logging onto NT as Administrator

When the computer boots the default login is Gasboy. To make any changes to your CFN3 setup you must log in as Administrator. To log in as Administrator:

1   Select Start->Shutdown.

2   Select Close All Programs by clicking once in the radio button.

3   Hold down the Shift key and click Yes.

4   Hold until a login window appears.

5   Enter Administrator with your password.

6   The desktop will appear similar to the Gasboy illustration. There are more icons on the desktop and if you press the Start button in the taskbar, more options are available to add software updates, etc.

7   When you have finished making your additions or changes, relogin as Gasboy by selecting Start->Shutdown.

Miscellaneous NT Information

If you do not like the arrangement of the icons on the desktop, you can change the arrangement by clicking once with the right mouse button anywhere on the open desktop. Select an option from the list that appears.

To refresh your desktop, press F5. If using the Profit Point keyboard, F5 is All Stop.

Profit Point

If you have a Profit Point, start the Profit Point by double clicking on the Profit Point icon using the left most mouse button. For the Profit Point to operate, the SC III must be running with the CFN3 window on the desktop either open or minimized.

On-line Documentation

On-line documentation is available on the SC III. The on-line system is viewed using your browser that comes with your PC system. Use the on-line documentation for a quick reference when you do not want to pull the manual off the shelf.

To open the on-line system, double click the CFN3 HELP icon. The browser will open displaying the on-line library available. Click once on the manual you would like to review.

Cabling and Wiring

Use the following illustration to correctly connect your SC III to the various pieces of equipment.

Figure 1-2: SC III Connections
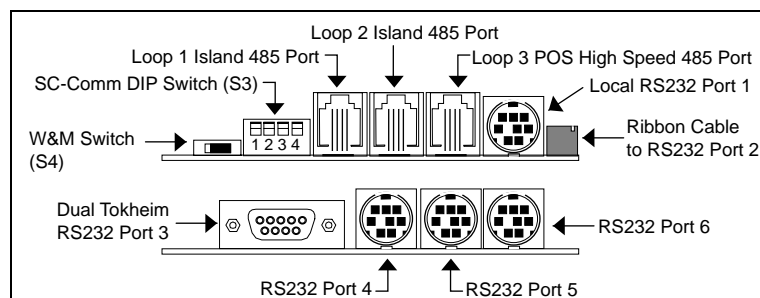
- Port 1, Local RS232 - use cable number C05994, SC III terminal cable assembly.
- Port 2, Ribbon Cable to RS232 - use ribbon cable C05554 (not currently used).
- Port 3, RS232 - use cable number C05996, SC III to Tokheim® cable assembly.
- Port 4, RS232 use cable number C05995, SC III modem cable assembly.
- Port 5, RS232 use cable number C06006, SC III Wayne® cable assembly.
- Port 6 is extra and can be used as either a modem or Wayne.

Note: Ports 1, 4, 5 and 6 are interchangeable.

Loops 1, 2, and 3 - use cable number C05670, cable assembly 4 position 1:1 HS/Line - 8ft. modular cable.

More complete information on ports and switches can be found in "Appendix A: SC III Ports and Switches" on page A-1.

2 – CFN III

System Overview

The SC III is the brain of the CFN System. Its job is to keep you informed of what is going on at your site and to enable you to control the various pieces of equipment involved in a fueling operation, such as fuel pumps or dispensers, automatic gates, and tank gauges.

The SC III collects information about what each device is doing and makes that information available to you in a convenient format. When you issue commands to the SC III - for example, to tell it to authorize a sale on a fuel pump - it forwards the request to the pump hardware, then monitors the sale in case something goes wrong. It puts control of all the connected devices at your fingertips.

When the SC III was installed, your technician or system administrator configured it with the PC operating system, along with your particular devices and the procedures your company follows. For example, if your site accepts cash for fuel, the SC III has been told whether the customer is required to pay before pumping (a *prepay* system) or is allowed to pay after pumping (a *postpay* system).

CFN3 Command Window

The command window has an R* prompt where you will enter your commands to the CFN3 application. If you do not see this prompt you will need to press the ENTER key to bring up the *signon* prompt. Sign on as instructed and press ENTER. The R* prompt will display. The command window must be "active" to communicate with the SC III. Active means that the window appears on the desktop with a colored band at the top displaying the words CFN3. If the band is gray then the window is not active. To activate the window, move the desktop arrow over the window (using the mouse) and click once using the left mouse button. For more information about your command window and the desktop see .

Accessing Drives

You cannot change drives while in the R* command window. You can access the PC's other drives by specifying the path. For example:

R* dir C: displays the contents of the root directory on the PC.

R* dir C:\   displays the contents of the root directory on the PC.

R* dir p:BIN   displays the contents of the BIN directory within the SC3 directory.

R* dir p:	displays the contents of the C:\SC3 directory. This is just a link to the SC3 directory. (same as R* dir C:)

Note: A drive letter "P" has been created to distinguish the SC3 root from other drives on the PC. Using this letter "P" at a prompt will display the SC3 directory as defined above.

Consoles

In order to use the SC III fully, you must know how to give it commands and to understand its replies. The two point of sale devices that communicate with the SC III are the Check Point and/or Profit Point consoles.

The *consoles* combine pump control and cash-register functions. They allow you to turn on pumps and accept cash or other payment. They are used at sites that do retail business, accept cash or credit cards in the store. The Check Point and Profit Point manuals describe console operations.

Readers

Readers are devices that communicate with the CFN system and allow input from the end user. They can activate pumps, display messages, and print receipts. Readers can consist of any combination of a customer display, keypad, card reader, and receipt printer. Some readers are "in dispenser" and are specifically assigned to a single pump. Stand-alone readers can represent multiple pumps and require a pump selection from the user. To obtain a receipt from these readers, the user must return to the reader after completing a fuel sale and re-swipe the card or enter the pump number that was used.

The Log Printer

Another device, the *log printer* prints a continuous record of transactions and may also be used to print reports. Every site needs some type of printer. It is important to know how to read the information that comes out of the printer, since it includes data about completed sales and messages about any errors that have occurred.

The log printer generates an on-going record on paper of important events at the site. These include sales transactions and system messages generated when certain commands are run or when errors are detected during operation.

The log printer, such as an Okidata 184 plain printer, should be located where site personnel can read its output. The output of the log printer serves both as a maintenance log and an audit trail. For example, the log printer records an entry as each sale is concluded and also any time a problem is detected in an attached pump, island card reader, or other device. Since the printed log is an important

business record, *it is important not to let the log printer jam or run out of paper*.

In order to print, the log printer must be in the state called *on-line* or *ready*. This is usually indicated by a light on the front panel of the printer. The log printer normally goes off-line automatically when it jams or runs out of paper. You can take the log printer off-line to load paper. Most printers have a switch labeled on-line or select for taking them on- and off-line.

A properly connected and configured log printer will notify the SC III whenever it goes off-line, so that no data will be sent to it until it is again ready to print. However, the space available for storing such output is limited, so the log printer should not be left off-line for long periods while the site is operating.

It is possible to print a file on a log printer. This is usually done at shift change or by a local automatic command file. When a file is printed on the log this way, the terminal beeps and prints the header *-Printing: filename date time* where *filename* is the name of the file being printed.

Command Terminals

Site commands can be entered through local or remote terminals. The local terminal is the command window on your SC III PC. A remote terminal is connected to the site through one of the SC III's RS232 ports. It can be any dumb terminal such as the LINK or another PC running terminal emulator software capable of supporting VT100 or VT52 (such as Procomm Plus®). The remote terminal can also be a modem connection.

Commands

Commands are instructions you type in the CFN3 Command window. CFN3 commands must be typed in exactly the format shown in this manual. Most commands are words or abbreviations for the action to be performed. For example, typing PRINT DATE and then pressing the ENTER key causes the CFN III to print the current date and time according to its internal clock.

Some commands, as explained in this manual, have short forms that you can use instead of typing the whole command in order to save time. In the above example, PRINT DATE could have been typed P DA.

Besides command words, other special symbols, such as < and >, provide flexibility in redirecting the input to or output from commands.

Command keys

The keyboards on all types of PCs have much in common. The SC III uses several specific keys for specific functions. These keys may be located in different positions on different keyboards.

Locate the DELETE, CONTROL, ENTER, and ESCAPE keys on your keyboard. Note that:
- the DELETE key may be marked DEL
- the CONTROL key may be marked CTRL or CTL
- the ENTER key may be marked RETURN, RTN or ⏎
- the ESCAPE key may be marked ESC

System-response Problems

When you open the CNF3 command window, it should display an R* at the top left of the screen. If not, press the ENTER or RETURN key on your local terminal, the system should respond with a *signon* prompt. Should the system not respond, close the window by pressing the ALT key, hold it down, and then press the X key. Release both keys. Open the CFN3 window again by double clicking on the CNF3 icon. Press ENTER to get the signon prompt.

SC III Command Sessions

After signing on, you may enter data and commands until you either sign off or are signed off automatically. The time during which you are signed on is referred to as a *command session*.

How to Sign On

To sign on to the Site Controller, you enter a user number and sign-on code. See below for how to add new users and change sign-on codes.

To sign on:

1 Press **ENTER**.
The terminal will print the message *signon*:.

2 Type your user number, a comma, and your sign-on code, and press **ENTER**.

For example, if your user number is *3*, and your sign-on code is *hawk*, type *3,hawk*. If your sign-on code has any uppercase letters, make sure you enter them in uppercase. The terminal will not echo the password you type for security reasons. If you do not enter a user number, user number 0 will be assumed.

When you are properly signed on, the terminal prints a message such as ***Connected to site 1010 on Tue 1/25/94 1:12PM*** to show that the command session has begun and it is ready to accept commands. The next line displays the ***command prompt*** (R*).

How to Sign Off

To end a command session, press ESCAPE or type EXIT or QUIT and press ENTER.

The terminal will accept no further commands until you or someone else signs on again. When you sign off, the terminal prints ***Sign off Tue 10/24/98 1:25PM***. ***Do not*** click the "X" in the upper right corner of the window.

Automatic Sign Off

If you do not type anything on the terminal for 5 minutes, the terminal ends the command session automatically. This protects the system if you forget to sign off.

How to Change Your Sign-on Code

Use the command LOAD SIGNON or LO SIG to change your sign-on code. A sign-on code can be up to 16 characters long, and does not have to be a word. You can use any combination of characters. When you load a new sign-on code, your previous sign-on code is erased. In order to maintain security, do not write down your sign-on code.

1 Type LOAD SIGNON.

```
LOAD SIGNON (LO SIG)

R* LOAD SIGNON ↵
Sign on code? ******** ↵
R*
```

2 Enter your new code.

Note: In the boxed examples shown in this manual user entries are bold typeface and terminal responses are in regular typeface. A ↵ shows that the user pressed ENTER.

How to Enter Commands and Data

Note: Any time you enter a command, you can type the full command or use the short form, such as LO SIG for LOAD SIGNON in the section immediately above. You can use either UPPERCASE or lowercase letters when typing commands.

Commands tell the SC III to perform particular actions, such as printing reports or changing prices.

To enter a command, type the command on the terminal keyboard and press ENTER.

After the site controller finishes performing the action requested by a command, it will respond with the current drive letter followed by an asterisk (R*) to show that it is ready to accept another command. This letter-asterisk combination is called the *command prompt*, since it prompts you to enter a command. Anytime you see the command prompt, the site controller is ready to accept a command.

For example, if you type the PRINT DATE command and press ENTER, the terminal prints the date and time, followed by the command prompt to indicate that the command has been executed and the terminal is ready to accept another command.

If a command requires that you enter data, the terminal will ask a question—which is called a *data entry prompt*—indicating what type of data you should enter. If the terminal displays a data entry prompt:
- Type the data and press **ENTER**.
- If the command has several prompts, type the requested data and press ENTER after each one.
- After the last prompt in the series, the terminal will print the command prompt to indicate the command has been executed and the terminal is ready to accept another command.

To print the date, type PRINT DATE and press **ENTER**.

```
R* PRINT DATE ↵

Tue 10/24/99 11:40AM, Trans=57, Seq=624 SCIIv3.3
R*
```

SC III will display the date.
Command prompt will be displayed.

To load the date:

1 Type LOAD DATE.

```
R* LOAD DATE ↵
MONTH? 10 ↵
DAY OF MONTH? 24 ↵
YEAR? 98 ↵
HOUR? 13 ↵
MINUTE? 31 ↵
Tue 10/24/99 1:31PM, Trans=154, Seq=332 SCIIIv3.3
R*
```

2 Enter the month (mm format).

3 Enter the day (dd format).

4 Enter the year (yy format).

5 Enter the hour (military time format).

6 Enter the minute.
SC III will display the date and time

If a command does not print data or require data to be entered, the terminal prints just a command prompt to indicate the command has been executed and the terminal is ready to accept another command as illustrated.

```
R* RESET DIAGNOSTICS ↵
R*
```

How to Use Options with Commands

Many commands take options that modify how the command works. These options are additional letters or symbols typed on the command line after the command.

A semicolon (;) separates the command and the option(s). Do not put a space between the command and the option(s); if you insert a space, the option will be interpreted as an argument.

If both options and arguments (data) are used on a command line, the options come first, then a space, then the arguments:
command;options arguments

When more than one option is used with a command, the options may be listed in any order. Complex options (P1=, P2=, >, >>, <) are separated by commas.

The common options are:
A   All. Usually expands the effect of a command.
I   Initialize. Usually initializes data affected by the command.
C   Chain. Allows you to enter multiple sets (a chain) of data to commands requiring data. See below.
P1=,P2=Parameter. Allows you to specify fields for sorting. Field name is given as data immediately following parameter; for example, PRINT TRANSACTION;P1=AUTH would print a list of transactions sorted by authorization codes.
>   Redirect output to a new file. Saves output of a command in a file you specify. If the file already exists, that file is overwritten. Requires destination (file name or LOG) as argument.
>> Redirect output to an existing file. Output is appended to the end of the specified file. Requires destination (file name) as argument. If a file does not exist, it will be created.
<   Redirect input. Allows you to use a file as the source of input to a command. Requires source (file name) as argument.
L   Lines. Used with any command to page output for CRT screen. May also be used to set number of lines per screen (for example, L=20). Stays in effect for all subsequent commands until the user signs off or the L option is redefined by using it on another command.
T   Text. Used in command files intended to be run from the console so that single lines of text can be displayed on the console.
H   Home. Used with any command, clears from the current cursor position to the end of the screen and puts the cursor in the home position on a CRT.

Disk-based commands use different options than those given here for system-resident commands. However, almost all the commands needed for everyday operation are system resident, and so they have the options and form described in this section.

How to Enter Multiple Blocks of Information

For the commands that enter data, the LOAD commands, for example, you can use the C option to enter multiple blocks of data with one command. Without the C option, only a single block can be entered with each command.

To use the C option:
- Type semicolon C (;C) after the command.
- The terminal will print a prompt each time you press ENTER. The amount of data you can enter for each command is determined by the SC III configuration.
- When you have entered all the data, press ENTER once after the next prompt without entering any data.

To use the C option with the command LOAD HEADING, type: LOAD HEADING;C.

```
R* LOAD HEADING;C ↵
Line number? 1 ↵
Heading line? SMITTY'S STATION ↵
Line number? 2 ↵
Heading line? 10 MAIN STREET ↵
Line number? 3 ↵
Heading line? SMITH,, WA 98000 ↵          two commas typed
Line number? 11 ↵
Footing line? THANK YOU ↵
Line number? 12 ↵
Footing line? PLEASE COME AGAIN ↵
Line number? 0 ↵
Form feed length? 5 ↵
Line number? ↵                            no data entered
R*
```

The terminal continues to print prompts each time ENTER is pressed.

To enter a comma, type two commas on the third heading line (see graphic above). One comma will be printed on the receipt.

End the sequence by pressing ENTER, without entering any data, after the last "Line number ?" prompt of the series (see graphic above).

How to Verify Commands

Some commands require verification before they are executed. These commands give you a chance to terminate the action if you entered the command inadvertently.

If a command requires verification, the terminal will print the prompt *Verify (y/n)?*. Type a Y to continue execution, or an N to terminate the command. Do not type a Y unless you are sure the command does what you want to do.

Try not to get in the bad habit of typing Y automatically when prompted with *Verify (y/n)?*. Look at the command line you typed and think first.

Note that verification is not required when one of these commands is included in a command file.

How to Use Ranges with Commands

Most PRINT commands allow you to act on specified ranges of data.
- A range has the form N-M, which means numbers N through M. (In entering the command, actual numbers are substituted for N and M.)
- A -N means numbers from the beginning of the file through N.
- An N- means number N through the end of the file.
- An N means print only number N.

If the starting number specified is not in the file, no data is printed. The printout stops after the last number specified or at the end of the file if the ending number is not in the file.

You can specify more than one range for a command:
- PRINT TRANSACTION 23-150 prints transactions 23 through 150.
- PRINT TRANSACTION 23-150 200-250 prints transactions 23 through 150 and 200 through 250.
- PRINT TRANSACTION 23- prints transaction number 23 through the end of the transaction file.
- PRINT TRANSACTION -5 prints transactions from the beginning of the file through transaction 5.
- PRINT TRANSACTION 34 prints only transaction number 34.
- PRINT TRANSACTION;P2=ACC=54, 1-10 prints transactions whose account number starts with 54, in the transaction range 1 through 10.

The only PRINT commands that do not allow ranges are PRINT CARD, PRINT CONSOLE, PRINT DATE, PRINT PHONE, PRINT RECEIPT, and PRINT TIP. PRINT LOCKOUT does not allow ranges in systems with limited lockout.

A Shortcut for Entering Data

Once you have become familiar with some of the commands, you may no longer need the prompts to remind you how to enter data. You can type the command and all the data you want to enter on one line before you press ENTER.

Separate items with a comma. To enter a comma as part of the text, type two commas. Remember that if you use the C option, you must press ENTER *twice* to enter and terminate the command.

The command and the data required for the command, with commas between items are typed, then ENTER is pressed twice.

```
R* LOAD HEADING;C 1,SMITTY'S STATION,10 MAIN STREET ↵
Line number? ↵
R*
```

How to Use Disk-based Commands

Disk-based commands are programs that are stored on a disk. These commands are actually names of executable disk files. Therefore, if the file is stored on a removable (or floppy) disk, the disk must be present in the drive for the command to be run.

There are two types of disk-based commands: command files that contain a list of SC III commands and have the extension .CMD, and executables that have the extension .BIN. To execute either of these, a disk containing the corresponding CMD or BIN file must be in the SC III disk drive, or the file must be present on the hard disk drive.

The SC III will first look for the command in different places in the following order (known as the search path):

R:	RAM drive
.	current directory
C:BIN	the .BIN directory on the hard disk

You must type the entire command name, including the path, if the command is not in the RAM drive, the current directory, or C:BIN. Do not type the extension .BIN or .CMD. If the CFN III cannot find a .BIN or .CMD file corresponding to what you typed, it will reply with the message *unknown command*. The site looks for .BIN first, then .CMD.

Redirecting Command Input and Output

Normally commands take their input from the keyboard and send their output to the command terminal. You can use input and output redirection to cause commands to take their input from a file and put their output in a file.

You can use input and output redirection together. When you combine the redirection options with other options on the same command line, if the other

options follow the redirection options, put a comma after the filename. For example,

> PRINT PUMP;>*filename*,A
> may also be written as
> PRINT PUMP;A>*filename*

In any case, a blank space should always separate the command options from the arguments or data.

How to Redirect Input for a Command

The option for input redirection is <. You can create a file with data for a command, then execute the command with that file as input. For example, the file MESSAGES shown below contains data for the command LOAD MESSAGE. This example results in a moving message on the island card reader's display. The second column is the length of time each line is displayed.

The command LOAD MESSAGE;<MESSAGES,IC executes the command LOAD MESSAGE with input from the file MESSAGES.

```
R* LOAD MESSAGES ↵
1      3.00    Welcome to
2      3.00    Will's Fast Fuel
3      3.00    Walla Walla,, WA
4      3.00    <---Slide Card <---
5      0.20                <---
6      0.20           <---
7      0.20    <---
8      0.20    <---
9      2.00    Need Oil?
10     3.00       Oil is on sale!
R*
```

How to Redirect Output from a Command

The options for output redirection are > and >>. These options differ in their effect on an existing file that is to receive output. The > option overwrites the contents of an existing file. The >> option appends data to the end of an existing file. For example, the command PRINT TRANSACTIONS;>TRANS puts the output of PRINT TRANSACTIONS in the file TRANS, deleting whatever was in the TRANS file.

The command PRINT TRANSACTIONS;>>TRANS appends the output of the command PRINT TRANSACTIONS to the file TRANS.

The Log Printer

Do not use the option ;>LOG with a command file or an executable on a SC III.

How to Print a File on a Log Printer

Use the command LOG FILE or LOG FI to print a file on the log printer.

```
LOG FILE (LOG FI)
R* LOG FILE ↵
File name? SAL-RPT ↵
R*
```

1 Type: LOG FILE

2 Enter the *filename*

The A option, when added to LOG FILE, deletes the designated file after it has been printed on the log printer.

How to Print a Message on a Log Printer

Use LOG MESSAGE or LOG ME to print a message on the log printer. You can use the C option to log messages requiring more than one line, but each line will have the date and time appended to it.

```
LOG MESSAGE (LOG ME)

R* LOG MESSAGE Bob, Call office ↵
R*
```

The message that prints includes the date and time: ***Bob, Call branch office Tue 19/27/98 5:51 PM***.

Keyboard Control Characters

Keyboard control characters are used to edit the command line and to modify the effect of commands. They allow you to terminate commands, delete characters you have typed, and temporarily stop printout.

The following key combinations are described in this section:

CTRL-C	Terminate a command.
CTRL-S	Pause display.
CTRL-Q	Unpause display.
CTRL-X	Delete current line.
DELETE	Delete previous character(s) - printer terminal.
BACKSPACE	Delete previous character - CRT or PC CFN III terminal.

The L command option and the HELP command are also discussed next.

The CONTROL Key

As shown above, some functions are executed by using a combination of the CONTROL key (designated by CTRL or CTL on the key) and a specified character. To execute one of these functions, hold down CONTROL while you type the specified character.

Note: The use of the CONTROL key is indicated by a caret (^) before the character to be typed while CONTROL is held down. For example, to enter a ^C, hold down CONTROL and type a C.

How to Terminate a Command

After you have typed a command and pressed ENTER, you can terminate the command in most cases by typing a ^C. (Remember, C for *cease*.) When you type a ^C with a print command the printout will stop at the point where the ^C was typed.

How to Delete Characters

Press the BACKSPACE key (or type a ^H) to delete the previous character. Press BACKSPACE as many times as necessary to delete the mistake, then type the correct characters. You must make the corrections before you press ENTER.

The user typed PRNT.
The user pressed BACKSPACE twice.
The terminal deleted the NT.
The user typed INT DATE.

```
R* PRNT

R* PR

R* PRINT DATE
```

How to Delete a Line

Use a ^X to delete an entire line. You must make the correction before you press ENTER.
The user typed PRUNT DATE and noticed the error.
The user entered a ^X.
The terminal printed a backslash after the deleted line and moved down one line.

```
R* PRUNT DATE

R* PRUNT DATE\
```

How to Pause Printout

A pause in printing is useful for viewing a printout on a CRT.

To temporarily pause printing without terminating a command, enter a ^S (S for *stop*) or press the PAUSE key if you have a printer terminal. This will keep new lines from being printed.

To continue printing, enter a ^Q, or press ENTER, or press the PAUSE key again.

How to Pause Printout with the L Option

Use the L option to automatically pause printing after a specified number of lines have been printed. Press ENTER to print the next group of lines. If you do not specify a number, 24 lines will be printed.

To use the L option to specify page length, type a semicolon L (;L), followed by an equals sign and the desired number, after the command. For example, ;L=20 sets the screen length to 20 lines.

The L option will affect all subsequent print commands until you sign off. To remove the L option, type semicolon L=0 (;L=0) or semicolon minus L (;-L) after a command.

1 Type: PRINT DIAGNOSTICS;L

```
R* PRINT DIAGNOSTICS;L
```

2 The terminal will print 24 lines each time the user presses ENTER, until all the diagnostics have been printed

1 Type: PRINT DIAGNOSTICS;L=20

```
R* PRINT DIAGNOSTICS;L=20
```

2 The terminal will print 20 lines each time the user presses ENTER, until all the diagnostics have been printed

Permission Levels

Permission levels are used for security and safety. By assigning appropriate permission levels to users and to commands, you can make sure that users have access to only the commands they need to use.

In the default configuration, users with permission level 2 are allowed to activate only basic CFN3 commands. Users with permission level 10 are allowed to activate all CFN3 commands.

Remote Access Command

SYStem. Typing SYStem will take you to the NT operating system from the CFN3 application. Typing SYS does not change drives, it only allows you to see different drives on the PC. To return to CFN3 from NT, type EXIT. Do not add any additional extensions or commands such as SYS PJ or SYS TYPE. It is NOT advised to use this command while using the PC. When you need to access another drive on your PC, use a DOS window with a C: prompt or use Windows NT Explorer.

This command is designed for use from a remote site and cannot use the PC directly when access to another drive is desired.

Optional Commands

Several of the commands shown on the help list, such as DISABLE FPR and ENABLE FPR, work only with the optional programs you may not have installed. If you try to run these commands without having installed the program, an error message appears.

The HELP Command

Type HELP to list all valid commands and options for the permission level you are signed on at. (The short form of the commands are shown in uppercase letters.)

The following illustration shows a printout for a user who has access to all commands. The number before each command is the number that runs that command from a console.

If you specify the first word of a command with the HELP command, only the commands that start with that word will be printed. For example, HELP LOAD prints all the commands that start with LOAD.

If you type HELP * and the second part of a command, you will see all the commands whose second word starts with what you specified. For example, HELP * VEHICLE (note the blank space before and after the *) prints all the commands whose second word is VEHICLE.

The A option with the HELP command shows each command prefaced with its command number.

```
R* HELP;A ↵
Terminal Commands SCIII v3.3

 94:ACtivate GAte;c          10:ACtivate PUmp;cap1       77:ADd ALlocation;c
 11:ADd DRawer;c            100:ADd INventory;c         101:ADd SIGnon
 12:ADd TAnk;c              102:CALL                    103:CHDir
 13:Check CArd;c            154:CLOSE                   105:COPy
105:CP;I                     14:DEactivate PUmp;ca        6:DELete;a
  4:DIRectory;ia             19:DIsable COnsole;c       106:DIsable DUmp
162:DIsable FPR;c            88:DIsable GAte;c          107:DIsable HIstory
 20:DIsable PCu;c           108:DIsable PROduct;c        21:DIsable PUmp;ca
109:DIsable RAW              22:DIsable REader;c        163:DIsable SDI;c
 86:DIsable TMS;c           100:DOwnload SDI            144:ECho;ap1
 23:Enable COnsole;ci       112:Enable DUmp;a            87:Enable GAte;ci
113:Enable HIstory;i         24:Enable PCu;ci           114:Enable PROduct;c
 25:Enable PUmp;cia           8:Enable RAW;a            161:Enable FPR;ci
 26:Enable REader;ci        164:Enable SDI;cia           85:Enable TMS;ci
 27:EXit                     28:Fix TRansaction;ia      116:FORMAT
117:Get TRansaction;a        29:Help;a                   78:LOad ALlocation;c
 30:LOad Authorization;ci   146:LOad CArd;c              76:LOad CRon;ci
 40:LOad CUtoff;c            31:LOad DAte                32:LOad DRawer;c
 33:LOad Fuel;c              34:LOad Heading;ci         118:LOad INventory;c
 35:LOad LImitation;ci       36:LOad MEssage;ci          46:LOad PHone;ci
119:LOad PLU;c               37:LOad PRice;ci            38:LOad PROduct;ca
 39:LOad PUmp;c              41:LOad SHift               42:LOad SIGnon
 45:LOad TAnk;ci            142:LOad TAX;ci              47:LOad TRansaction
 82:LOad Vehicle;cia         48:LOCk CArd;ca            158:LOG EVent
121:LOG FIle;a               93:LOG MEssage;c           122:MKdir
159:NExt CLerk              151:NExt DAY;ia             152:NExt SHift;a
149:PAUse;iap1             155:PORT                      79:Print ALloction
 49:Print Authorization      95:Print CArd              150:Print COnsole
 15:Print CRon               50:Print DAte               51:Print DIagnostics;a
 52:Print DRawer             53:Print Heading           123:Print HIstory;a
 54:Print LImitation         55:Print LOckout            56:Print MEssage
 89:Print MOnitor;a          16:Print PHone              57:Print PRice
 58:Print PROduct;ia         59:Print PUmp;a            145:Print QUantity;ia
124:Print RECeipt;cp1       126:Print SAles;ia          125:Print SIGnon
 18:Print SUmmary;ia         60:Print TAnk              129:Print TIp;a
 61:Print TOtals;ia          62:Print TRansaction;iap1p2 83:Print Vehicle
130:PUrge SITe             131:REBOOT;iap1               7:RECord;i
 80:REMove ALlocation;ca     63:REMove Authorization;c  132:REMove CRon;cia
133:REMove Heading;c         64:REMove LImitation;c     134:REMove MEssage;c
 17:REMove PRice;c          135:REMove PROduct;ca       136:REMove SIGnon
 84:REMove Vehicle;c        138:REName;a                 65:REset DIagnostics;i
 66:REset PUmp               67:REset TOtals;ia          68:REset TRansaction;ia
140:RMdir                    69:RUN;ia                  167:SCReen
156:SEND COMmand;a         157:SEND FIle;a             166:SHow
153:SET_var;i                70:STOP;ia                  81:SUbtract ALlocation;c
 71:SUbtract DRawer;c       141:SUbtract INventory;c     72:SUbtract TAnk;c
160:SYStem;a                 73:TEstPCu                    5:TYpe;a
 74:Unlock CArd;ca
R*
```

3 – Users

The system administrator is usually responsible for assigning a user-identification number and a sign-on code to each person who will need to use the SC III data terminal. Some systems also require users to sign on to the Check Point or Profit Point. For these, the system administrator is also responsible for assigning sign-on codes to people who use the console.

In its normal configuration, the SC III allows up to 99 users; the default number is 5. Each user has three attributes, a user number (0 through 99), a sign-on code (a password) of up to 16 characters, and a permission level (0-10):

- *User numbers* identify users. They are also used in the output of PRINT HISTORY command to show which user executed which commands.
- *Sign-on codes* are used for security. By controlling who knows the sign-on code, you can control who has access to your system. Several users can have the same sign-on code, or each user can have a different one.
- *Permission levels* are used for security and safety. By assigning appropriate permission levels to users and to commands, you can make sure that users have access to only the commands they need to use. In the default configuration, users with permission level 2 are allowed to activate only basic CFN3 commands. Users with permission level 10 are allowed to activate all CFN3 commands.

User ID Numbers

There are two general systems of using user numbers. If there are fewer than 99 employees at a site, each employee can have his or her own user number. The drawback to this arrangement, however, is that if there is a large turnover in employees, keeping track of numbers through numerous rounds of adding and deleting users can be confusing.

A second system involves assigning numbers by user categories, rather than by individual users. Under this system, for example, the system administrator and the site manager might have user number 3, with a permission level of 9; all other users are 2, with a permission level of, say, 1 or 2; and user number 1 is reserved for remote computers in host mode, as explained below.

Special User Numbers

There are two special user numbers: a default user number and a remote host user number. At the *signon*: prompt, each user will enter:
#, password
where *#* is the user's number (0-99) and *password* is his or her password.

User number 0 is the default user. When you sign on, you are required to enter both a password and a user number. The only exception is if you sign on with the password for user 0. With user 0's password, you do not have to also enter 0 as your user number. User number 0 will automatically be assigned to you by the Site Controller. This is the most common way of signing onto the data terminal.

User number 1 is the default remote-host user number. By default, remote computers using CFN host-mode communications sign on as user 1. If your site will be connected to a remote CFN host we strongly recommend that you reserve user number 1 for use only by the remote host. You can set the permission level for user number 1 to whatever is appropriate. If you reset transactions from the remote host, or download prices or lockouts, or do maintenance, you probably need to give the remote host a high permission level, perhaps level 9.

How to Add a User

Use the command ADD SIGNON or AD SIG to add a new user to the system. You also use ADD SIGNON to change a user's permission level or sign-on code. You specify the user number, permission level, and sign-on code. Asterisks (*) are printed for each character of the sign-on code as you enter it.

For security, pick a sign-on code that is hard to guess. Do not use the site's name, the user's name, or any other obvious sign-on code. Sign-on codes may be up to 16 characters long and may include alphabetic, numeric, and special characters. Remember, the ↵ sign indicates that you are to press the ENTER key. What you type in is shown in bold. Asterisks are echoed by the Site Controller in place of your password for security purposes.

1 Type: ADD SIGNON

```
ADD SIGNON (AD SIG)

R* ADD SIGNON ↵
User number? 2 ↵
Permission level? 1 ↵
Sign on code? ******* ↵
R*
```

2 Enter the user number.

3 Enter the permission level.

4 Enter the signon code for this user.

User IDs that will be used to sign on to the Check Point console should have numeric sign-on codes, since the Check Point console does not have a convenient way to enter alphabetic characters.

How to Remove a User

1 Type: REMOVE SIGNON.

```
REMOVE SIGNON (REM SIG)

R* REMOVE SIGNON ↵
User number? 3 ↵

R*
```

2 Enter the User Number.

How to Print a List of User Numbers

Type: PRINT SIGNON (or P SIG).

```
PRINT SIGNON (P SIG)

R* PRINT SIGNON ↵
User Level
0        2
1        9
2        5
3        9
R*
```

For security, the sign-on codes are not printed.

Permission Levels

Every command is associated with a certain permission level. For commands that have the A or I options, the command used with the option may have a different permission level than the plain command. (See the chart in the *Command permission levels* chapter in MDE-4314 CFN III Configuration Manual for details.)

Command permission levels may be changed by using the disk-based configuration program PERM. Disk-based commands are assigned permission levels by the disk-based command SET_PERM.

Permission levels are usually assigned during the initial configuration of the system, but you should verify that the permission levels in use are appropriate for your system. See *How to use permission levels* below for more information.

See MDE-4314 CFN III Configuration Manual if you need more information about assigning permission levels to commands.

Four things determine whether a user has access to a command. They are: the user's permission level, the command's permission level, the position of the Site Controller manager keyswitch (*not available at this time*), and the position of the console keyswitch (if entering commands from a console).

• If a user has a permission level that is equal to or greater than the permission level required for a command, that user may execute that command.

• The manager keyswitch (*not available at this time*) is a way to temporarily increase the users' permission level. The key, when inserted and turned clockwise until it stops, has a permission level associated with it. The manager key permission level is assigned by the disk-based configuration program SYS_PAR, and is usually assigned during the initial configuration of the system.
When the manager key is inserted and fully turned, the permission level associated with the key is in effect for all users, except those users who already have a higher permission level.

• If a user is signed on to a console, the console keyswitch may also raise the user's effective permission level. The permission level associated with each key, when inserted, will be in effect if it is higher than the user's permission level. The key position permission levels are as follows:

Key Position	Permission Level
Check Point:	
OFF	0
ON	1
SUPERVISOR	4
MANAGER	8
Profit Point, 5-position:	
5 (automatically signs on user 2)	user 1's
4 (automatically signs on user 1)	user 2's
3 ON	1
2 SUPERVISOR	4
1 MANAGER	8
Profit Point, 3-position:	
1 ON	1
2 OFF	0
3 MANAGER	8

How to Use Permission Levels

Permission levels can ensure Site Controller security.

Although we refer to user numbers and user permission levels, most sites will not have a separate user ID and sign-on code for each person. Instead, most sites will probably rely on the console or manager's keyswitch to set permission levels for site personnel.

It is probably more appropriate to think of Site Controller users as job functions rather than as individuals. For example, a typical attended site might have separate user IDs for cashier, supervisor, manager, and system configuration and maintenance. The permission levels for each might be as follows:

User Job	User Permission Level
Cashier/Attendant	1
Supervisor	4
Manager	8
Maintenance/Programmer	9

Note that permission levels 1, 4, and 8 are the permission levels assigned by default to the console keyswitch positions.

Ideally, each user should have access to only the commands required for that user's job. This requires careful planning. You must decide what commands each level of user will need to use, and assign permission levels to commands accordingly.

4 – Receipts, Messages, and Date

Date and Time

The system has a battery-back-up clock, and even after a power failure the clock maintains the correct date and time, so you normally will not have to enter the date. The Site Controller does not automatically adjust for daylight-savings time, so you will have to adjust the Site Controller's clock manually if daylight-savings time is observed in your area.

Also, the Site Controller's clock can gain or lose time over a period, just as a watch can. You may need to adjust it periodically. For information on how to enter the date and time or display the date, refer to .

Receipt Heading and Footing

The receipt heading is printed above and the receipt footing is printed below the body of each printed receipt. The information in the receipt heading and footing usually includes the name of the store or gas station, and may also include the address and some other messages, such as **Thank You** and **Please Come Again**.
Note: If your site is connected to a financial network and allows debit transactions, Federal regulations for receipts for electronic funds transfers apply. (These regulations are included in Appendix C: Printed Receipt Regulations.)

New characters for CFN3 : @N and @O
If the characters @N are found, they will be replaced by the customer's name if known. The line will print regardless of whether or not the name has been found.

 If the characters @O are found with the @N, the line will not be displayed unless the customer's name is known.
Note: The card reader device must support track 1 to make use of this feature.

How to Enter Receipt Heading and Footing

Use the command LOAD HEADING or LO H to enter the heading and footing to be printed on the receipt and to enter the form feed length. The heading and footing you load will print on all printers at the site.

The number of receipt heading and footing lines allowed is determined by the Site Controller configuration. Each heading and footing line can have up to 24 characters. The form feed length is the number of blank lines between the last

line of the receipt and the first line of the next receipt.
- Use line number 0 for the form feed length.
- Use 1 through 9 for the heading line numbers; line number 1 is the first heading line, line number 2 is the second heading line, and so on.
- Use the line number plus ten for the footing line number; line number 11 is the first footing line, line number 12 is the second footing line, and so on.
- For credit-card receipts printed by a console, use lines 20-29 to provide space for the customer's signature.

For a blank line, press the space bar and then ENTER after HEADING LINE? One blank line is automatically printed after the heading and one blank line is automatically printed before the footing.

```
LOAD HEADING;C (LO H;C)

R* LOAD HEADING;C ↵
Line number? 1 ↵
Heading line? SMITTY'S STATION ↵
Line number? 2 ↵
Heading line? 10 MAIN STREET ↵
Line number? 3 ↵
Heading line? SMITH,, WA 98000 ↵
Line number? 11 ↵
Footing line? THANK YOU ↵
Line number? 12 ↵
Footing line? PLEASE COME AGAIN ↵
Line number? 0 ↵
Form feed length? 5 ↵
Line number? ↵
R*
```

A single comma terminates an item, so to use a comma in your heading or footing, you must type two commas. You can use the C option with the command LOAD HEADING.

Form feed length is in lines. The user typed two commas on the third heading line. One comma will be printed on the receipt.

Special Printer Functions

If your site has island card readers equipped with the Novatronics or the Star® printers, you can create special effects in your receipts. Use the following special characters to perform the special printer functions. Be aware that other printers, including some stand-alone printers, ignore these characters.

Console and Island Card Reader

{   Begin using expanded print. Must use the back quote key first located in the upper left corner with the ~.

}   End expanded print, return to normal print.

~   Return to beginning of the line with no linefeed. (Only the Novatronics printer will do this.)

\nn   Set left margin to nn spaces.

^	Cut paper here.

Console Only

&&C	Use condensed print (15 chars. per inch).
&&N	Use normal print (12 chars. per inch).
&&E	Use expanded print (7.5 or 6 chars per inch, depending if condensed or normal in effect).
&&U	Use expanded print (return to condensed/normal).
&&L*nn*	Set margin to *nn* (*nn* is one or two digits).
&&V;*text*	Wait for insert, print *text* on inserted slip (check validation) (POS Star stand alone printer only).

The C and N options may be followed by any combination of B or E. B causes the text to be struck twice, giving a bold effect. E puts the print into expanded mode. The curly braces ({}) around the first heading line will cause it to be printed in expanded type on the Novatronics and Star printers. The tilde (~) at the end of the first footing line will cause a carriage return with no linefeed. (Only the Novatronics printer will do this.) The second footing line is the same as the first, so it will overstrike the same characters, causing a bold print effect.

```
LOAD HEADING;C (LO H;C)

R* LOAD HEADING;C ↵
Line number? 1 ↵
Heading line? {SMITTY'S STATION} ↵
Line number? 11 ↵
Footing line? THANK YOU ~ ↵
Line number? 12 ↵
Footing line? THANK YOU ↵
Line number? ↵
R*
```

If you have other types of printers in addition to the Novatronics or Star printers, they will ignore the special characters. That means the first heading line will print normally, and the first two footing lines will be printed on different lines instead of one on top of the other.

How to Print Receipt Heading and Footing

Type: PRINT HEADING (or P H).

```
PRINT HEADING (P H)

R* PRINT HEADING ↵
N.     Heading
0      5 BLANK LINES AT END

1      SMITTY'S STATION
2      10 MAIN STREET
3      SMITH, WA 98000

11     THANK YOU
12     PLEASE COME AGAIN
R*
```

The terminal will display the line number and the text for each heading and footing line. Line numbers 1 through 9 are heading lines, line numbers 11 through 19 are footing lines, 20-29 are for credit-card receipts, and line 0 is the form feed length.

How to Change Heading and Footing Lines

To change one heading or footing line, just use the LOAD HEADING command to enter new text for that line.

To erase all receipt heading and footing lines and reenter new ones, use the command LOAD HEADING;IC. The I option erases all current heading and footing lines and the blank form feed lines at the end. The C option allows you to enter new heading and footing lines.

How to Delete Heading or Footing Lines

1 Type: REMOVE HEADING.

2 Enter Line number.

```
REMOVE HEADING (REM H)

R* REMOVE HEADING ↵
Line number? 2 ↵
R*
```

You can use the C option.

Island Card Reader Messages

The island card reader messages appear on the reader display while it is inactive. You can use these as promotional messages, or as instructional messages that tell your customers how to begin a transaction.

How to Enter Messages

Use the command LOAD MESSAGE or LO ME to enter the messages. The number of messages allowed is determined by the Site Controller configuration; 20 is the default number allowed. Each message can be up to 20 characters long.

For a blank display, press the space bar and ENTER after *Message to display?*. A single comma terminates an item, so to use a comma in your message, you must type two commas. At this time, text surrounded with curly braces does not flash or blink on the reader.

Display Multiple Lines
To display multiple lines, use the C option with the command LOAD MESSAGE. Enter each line separately and specify the display time.

```
LOAD MESSAGES (LO ME)

R* LOAD MESSAGE;C ↵
Message number? 1 ↵
Display in sec? 2 ↵
Message? TRY A HOT SANDWICH ↵
Message number? 2 ↵
Display in sec? 2 ↵
Message? FROM OUR DELI ↵
Message number? 3 ↵
Display in sec? .5 ↵
Message? (space) ↵
Message number? ↵
R*
```

For example, you might want to display the promotional lines "Try a hot sandwich from our deli" and have each line be displayed for 2 seconds. The illustration demonstrates how to enter this information.

Note that message 3 is a blank displayed for half a second.

Multiple Line Display

If the ICRs at your site have multiple line displays, use ~# at the beginning of the message display, where # is the line number. A message that starts ~1 will display on the first line of a multiple line display.

How to Print Messages

Type: PRINT MESSAGE.

```
PRINT MESSAGES (P ME)

R* PRINT MESSAGE ↵

N.      Sec       Message
1       2.00      TRY A HOT SANDWICH
2       2.00      FROM OUR DELI
3       0.50
R*
```

The terminal will display the current message numbers (N.), display times (Sec), and messages.

How to Change Messages

To change one message line, just use the LOAD MESSAGE command to enter new text for that message.

Use the command LOAD MESSAGE;IC or LO ME;IC to erase all messages and enter new messages. The I option erases all current messages. The C option allows you to reenter more than one message at a time.

How to Load Messages

Use the LOad MEssage (LO ME) command in the site controller to load the DPT messages. To access the 4 lines of the Premier display (or 2 lines for a TCS display), use the tilde character (~) and the line #1 (1 to 4) before the message. The display times for messages 1 to 3 should be loaded as 0 seconds; message #4 display time should be greater than 0 seconds. This will allow the messages on all 4 lines to display at the same time instead of one line at a time.

> *Note: If more than 4 messages are loaded (5-10), omit the tilde preceding the text for line 4*
> *and the messages will be scrolled in line 4 of the display.*

If desired, the message can also be configured to flash by enclosing the message text to flash in braces { }. For example in the string PRESS {PAY INSIDE}, PAY INSIDE would flash. Using flash the text line for message 1 in the example above would read:

```
Message? ~1{WELCOME TO JOE'S}↵
```

```
R* LO ME;C ↵
Message number? 1 ↵
Display in sec? 0 ↵
Message? ~1WELCOME TO JOE'S ↵
Message number? 2 ↵
Display in sec? 0 ↵
Message? ~2TODAY'S SPECIAL IS ↵
Message number 3: 3 ↵
Display in sec? 0 ↵
Message: ~310W30 OIL ↵
Message number? 4 ↵
Display in sec? 9 ↵
Message? ~4HAVE A NICE DAY!↵
Message number? ↵
R*
```

If GASBOY ICRs are on a site along with DPTs, the DPT messages are usually loaded as described in the previous example. If the GASBOY ICRs will be communicating on the console loop, the broadcast messages will not be displayed on them. The GASBOY ICRs will display the message that is on the reader program under step-type 1, which is usually **Slide card** or **Insert card**.

How to Delete Messages

1 Type: REMOVE MESSAGE.

2 Enter message line number.

```
REMOVE MESSAGES;C (REM ME;C)

R* REMOVE MESSAGE;C ↵
Message number? 1 ↵
Message number? 5 ↵
Message number? ↵
R*
```

You can use the C option with REMOVE MESSAGE.

5 – Fuel Products

When you are creating products, you must make several choices about how you will set up your products, tanks, and price codes. Things to remember include:
- Fuel products are usually in category 1 or categories 1 and 2.
- The command LOAD FUEL lets you assign the product code, price code, and tank number that will be used for a transaction. The command does this by letting you assign a product code, price code, and tank number to a hose.
- When fuel is pumped, the price charged is determined by the price code assigned to the hose by LOAD FUEL. You do not need to assign a price to the product itself.
- A product is also assigned to a tank by LOAD TANK. The product you assign this way is used only for the PRINT TANK report; it is not used for transactions. To avoid confusion, you should usually assign the same product to a tank with LOAD TANK that is assigned with LOAD FUEL.
- If you charge different prices for the same type of fuel, you may want to create different products in the system with the LOAD PRODUCT command. For example, if you have a bulk diesel pump that has a different price from diesel at the other pumps, you may want to set up a separate bulk diesel product. Or, if you have some pumps on the system that are full serve, you may want to set up separate full-serve and self-serve products.
  (Creating different products from the same fuel allows you to separate the products in reports. If you do not want to separate them in reports, you can use the LOAD PRICE command to create different price codes for the same fuel.)
- You normally do not need to use inventory tracking for fuel products. Use Tank inventory.

How to Add or Change Fuel Products

Use the following procedure to add a new product:
- Make sure the product information has been initialized with REMOVE PRODUCT;A. Do not use this command if you have already loaded product information into the system; it will clear all product information.
- Create a new product with LOAD PRODUCT;A. The product codes are used to assign products to tanks and for fuel authorizations for proprietary cards. They are included in the transaction data, and in the product, sales, and totals reports. Each product is assigned a product code, product name, category.
- The low price and high price are not used for fuel products. The tax code for fuel products is currently ignored (no tax), as taxes are included in the price.
- Assign products to pumps or hoses with LOAD FUEL. Price codes are also assigned to pumps or hoses with this command.

How to Initialize Fuel-product Information

Before you enter products for your system, you must initialize the product information.

> ### CAUTION
>
> This procedure removes all product information for fuel and merchandise products..

Type: REMOVE PRODUCT;A
(or REM PRO;A)

```
REMOVE PRODUCT;A (REM PRO;A)

R* REMOVE PRODUCT;A ↵
R*
```

 The A option erases all current product codes, names, and inventory and price information.

How to Create a New Fuel Product

Use the command LOAD PRODUCT;A or LO PRO;A to create a new product. The command without the A option changes an existing product. If you use the command without the A option and name a product that does not already exist, the terminal will print an error message.

1 Type LOAD PRODUCT.

2 Enter Product Code.

3 Enter Category.

4 Enter Product Name.

5 Enter Minimum Price.

6 Enter Maximum Price.

7 Enter Taxes.

```
LOAD PRODUCT;A (LO PRO;A)

R* LOAD PRODUCT;AC ↵
Product code? 1 ↵
Category? 1 ↵
Product name? REGULAR ↵
Minimum price? 0 ↵
Maximum price? 0 ↵
Taxes? 0 ↵
Product code? ↵
R*
```

You may use the C option with the command LOAD PRODUCT;A.

- The product code is used in transaction and pump printouts, and can be used for sorting printouts. Up to 99 products or departments are allowed. Fuel products are usually 1-10 or 20-29, with 30 and above for merchandise products. If you are using a Profit Point POS, the department # is used as a base for the PLU file.
- The category is used for grouping products. For example, you could have fuel and merchandise categories. Category 1 is usually used for fuel products. You can print out specified categories with PRINT TOTALS, PRINT SALES, and PRINT PRODUCT.
- The product name is displayed on consoles and optionally, island card readers, and is printed on receipts and sales and product reports. It can be up to 12 characters long. Not all characters may print, so do not make the first digits of any two names the same or you will not be able to differentiate between them on reports.
- The minimum price and maximum price are used for products that allow price override. For fuel products, they should both be 0.
- The tax code specifies which tax table to use for calculating taxes for a product. Taxes for fuel products are included in the price. If no taxes are to be added to the product, specify tax code 0.

How to Change Fuel-product Information

Type: LOAD PRODUCT.

```
LOAD PRODUCT (LO PRO)

R* LOAD PRODUCT ↵
Product code? 1 ↵
Category? 1 ↵
Product name? DIESEL ↵
Minimum price? 0 ↵
Maximum price? 0 ↵
Taxes? 0 ↵
R*
```

Note: Do not use the A option.

How to Print Fuel-product Information

Use the command PRINT PRODUCT or P PRO to print the current product data. You can specify a range of products to print or, with the I option, you can specify a category to print.

The example below shows all products in category 1, which is the category usually used for fuel products. No high price has been entered, as is usual for fuel products, so the printout shows —***No Override***—. The 0.00 under Price means the pump price comes from the price table and is assigned with the LOAD FUEL command.

```
                         PRINT PRODUCT (P PRO)

R* PRINT PRODUCT;I 1↵
Pr Cat   Product          Inventory Reorder Low price High price Price Taxes
1   1    Regular                  0       0        -No Override-     0.00  None
2   1    Unleaded                 0       0        -No Override-     0.00  None
3   1    Premium                  0       0        -No Override-     0.00  None
4   1    Diesel                   0       0        -No Override-     0.00  None
R*
```

You can also use product ranges with PRINT PRODUCT to print specified product numbers. For example, the command PRINT PRODUCT 1-4 prints the information for products 1 through 4.

How to Remove a Fuel-product

Type: REMOVE PRODUCT.

```
REMOVE PRODUCT (REM PRO)

R* REMOVE PRODUCT ↵
Product code? 1 ↵
R*
```

You may use the C option with REMOVE PRODUCT.

Fuel Product Inventory

Product inventory is initially disabled. You may want to keep it disabled for fuel products, and just use the tank inventory, or you may want to enable product inventory so that inventory information for fuel products appears in the product information printout.

If you have the same product assigned to more than one tank, the inventory information in the product printout can be the total for all the tanks. If you have more than one product assigned to one tank (such as diesel sold at two different prices), the inventory information in the product printout will not be very meaningful, so you should probably not enable inventory in this case.

When you use the commands ADD TANK and SUBTRACT TANK, the inventory for the corresponding products is also adjusted if inventory recording is enabled. However, the ADD INVENTORY and SUBTRACT INVENTORY commands do not adjust the tank inventory, since more than one tank could be assigned the same product. This means that it is better to use the TANK commands to adjust inventory for fuel products.

The LOAD TANK command does not adjust the inventory for products, so enter 0 for the inventory when you do the LOAD TANK and use ADD TANK to enter the inventory amount when inventory is enabled.

When the commands ADD or SUBTRACT TANK or INVENTORY are executed, the amount added or subtracted is logged.

If the site has tank gauges, the gauges can be set up to adjust product inventory, but such an arrangement is not required by the Site Controller.

How to Enter Fuel-product Inventory

Type: LOAD INVENTORY.

```
LOAD INVENTORY (LO IN)

R* LOAD INVENTORY;C ↵
Product? 1 ↵
Quantity? 4300 ↵
Reorder level? 1000 ↵
Product? 3 ↵
Quantity? 2900 ↵
Reorder level? 800 ↵
Product? ↵
R*
```

When inventory goes below the reorder level a message is printed on the log printer.

When the product inventory and tank figures do not match, one use of the LOAD INVENTORY command is to set the book inventory to equal the physical inventory.

6 – Tank and Pump Commands

Tank Commands

How to View Current Tank Inventory

To display the tank inventory for all tanks, use the command PRINT TANK or P TA. The terminal will display the tank number (T#), total quantity (Totals), and reorder level.

In addition, if a CFN-compatible tank monitor system (electronic tank gauge) is installed on the tank and connected to the Site Controller, then the measured tank quantities and tank ullage will be displayed. Ullage is the amount of remaining space or unused capacity in the tank.

```
                          PRINT TANK (P TA)

R* PRINT TANK ↵
T#    Product    Total       Reorder     Gauge     Diff    %      Temp     Ullage
1     Regular    5000.000    5000.000    4995      5       0.1    65.2     5005
2     Unleaded   6240.000    5000.000    6240      0       0.0    65.2     3760
3     Diesel     19840.000   8000.000    19844     4       0.1    65.2     156
4     Premium    10000.000   5000.000    9999      1       0.1    65.2     1
R*
```

T#	Tank number of tank.
Product	Name of product stored in tank.
Total	Inventory quantity in tank.
Reorder	Reorder level at which a warning message will be logged.
Gauge	Measured quantity in tank according to tank monitoring system (TMS).
Diff	Difference between inventory and measured quantities.
%	Difference expressed as a percentage over or short.
Temp	Measured temperature as reported by the TMS. Used by the TMS to compute temperature-corrected gallons.
Ullage	The amount of usable empty space remaining in the tank.

How to Add to and Subtract from Tank Inventory Counters

If a tank monitoring system (TMS) is present, the site can be configured to automatically add deliveries that are detected by the TMS to the inventory totals. If your site has this capability, you will not need to add deliveries to inventory manually and to do so will produce an error in the totals.

You might wish to make this adjustment if a physical measurement of the fuel

gives a result more or less than the amount indicated by the counter, in order to bring the perpetual inventory amount back into line with the physical inventory amount.

If product inventory is enabled (see set tank inventory counter), ADD or SUBTRACT TANK will adjust the inventory for the corresponding product. The C option is avaiable for both commands.

Add Tank

1 Type: ADD TANK.

2 Enter Tank Number.

3 Enter Quantity.

```
ADD TANK (AD TA)

R* ADD TANK ↵
Tank number? 14 ↵
Quantity? 5000 ↵
R*
```

The amount added is logged.

Subtract Tank

1 Type: SUBTRACT TANK

2 Enter Tank Number.

3 Enter Quantity.

```
SUBTRACT TANK (SUB TA)

R* SUBTRACT TANK ↵
Tank number? 2 ↵
Quantity? 100 ↵
R*
```

The amount added is logged.

How to Set Tank Inventory Counters

Use the command LOAD TANK or LO TA to set the Site Controller tank inventory counters equal to the amount of fuel in the tanks. The quantity should be in the same units (gallons or litres) that the pumps use. The Site Controller tank inventory counters decrement each time fuel is pumped.

The product code entered with the LOAD TANK command associates the tank with a product so inventory updates for that product can be done when the commands ADD TANK and SUBTRACT TANK are used. Inventory updates

for products are done only if inventory keeping is enabled for the products, but inventory is always kept for tanks.

You can specify a product and reorder level with the LOAD TANK command. When the tank inventory level dips below the specified reorder level, the message *Tank #xx Below reorder level* is printed on the log printer. An asterisk (*) next to the totals in the printout of the PRINT TANK command shows that the tank is below the reorder level.

The command LOAD TANK does not update the inventory for products, because there could be more than one tank with the same product. If you want to keep track of inventory for products, use the LOAD TANK command to enter the tank information, but enter 0 for the inventory level. Then use ADD TANK to enter the current inventory level.

When the ADD or SUBTRACT TANK commands are executed, the amount added or subtracted is logged.

The product codes entered with the LOAD TANK command affect inventory, but do not affect transactions. The product codes and tank numbers entered with the LOAD FUEL command are the ones that are used for transactions.

1 Type: LOAD TANK.

2 Enter Tank number.

3 Enter Quantity.

4 Enter Product code.

5 Enter Reorder level.

```
LOAD TANK (LO TA)

R* LOAD TANK ↵
Tank number? 1 ↵
Quantity? 30000 ↵
Product code? 1 ↵
Reorder level? 5000 ↵
Tank number? ↵
R*
```

Use the C option to load more than one tank.

Method-of-payment Pricing

Some sites want to charge different prices for fuel products depending on what sort of payment is offered. For example, the cash price for unleaded gasoline might be lower than the credit price.

The Site Controller stores these multi-level prices in a special table in its memory called the price table. Price codes are arbitrary numbers assigned to fuel products or hoses to link those fuels or pump table entries to entries in the price table.

The command PRINT PRICE (see below) allows you to see the prices that have been assigned to existing price codes. Then the command LOAD PRICE can be used to change them.

When pumps and fuel products are first set up on the system, price codes can be assigned directly to pumps and hoses using LOAD FUEL (the standard method for fuels).

Price codes assigned with LOAD FUEL appear in the PRINT PUMP report, not in PRINT PRODUCT.

After prices have been initially set up, in almost all cases prices for fuel products will be changed with the LOAD PRICE command, rather than with the LOAD PLU or LOAD PRODUCT commands that are normally used with merchandise.

Price Code Levels

If the pump used for a transaction has a price code assigned to it, then that price code is used, even if another price look up happens to be assigned to the product. The price charged is determined at the time of the transaction by the customer's method of payment. Each price code can have multiple levels of prices, one for each method of payment that is accepted.

The Site Controller uses a number to refer to each price level. These numbers are fixed and cannot be changed. Values for particular price levels, such as debit and proprietary card, need to be loaded for particular price codes only if that method of payment is accepted for the product or pump assigned to that price code.

Level 0   Price level 0 is the default fallback price (though the Site Controller can be configured for a different fallback price level). This is the price that is displayed on the pump. If no price is loaded for one of the other price levels, transactions that would normally be charged at that level will be charged at the fallback price.
If you use only one price level, load only price level 0. Price level 0 must be loaded for every price code that is used.

Level 1   Price level 1 is the cash price. It is charged when the CASH key on the console is pressed.

Level 2   Price level 2 is the credit price. It is charged when the CREDIT key on the console is pressed or a credit card is run through the console card reader or an island card reader.

Level 3   Price level 3 is the debit price. It is charged when the DEBIT key on the console is pressed or when a debit (automated teller) card is run through the console card reader or an island card reader.

Additional price levels, referred to as club prices, are available for use with proprietary cards. If a price level is encoded on a proprietary card, that price will be charged. If no price level is encoded on proprietary cards, the credit price will be charged.

Note: You must always load a price for at least level 0 for every price code you use. The pump will be disabled if you do not load a fallback (level 0) price.

How to View Current Price Code Levels and Prices

Use the command PRINT PRICE or P PR. The terminal will display the price levels (Pl) and prices for each price code (Pc). Price codes are rows and price levels are columns.

Type: PRINT PRICE.

```
PRINT PRICE (P PR)

R* PRINT PRICE ↵
Pc       Pl      Price
1        0       1.169       1   1.169      2   1.199
2        0       1.229       1   1.229      2   1.299
3        0       1.299       1   1.299      2   1.306
R*
```

To specify price codes to display enter the code number at the command.

```
R* PRINT PRICE 1 ↵
Pc       Pl      Price
1        0       1.169       1   1.169      2   1.199
R*
```

How to Enter Price Code Levels and Prices

Use the command LOAD PRICE or LO PR to enter price levels and prices for price codes. The number of price levels and prices allowed is determined by the Site Controller configuration.

If you are changing prices while the site is open for business, first shut down the site with the command STOP. This will allow transactions in progress to finish, but prevent new transactions from starting while you are changing prices. When you have finished changing prices, use the command RUN to restart the site.

```
LOAD PRICE (LO PR)
R* LOAD PRICE ↵
Price code? 2 ↵
Price level? 1 ↵
Price? 1.119 ↵
Price level? ↵
R*
```

How to Change Price-code Prices

It is a good idea to write down or print existing prices before making changes, and again after making changes to check your work.

To change prices for a price code, use LOAD PRICE or LO PR to enter new prices for the price levels for that price code.

There are two methods for changing prices for price codes.

The first method is to enter the new price for each price code and price level that you wish to change. This method uses LOAD PRICE;C command.

```
R* LOAD PRICE;C ↵
Price code? 1 ↵
Price level? 0 ↵
Price? 1.149 ↵
Price level? 1 ↵
Price? 1.169 ↵
Price level? 2 ↵
Price? 1.199 ↵
Price level? ↵
Price code? ↵
R*
```

.
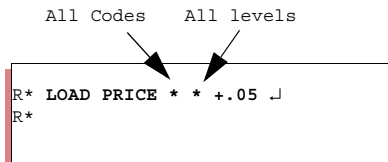
The other method is to enter the amount of the price change as a quantity to be added to or subtracted from the old price. This method can be used to raise or lower either all price levels of one price code or all price codes by a specified amount.

The form for the second command is LOAD PRICE *code level change* where:
- *code* is replaced by the price code(s) to be changed (either a number or * for all price codes),
- *level* is replaced by the level(s) to be affected (either a number or * for all levels),
- *change* is replaced by a + or - sign and the amount of the change in dollars and cents.

This example raises all prices for all codes (indicated by the first asterisk after LOAD PRICE) and all levels (the second asterisk) by five cents.

```
       All Codes    All levels

R* LOAD PRICE * * +.05 ↵
R*
```

This next example subtracts two cents from all levels in price code 3.

```
R* LOAD PRICE 3 * -.02 ↵
Price level ? ↵
R*
```

Note: LOAD PRICE;I erases all price levels and price code prices for all pumps that have been assigned price codes. **This will disable all pumps.** *You must re-enter new prices for all price codes and re-enable all pumps with ENABLE PUMP after you use this command.*

How to Delete a Price Code or Price Level

Use the command REMOVE PRICE or REM PR to delete one or more price levels for a given price code.

```
REMOVE PRICE (REM PR)

R* REMOVE PRICE ↵
Price code? 4 ↵
Price level? 3 ↵
Price level? ↵
R*
```

To delete an entire price code, delete all the price levels under that price code.
Use the C option to remove more than one price code.

How to Set Up Day-Night Pricing

You can have day-night pricing by using the RECORD command or one of the editors to create command files that contain the LOAD PRICE commands for the day and night prices. Then the command files can be executed automatically at the appropriate times by loading the proper *cron* (user-defined commands executed at specified times) entries with LOAD CRON. (See .)

```
R* TYPE PRC1.CMD ↵
stop
lo pri;c
1 0  .799 1  .759 2  .799
2 0  .859 1  .819 2  .859
3 0  .919 1  .879 2  .919
4 0 1.069 1 1.029 2 1.069

run

R* TYPE PRC2.CMD ↵
stop
lo pri;c
1 0 1.279 1 1.239 2 1.279
2 0 1.339 1 1.299 2 1.339
3 0 1.459 1 1.419 2 1.459
4 0 1.179 1 1.139 2 1.179

run

R*
```

The example above shows two command files used for changing the pricing for day-night pricing.

Pump Commands

How to Assign Products, Prices, and Tanks to Hoses

Use the command LOAD FUEL or LO FU to enter the product code, price code, and tank number to be assigned to each pump, or to each hose for multi-product dispensers (MPD®).

Pumps that dispense the same product may be assigned different price codes. For example, a full-service pump that dispenses unleaded regular fuel may be assigned a different price code than a self-service pump that dispenses the same fuel. Price levels and prices are assigned to price codes with LOAD PRICE.

The LOAD FUEL command allows you to specify different products, prices, and tanks for each hose on a pump. If the system uses MPDs, a pump is one side of the MPD. That is, each dollar and gallon display corresponds to one pump. For regular dispensers and pumps, there is one hose per pump. The pump, not the hose, is authorized for transactions.

The number of pumps and associated hoses in the system is determined by the Site Controller configuration.

You may use the C option with the command LOAD FUEL.

```
LOAD FUEL (LO FU)

R* LOAD FUEL ↵
Pump number? 13 ↵        Number of pump, dispenser or MPD
Hose number? 1 ↵         Number of MPD hose, all others enter 1
Product code? 1 ↵       Code created with LOAD PRODUCT
Price code? 1 ↵          Price code created with LOAD PRICE
Tank number? 1 ↵        Number of fuel tank used by LOAD TANK
Hose number? 2 ↵
Product code? 2 ↵
Price code? 2 ↵
Tank number? 2 ↵
Hose number? ↵
R*
```

You can set up MPDs all at once by entering an asterisk when prompted for the pump number.

How to View Pump Information

The PRINT PUMP or P PU command displays information for each pump. If MPDs are used, PRINT PUMP displays the information for each hose under each pump. Hose numbers are not displayed, but the information under each pump is in order by hose number.

```
                        PRINT PUMP (P PU)

R* PRINT PUMP ↵
P#    T#   Pr  Pc  Price     Totals      $Total  Rate    Limit   Slow
1     1    1   1   0.799    178.770     181.10  100/$   $30     0.500
      2    2   2   0.859    360.716     322.74                          Pumping
      3    3   3   0.919    740.360     741.94
2     1    1   1   0.799     84.110      66.44  100/$   $30     0.500   Down
      2    2   2   0.859      2.140       1.83
      3    3   3   0.919    462.540     494.42
3     3    3   3   0.919    353.044     357.14  100/$   $30     0.500
4     4    4   4   1.069    336.634     349.97  100/$   $30     0.500   Pumping
5     1    1   1   0.799   7019.954    6722.35  100/G   $500    0.500
6     2    2   2   0.859    503.411     548.22  100/G   $30     0.500   Pumping
7     3    3   3   0.919    464.840     578.71  100/G   $30     0.500
8     4    4   4   1.069    778.470     804.44  100/G   $30     0.500
                              =========   =========
                              11284.99   11169.30
R*
```

P#	The pump number is the number of the pump, dispenser, or MPD (in the above example, pumps 1 and 2 are MPDs).
—	The hose number is not displayed, but is used to determine the order in which hose information for an MPD is displayed (pumps 1 and 2 have three hoses). For other pumps and dispensers, the hose number is 1.
T#	The tank number is the number of the fuel storage tank drawn upon by that hose.
Pr	The product code is the number of the product assigned to the hose with LOAD FUEL. Use PRINT PRODUCT to view the product names that correspond to the numbers.

Pc	The price code controls what prices will be charged for each method of payment such as cash or credit. It is the code entered with LOAD FUEL.
Price	The price is the current fallback value assigned to the price code with LOAD PRICE. (The fallback price is defined in this chapter under **Price codes**.)
Totals	The quantity totalizer is the cumulative quantity pumped for the hose. These totalizers will roll over periodically when all 9s are displayed.
$Totals	The dollar totalizer is the cumulative dollar sales for the hose. Dollar totalizers will also roll over periodically.
Rate	The pulser rate is the number of pulses produced per unit of measure, such as gallons. It applies only to fuel products, and is an accurate way of measuring flow. $ means that dollars are being counted, L means that liters are being counted, and G means that gallons are being counted.
Limit	The fill limit is the amount automatically requested, unless overridden, when a customer asks for a fill. (The limit assigned to privately issued cards can be different than the hose fill limit.)
Slow	The slow flow cutoff point determines how soon before reaching a limit or preset amount the slow pump mode is activated. The purpose of slow flow cutoff is to prevent the pump from coasting past the preset amount or limit. Slow flow cutoff point is always specified in gallons or liters.

The last column, pump status, which has no heading, shows the current status of the hose.

Down	The pump is out of service. The commands PRINT DIAGNOSTICS 2 and PRINT DIAGNOSTICS 8 give more diagnostic information about pump control units and pumps, respectively.
Pumping	The pump is currently activated. The command PRINT TIP gives more information on transactions in progress.
Reader	If this appears for any length of time, the pump is stuck. Type ENABLE PUMP;A followed by the pump number.
Console	If this appears for any length of time the pump is stuck. Type ENABLE PUMP;A followed by the pump number.
Disabled	You have run the DISABLE PUMP command, no price has been entered in the Site Controller, or the pulser has developed a problem.
Ful Srv	The pump is in full-serve mode. It will pump any time the hose is taken off-hook. To get a pump out of full-serve mode, type DEACTIVATE PUMP;A followed by the pump number.
—	The pump is idle.

The A option with PRINT PUMP displays the values of the pump totalizers, as of the end of the previous shift. (These values are updated whenever the commands LOAD SHIFT, NEXT SHIFT, RESET TOTALS, and NEXT DAY are run.)

The first seven columns with the A option are identical to the PRINT PUMP display. The two columns on the right display each pump's quantity and dollar totals at the time the shift change occurred; these two columns are not totaled.

```
R* PRINT PUMP;A ↵
P#   T#   Pr   Pc    Price    Totals         $Total      Q Previous   $ Previous
1    1    1    1     0.799    178.770        181.10      29.700       23.73
     2    2    2     0.859    360.716        322.74      22.600       19.41
     3    3    3     0.919    740.360        741.94      45.500       41.81
2    1    1    1     0.799     84.110         66.44       0.000        0.00
     2    2    2     0.859      2.140          1.83       0.000        0.00
     3    3    3     0.919    462.540        494.42      10.000        9.19
3    3    3    3     0.919    353.044        357.14      20.000       18.38
4    4    4    4     1.069    336.634        349.97       0.000        0.00
5    1    1    1     0.799   7019.954       6722.35      55.900       44.66
6    2    2    2     0.859    503.411        548.22      33.700       28.95
7    3    3    3     0.919    464.840        578.71      15.500       14.24
8    4    4    4     1.069    778.470        804.44      44.000       47.03
                              ========       ========
                              11284.99       11169.30
R*
```

How to Set Pump Totalizers

1 Type: LOAD PUMP.

```
LOAD PUMP (LO PU)

R* LOAD PUMP ↵
Pump number? 1 ↵
Hose number? 1 ↵
Quantity? 5624.8 ↵
$ amount? 3217.95 ↵
Hose number? ↵
R*
```

2 Enter Pump number.

3 Enter Hose number.

4 Enter Quantity.

5 Enter the dollar amount.

How to Reset Pump Totalizers

1 Type: RESET PUMP.

```
RESET PUMP (RE PU)

R* RESET PUMP ↵
Verify (y/n)?  y ↵
R*
```

2 Verify? Enter yes or no.

How to Enter Pump-Fill-Limit and Slow-to-Cutoff

The fill limit is the amount the Site Controller will authorize, or request authorization for, if a customer requests a FILL by pressing that key on the card reader. (If you use privately issued cards, the limit assigned to the cards will be used instead.)

The fill limit can be in (units/liters) or dollars. Use a dollar sign ($) before the fill-limit amount to specify a dollar limit.

The slow-to-cutoff point determines how soon before reaching a limit the slow-pump mode is activated. The slow-to-cutoff point is in gallons prior to the limit.

A default cutoff point and fill limit for all pumps is determined by the Site Controller configuration. LOAD CUTOFF overrides the default limit. If the default limit is okay for a pump, you do not need to enter a new limit.

1 Type: LOAD CUTOFF.

```
LOAD CUTOFF (LO CU)

R* LOAD CUTOFF ↵
Pump number? 1 ↵
Fill limit? $50 ↵
Slow cutoff? .25 ↵
R*
```

2 Enter Pump number.

3 Enter Fill limit.

4 Enter Slow cutoff.

 There is also a maximum limit that is set in the Site Controller configuration. You cannot exceed the Site Controller's maximum limit with LOAD CUTOFF. You may use the C option with the command LOAD CUTOFF.

Configure all pumps at once by entering an asterisk for the pump number.

7 – Merchandise Products

When you are creating products, you must make several choices about how you will organize your system and how you will handle pricing. Things to consider include:
- Do you want inventory levels shown in the product printout?
- Do merchandise products represent individual items, departments, or some of each?
- Will the system use fixed prices or manually entered prices, or some of each? Will user override be allowed for fixed prices?

How to Add or Change Merchandise Products

Use the following procedure to add a new product.
- Make sure the product information has been initialized with REMOVE PRODUCT;A. *Do not* use this command if you have already loaded product information into the system; *it will clear all product information*.
- Create a new product with LOAD PRODUCT;A. Each product is assigned a product code, product name, category. If price override is allowed, or if prices are to be entered at the time of the sale, products are assigned a low and high price.
- Use LOAD PLU to enter price look ups for products that have default or non-overridable prices.
- Use LOAD INVENTORY to enter the initial number of items or dollar inventory amount for products that will use inventory tracking. For dollar inventory, use ENABLE PRODUCT and specify type 4.

How to Create a New Merchandise Product

Use the command LOAD PRODUCT;A or LO PRO;A to create a new product. The command without the A option changes an existing product. If you use the command without the A option and name a product that does not already exist, the terminal will print an error message.

You may use the C option with the command LOAD PRODUCT;A.

```
LOAD PRODUCT;A (LO PRO;A)

R* LOAD PRODUCT;AC ↵
Product code? 10 ↵
Category? 2 ↵
Product name? MILK ↵
Minimum price? .45 ↵
Maximum price? 3.00 ↵
Taxes? 0 ↵
Product code? 11 ↵
Category? 3 ↵
Product name? SODA ↵
Minimum price? .30 ↵
Maximum price? 2.00 ↵
Taxes? 1 ↵
Product code? ↵
R*
```

- The product code is used to add merchandise products to a sale when the product does not have its own key on the console. It can also be used for sorting printouts. Up to 99 products are allowed, including fuel and merchandise products.
- The category is used for grouping products. For example, you could have fuel and merchandise categories. You can print out specified categories with PRINT TOTALS, PRINT SALES, and PRINT PRODUCT.
- The product name is displayed on consoles and is printed on receipts and sales and product reports. It can be up to 12 characters long. Visually only the first 5 digits are displayed in printouts, so do not make the first 5 digits of any two names the same or you will not be able to differentiate between them on reports.
- The minimum price and maximum price are used for products that allow price override. If override is not allowed, enter 0 for the maximum price.
- The tax code specifies which tax table to use for calculating taxes for a product. Tax tables are loaded in the Site Controller configuration or by TAX.BIN. (The actual tax names are loaded with LOAD TAX.)

How to Create Special Merchandise Products

You can create special products for keeping track of cash withdrawals, refunds, bottle deposit refunds, and such. These are not real products, but they allow you to have information about cash withdrawals and refunds included in your product and sales reports.

To create a cash withdrawal or refund product:

```
ENABLE PRODUCT (E PRO)


R* LOAD PRODUCT;A ↵
Product code? 20 ↵
Category? 9 ↵
Product name? Refund ↵
Minimum price? .01 ↵
Maximum price? 150.00 ↵
Taxes? 0 ↵
R* ENABLE PRODUCT ↵
Product code? 20 ↵
Type ? 1 ↵
R* LOAD PRODUCT;A ↵
Product code? 21 ↵
Category? 9 ↵
Product name? Withdr ↵
Minimum price? .01 ↵
Maximum price? 150.00 ↵
Taxes? 0  ↵
R* ENABLE PRODUCT ↵
Product code? 21 ↵
Type ? 3 ↵
R*
```

- Use LOAD PRODUCT;A to create a new product. Special products should be in their own category so they can be printed out separately.
- Give the product a descriptive name, such as WITHDR or REFUND.
- For cash-withdrawal special products, the minimum and maximum prices are the minimum and maximum amounts that can be withdrawn in one transaction.
- For refund special products, the minimum and maximum prices are the minimum and maximum amounts for a refund.
- Special products do not normally have taxes.
- You do not need to enter inventory or prices for special products.
- Use ENABLE PRODUCT to make the product a special product. Specify type 3 for a cash withdrawal product, type 2 for a payout product, or type 1 for a refund product (see Table 1 on page 56).

How to Print Merchandise Product Information

Use PRINT PRODUCT;A or P PRO;A to print a list of product attributes for each product. You may specify a range of products to print. You can use the I option to specify categories rather than products.

```
R* PRINT PRODUCT;AI 37↵
Pr Cat     Name         Enabled
24 37      Chips        5
25 37      Candy        5
26 37      Snakes       5
R*
```

Whenever a LOAD FUEL command is executed, a bit is set to indicate that this is a fuel product. The bit is displayed as type 8 in PRINT PRODUCT;A. The bit is not unset if a subsequent LOAD FUEL changes the product.

Table 1 shows the product attributes that may be enabled.

Table 1: Product Attributes

Number	Meaning
9	Use category number as the department number in the journal. This is useful in putting several products into the same department for disk-journal reports.
8	This is the fuel product.
7	Low inventory is indicated by an asterisk in PRINT PRODUCT.
5	Inventory tracking was enabled with ADD INVENTORY or ENABLE PRODUCT.
4	Inventory is in dollars, not units (enabled with ENABLE PRODUCT).
3	Product is a special cash-withdrawal product (enabled with ENABLE PRODUCT).
2	Product is a special payout product (enabled with ENABLE PRODUCT). Note: Payout products assigned to type 2 will subtract from the sales total.
1	Product is a special refund product; cash flow direction is reversed (enabled with ENABLE PRODUCT).
0	Console prompts **Amount**? rather than **Price**?; used for payout special products (enabled with ENABLE PRODUCT).
15	Enables patronage (Buypass only).

How to Change Merchandise Product Information

To change the category, name, maximum or minimum price, or tax codes for a product.

Type: LOAD PRODUCT.

```
LOAD PRODUCT (LO PRO)

R* LOAD PRODUCT ↵
Product code? 10 ↵
Category? 2 ↵
Product name? DELI ↵
Minimum price? .5 ↵
Maximum price? 5.00 ↵
Taxes? 1 ↵
R*
```

Do not use A option.

Change Price Lookup

 Type: LOAD PLU.

You may use the C option with LOAD PRODUCT.

How to Print Merchandise Product Information

Use the command PRINT PRODUCT or P PRO to print the current product data. PRINT PRODUCT prints product codes, names, and inventory and price information entered with LOAD PRODUCT, LOAD PLU, and LOAD INVENTORY.

```
                        PRINT PRODUCT (P PRO)

R* PRINT PRODUCT ↵
Pr Cat   Product      Inventory    Reorder   Low price High price Price Taxes
1  1     Regular         0           0      -No Override-   0.00    None
2  1     Unleaded        0           0      -No Override-   0.00    None
3  1     Premium         0           0      -No Override-   0.00    None
4  1     Diesel          0           0      -No Override-   0.00    None

Pr Cat   Product      Inventory    Reorder   Low price High price Price Taxes
5  2     Cigs         $321.05       100        0.75      1.50       1.20   5
6  2     Tires        $400.00       150       35.00     125.00     98.00   5
7  2     Bread         $21.12        10        0.69       1.10       0.98  None
8  2     Soda         $250.25       110        0.25       0.75       0.45  2
R*
```

You can use ranges with PRINT PRODUCT to print specified product numbers. For example, the command PRINT PRODUCT 5-8 prints the information for products 5 through 8.

```
R* PRINT PRODUCT 5-8 ↵
Pr Cat   Product        Inventory Reorder Low price High price Price Taxes
5  2     Cigs           $321.05    100       0.75      1.50      1.20     5
6  2     Tires          $400.00    150      35.00     125.00     98.00    5
7  2     Bread           $21.12     10       0.69       1.10       0.98   None
8  2     Soda           $250.25    110       0.25       0.75       0.45   2
R*
```

When you specify ranges with PRINT PRODUCTS with the I option, the ranges refer to the category number rather than the product number. This allows you to print only specified categories of products.

```
R* PRINT PRODUCT;I 2 ↵
Pr Cat   Product        Inventory Reorder Low price High price Price Taxes
5  2     Oil             321       100       0.75      1.50      1.20     5
6  2     Tires           400       150      35.00     125.00     98.00    5
7  2     Bread            20        10       0.69       1.10       0.98   None
8  2     Soda            250       110       0.25       0.75       0.45   2
R*
```

How to Remove a Merchandise Product

Type: REMOVE PRODUCT.

```
REMOVE PRODUCT (REM PRO)

R* REMOVE PRODUCT ↵
Product code? 10 ↵
R*
```

You may use the C option with REMOVE PRODUCT.

How to Enter Merchandise Product Price Lookups

Use LOAD PLU or LO PLU to assign prices to products. (PLU stands for price lookup.) Prices assigned with LOAD PLU appear in the PRINT PRODUCT printout. Prices for merchandise products can be overridable or non-overridable. If you have a Profit Point POS, use the PLU price book resident on the Profit Point for PLU pricing. You may use the C option with LOAD PLU.

```
LOAD PLU (LO PLU)

R* LOAD PLU;C ↵
Product? 11 ↵
Price? $1.05 ↵
Product? 12 ↵
Price? $0.98 ↵
Product? 13 ↵
Price? $4 ↵
R*
```

- *Default Price*. You can specify a default price for the product with the LOAD PLU command. The price can be preceded by a dollar sign but it is not needed.
  If you enter a High price with the LOAD PRODUCT command, the user can override the default price within the range of the low and high price fields.
  If you enter 0 as the high price, the console user cannot override the price and the product printout will show -No Override- in the price range fields.
- *Manually Entered Price*. If you do not enter a price for a product, or enter a price of $0, the user must always enter the price within the range of the high and low price fields. If you have a price of $0, you must specify a high price.

Merchandise Product Inventory

Inventory for products is initially disabled. The commands LOAD INVENTORY and ADD INVENTORY enable inventory recording. You may also use ENABLE PRODUCT to explicitly enable inventory recording.

Inventory is normally kept by item. You may specify that inventory be kept as a dollar amount instead. This is also done with ENABLE PRODUCT.

Inventory amounts appear in the PRINT PRODUCT printout. You can use PRINT PRODUCT;A to see if inventory is enabled for product.

How to Enter Merchandise Product Inventory

Use the command LOAD INVENTORY or LO IN to load the initial inventory amounts and the reorder levels for products. Once you have loaded the initial inventory amount, use ADD INVENTORY or SUBTRACT INVENTORY to adjust the inventory. The amount added or subtracted will be logged.

```
LOAD INVENTORY (LO IN)

R* LOAD INVENTORY ↵
Product? 1 ↵
Quantity? 400 ↵
Reorder level? 100 ↵
R*
```

The quantity will normally be interpreted as number of items. If type 4 has been specified with ENABLE PRODUCT, the quantity will be interpreted as a dollar amount. You may use the C option with LOAD INVENTORY.

How to Add to Merchandise Product Inventory

Use the command ADD INVENTORY or AD IN to add to the inventory amount for a product.

```
ADD INVENTORY (AD IN)

R* ADD INVENTORY;C ↵
Product? 2 ↵
Quantity? 500 ↵
Product? 3 ↵
Quantity? 230 ↵
Product? ↵
R*
```

The quantity will normally be interpreted as number of items. If type 4 has been specified with ENABLE PRODUCT, the quantity will be interpreted as a dollar amount. You may use the C option with ADD INVENTORY.

How to Subtract from Merchandise Product Inventory

Use the command SUBTRACT INVENTORY or SU IN to subtract from the inventory amount for a product.

```
SUBTRACT INVENTORY (SU IN)

R* SUBTRACT INVENTORY;C ↵
Product? 2 ↵
Quantity? 300 ↵
Product? 4 ↵
Quantity? 65 ↵
Product? ↵
R*
```

The quantity will normally be interpreted as number of items. If type 4 has been specified with ENABLE PRODUCT, the quantity will be interpreted as a dollar amount. You may use the C option with SUBTRACT INVENTORY.

How to Enable Merchandise Dollar Inventory

To enable inventory recording for a product with dollar inventory rather than item inventory, use ENABLE PRODUCT and specify type 4 (type 4 tracks inventory in dollars, not units). There will be a dollar sign before the inventory amount in the PRINT PRODUCT printout.

```
ENABLE PRODUCT (E PRO)

R* ENABLE PRODUCT ↵
Product Code? 11 ↵
Type? 4 ↵
R*
```

How to Disable Merchandise Inventory Tracking

Inventory tracking is initially disabled. It is enabled automatically when LOAD INVENTORY, ENABLE PRODUCT type 5, or ADD INVENTORY is executed.

```
DISABLE PRODUCT (DI PRO)

R* DISABLE PRODUCT ↵
Product Code? 10 ↵
Type? 5 ↵
R*
```

To disable inventory tracking once it has been enabled, use DISABLE PRODUCT and specify type 5.

8 – Setting Up Tax Tables

The Three Tax Types

There are three tax types on the Site Controller:
- Each sales tax in most areas can be calculated as a percentage of the price of the items to which the tax applies. For all or most tax percentage rates, you are able to simply specify the tax rate and the rounding rule. These taxes are called *type 0* on the Site Controller, and they are the default type.
- Taxes that the law requires to be calculated according to a tax table are *type 1*.
- *Type 2* taxes use a combination of percentage and tax table. The tax on the whole-dollar amount of the price is calculated by multiplying by the tax's percentage rate, and then a table is used to calculate the tax on any remaining fraction of a dollar ($.01-.99) of the price. For example, if the price of an item is $10.45, the tax on $10 would be calculated as a percentage of $10, and the tax on the 45 cents would be looked up on a tax table by the Site Controller.

You can configure the SC III to recognize up to eight different taxes, depending on what the law in your area requires.

Tax Accumulators

The Site Controller can have up to eight tax accumulators, which keep a running total of taxes collected in up to eight categories. Most sites will probably use only one or two. The tax percentages are specified in the Site Controller configuration. Taxes are assigned to products with LOAD PRODUCT. Each time a taxable product is sold, the tax is calculated, charged to the sale, and credited to the correct tax accumulator.

Cumulative tax totals are also maintained. The cumulative tax accumulators are reset by RESET TOTALS;A or RESET TOTALS;I.

How to Enter Tax Accumulator Names

1 Type: LOAD TAX.

```
LOAD TAX (LO TAX)

R* LOAD TAX ↵
Tax #? 3 ↵
Name? Alc.Tx ↵
R*
```

2 Enter Tax.

3 Enter Name (limited to seven characters).

The command LOAD TAX with the I option initializes all tax accumulators. All tax names and amounts are cleared.

How to Print Tax Accumulators

Use the command PRINT SALES;I 0 or P SA;I 0 to print the tax accumulators. This will print the amount in each tax accumulator for each shift or day.

```
                        PRINT SALES;I 0 (P SA;I 0)

R* PRINT SALES;I 0 ↵
- Shift 1 from Thu ll/05/99 8:00 AM to Thu 11/05/99 4:00 PM -
Pr  Cat         Name      Club        Debit       Credit    Cash       Total
T1   0          Sale Tx   0.00        0.00        51.31     49.39      100.70
T2   0          Tob. Tx   0.00        0.00        22.97     31.18       54.15
T3   0          Alc. Tx   0.00        0.00        13.33     16.88       30.21
                          ====        ====        =====     =====      ======
                          0.00        0.00        87.61     97.45      185.06

 - Totals from Sun ll/01/99 8:00 AM to Thu 11/05/99 4:00 PM -
Pr  Cat         Name      Club        Debit       Credit     Cash       Total
T1   0          Sale Tx   26.00       10.50       251.31     489.39     777.20
T2   0          Tob. Tx   10.88        3.55       112.97     231.18     358.58
T3   0          Alc. Tx    4.20        2.77       113.33     116.84     237.14
                          =====       =====       ======     ======     =======
                          41.08       16.82       477.61     837.41     1372.92
R*
```

The product number for taxes is shown as the tax number preceded by a *T*.

How to Reset Cumulative Tax Totals

Cumulative tax totals are automatically reset with other totalizers when the RESET TOTALS;A or RESET TOTALS;I command is run.

Tax as Percentage

If the tax laws in your area allow type-0 tax calculations for all items-and most areas do allow this-you do not need to use this chapter. Instead, refer to the *Tax Rate and Tax Rounding Boundaries* parameters on menu 3 of the CONSOLE configuration program (which is discussed in MDE-4314 CFN III Configuration Manual) for instructions on setting up a type 0 tax.

For each product you define through the LOAD PRODUCT command, you will use CONSOLE to specify the tax that applies. Tax rates are specified in hundredths of a percent. For example, a 7.8 percent tax is specified as 780, though it displays as 7.80.

You can also specify the upward rounding breakpoint, in tenths of a cent (which is hundredths of a dollar). For example, if taxes are to be rounded up at $.005 and down below $.005, you will use CONSOLE to enter a 5 for the tax rounding boundary.

Note that tax rates and tax rounding boundaries are ignored if the tax tables are loaded using the TAX program.

When to Use Tax Tables

Setting up tax tables is a complicated procedure, so use tax tables only if the law in your area requires them. If you are required by your local or state tax laws to use a tax table instead of tax percentages, read through this entire chapter carefully before starting to construct the table; then come back to the beginning of the chapter and start to work.

For each different tax lookup table the law requires you to use, use the TAX program explained in this chapter to build a tax table. The table you build through the TAX program is similar to the kind traditionally used in many point-of-sale (POS) terminals and cash registers.

You may set up 1-8 different taxes using these tables. Determine how many tax lookup tables you need to build. Then for each one, follow the instructions in the remainder of this chapter.

How to Set Up a Tax Table

There are five major steps involved in setting up a tax table:

This chapter explains how to complete all those steps. It also explains how to use TAX to print your tax information and how to update a tax table when tax rates change.

1. Prepare a Compressed Description of Tax Data

If your local taxing authorities require a tax lookup table, Gasboy or your local distributor may already have a compressed (short and concise) description of it. Otherwise, use the instructions in this section to compose a compressed description of each tax table you will use. (An example of a compressed description follows item 7 in the list immediately below.)

1 Obtain a complete tax lookup table from the taxing authorities. Using the instructions in this section, you will examine your tax table and prepare a compressed description of it. Then you will enter the compressed description into the SC III.

2 You will need to determine what type of tax table you are using, type 1 or type 2.
- Type 1 taxes are determined from a lookup table only.
- Type 2 breaks the taxable amount into two parts. The first part is a whole dollar amount, with its tax calculated at a percentage, possibly rounded. The second part of the taxable amount is the remainder after the whole dollar amount is taken out. Its tax is calculated by the table lookup (similar to the type 1 lookup table). The total tax is the sum of the tax on the two parts.

3 Construct a worksheet for the tax table. Include the following columns (refer to the sample graphic that follows):

From	In this column, write the low amount in each range of taxable amounts for which a constant tax amount applies. For example, a customer may pay a tax of $0.03 on any sales amounts from $0.46 to $0.63. You will place $0.46 in the From column for that range.

To	In this column, write the high amount in the range, for example, $0.63 in the example immediately above.
Tax	For each range, write the tax charged on the amounts in the range.
Amt Diff	Subtract the From amount of the preceding range from the From amount of the current range, and write the result in this column.
Tax Diff	Subtract the Tax amount on the preceding row from the Tax amount on the current row, and write the result in this column.

The sample graphic below shows information from a typical tax table. The columns labeled *From*, *To*, and *Tax* correspond to the columns on a tax table like those issued by taxing authorities. The columns labeled *Amt Diff* and *Tax Diff* have been calculated from the tax table information. The Tax Diff is usually a constant. Note that in the sample table, it is always $0.01.

Figure 8-1: Sample Tax Table

From	To	Tax	Amt diff	Tax diff	From	To	Tax	Amt Diff	Tax Diff
0.00	0.09	0.00	-	-	8.10	8.27	0.45	0.19	0.01
0.10	0.27	0.01	-	-	8.28	8.45	0.46	0.18	0.01
0.28	0.45	0.02	0.18	0.01	8.46	8.63	0.47	0.18	0.01
0.46	0.63	0.03	0.18	0.01	8.64	8.81	0.48	0.18	0.01
0.64	0.81	0.04	0.18	0.01	8.82	8.99	0.49	0.18	0.01
0.82	0.99	0.05	0.18	0.01	9.00	9.18	0.50	0.18	0.01
1.00	1.18	0.06	0.18	0.01	9.19	9.36	0.51	0.19	0.01
1.19	1.36	0.07	0.19	0.01	9.37	9.54	0.52	0.18	0.01
1.37	1.54	0.08	0.18	0.01	9.55	9.72	0.53	0.18	0.01
1.55	1.72	0.09	0.18	0.01	9.73	9.90	0.54	0.18	0.01
1.73	1.90	0.10	0.18	0.01	9.91	10.09	0.55	0.18	0.01
1.91	2.09	0.11	0.18	0.01	10.10	10.27	0.56	0.19	0.01
2.10	2.27	0.12	0.19	0.01	10.28	10.45	0.57	0.18	0.01
2.28	2.45	0.13	0.18	0.01	10.46	10.63	0.58	0.18	0.01
2.46	2.63	0.14	0.18	0.01	10.64	10.81	0.59	0.18	0.01
2.64	2.81	0.15	0.18	0.01	10.82	10.99	0.60	0.18	0.01
2.82	2.99	0.16	0.18	0.01	11.00	11.18	0.61	0.18	0.01
3.00	3.18	0.17	0.18	0.01	11.19	11.36	0.62	0.19	0.01
3.19	3.36	0.18	0.19	0.01	11.37	11.54	0.63	0.18	0.01
3.37	3.54	0.19	0.18	0.01	11.55	11.72	0.64	0.18	0.01
3.55	3.72	0.20	0.18	0.01	11.73	11.90	0.65	0.18	0.01
3.73	3.90	0.21	0.18	0.01	11.91	12.09	0.66	0.18	0.01
3.91	4.09	0.22	0.18	0.01	12.10	12.27	0.67	0.19	0.01
4.10	4.27	0.23	0.19	0.01	12.28	12.45	0.68	0.18	0.01
4.28	4.45	0.24	0.18	0.01	12.46	12.63	0.69	0.18	0.01
4.46	4.63	0.25	0.18	0.01	12.64	12.81	0.71	0.18	0.01
4.64	4.81	0.27	0.18	0.01	12.82	12.99	0.72	0.18	0.01
4.82	4.99	0.27	0.18	0.01	13.00	13.18	0.72	0.18	0.01
5.00	5.18	0.28	0.18	0.01	13.19	13.36	0.73	0.19	0.01
5.19	5.36	0.29	0.19	0.01	13.37	13.54	0.74	0.18	0.01
5.37	5.54	0.30	0.18	0.01	13.55	13.72	0.75	0.18	0.01
5.55	5.72	0.31	0.18	0.01	13.73	13.90	0.76	0.18	0.01
5.73	5.90	0.32	0.18	0.01	13.91	14.09	0.77	0.18	0.01
5.91	6.09	0.33	0.18	0.01	14.10	14.27	0.78	0.19	0.01
6.10	6.27	0.34	0.19	0.01	14.28	14.45	0.79	0.18	0.01
6.28	6.45	0.35	0.18	0.01	14.46	14.63	0.80	0.18	0.01
6.46	6.63	0.36	0.18	0.01	14.64	14.81	0.81	0.18	0.01
6.64	6.81	0.37	0.18	0.01	14.82	14.99	0.82	0.18	0.01
6.82	6.99	0.38	0.18	0.01	15.00	15.18	0.83	0.18	0.01
7.00	7.18	0.39	0.18	0.01	15.19	15.36	0.84	0.19	0.01
7.19	7.36	0.40	0.19	0.01	15.37	15.54	0.85	0.18	0.01
7.37	7.54	0.41	0.18	0.01	15.55	15.72	0.86	0.18	0.01
7.55	7.72	0.42	0.18	0.01	15.73	15.90	0.87	0.18	0.01
7.73	7.90	0.43	0.18	0.01	15.91	16.09	0.88	0.18	0.01
7.91	8.09	0.44	0.18	0.01	16.10	16.27	0.89	0.19	0.01

4   Complete your worksheet, indicating the amount differences and the tax differences for each range of taxable amounts.

5   Examine the *Amt Diff* column on the sample worksheet. Note that there is a regular pattern. Five $0.18 taxable amount increments are followed by one $0.19 increment, then there are four $0.18 increments, and one $0.19 increment. This pattern repeats-or loops-itself eight times. Now examine the *Amt Diff* column of your worksheet. Try to find a repeating pattern in the tax amount increments.

6   Find a repeating pattern to the increments in the *Tax Diff* column (it may be that they are always the same, as in the sample).

7   Then find a single repeating pattern that accounts for the increments in both Diff columns. If the increments in the *Tax Diff* column are not all the same, this may be more difficult, and the pattern will almost certainly repeat itself less often. You will use the repeating patterns you find to build the tax table through the TAX program.

To compose your compressed description, write down:
 • The tax number (1-8: defined in configuration).
 • The tax type. For tax tables, it is type 1 or 2.
 • The method for figuring taxes on amounts that exceed the largest amount in the table: you can use a fixed rate with a rounding rule, or you can apply the table to the excess amounts.
 • The tax increment; almost always 1 cent.
 • The smallest taxable amount.
 • The formula for determining the individual entries in the table. You do this by means of three TAX program commands: increment, loop, and end loop.

An increment tells the TAX program an *Amt Diff* and a *Tax Diff* and the number of consecutive times to apply those differences. For example, in the sample worksheet, the first *Amt Diff* is 0.18, and that difference occurs five consecutive times. For the sample table, and for most tax tables, the tax increment is always $0.01.

A loop tells the TAX program to repeat the commands within the loop the number of times you specify. You start a loop with a loop command and end it with an end loop command. So, when two or more increments occur in a repeating pattern, you can describe the repeating pattern in terms of a loop. Loops may be nested-that is, the steps repeated by a loop may include other loops.

An end loop terminates the last loop that was started. Thus, if there are two loop commands and then an end loop, the end loop will terminate the second loop. Another end loop is required to terminate the first loop.

A compressed description of the sample table follows:
- Tax number: 1
- Tax type: 1
- Tax increment: 1 cent
- Smallest taxable amount: $0.10
- Loop 8 times
  Increment taxable amount by $0.18 and tax by $0.01 five times
  Increment taxable amount by $0.19 and tax by $0.01 one time
  Increment taxable amount by $0.18 and tax by $0.01 four times
  Increment taxable amount by $0.19 and tax by $0.01 one time
  End loop

The sample table is a simple example. In your table, you may have a non-repeated sequence of increment commands before the first loop. Or, you may have many loops, or loops within loops. Or, you may have a non-repeated sequence of increment commands at the end of the table, after all loops are ended.

Most tax tables should reduce to a compressed description. However, if you encounter some difficulty, consult your salesman or distributor for help.

2. Allot Storage Space for Your Tax Information

The SC III already has eight records in its storage space for its 1-8 tax rates, and it must create additional records for the information in your tax tables.

When you have a compressed table description, count the additional records it will require. Allow one additional record for each of the following:
- The table beginning.
- Each increment command.
- Each loop command.
- Each end-loop command.
- The end of the table.

After you have prepared a compressed description of all your tax tables, determine the total number of additional records you will need for all of them. Then add eight to your total. This gives the total number of records you need for your tax.

You may use up to 200 records for tax. If your total is larger than 200, consult your ASR or distributor to help you reduce the commands in your compressed descriptions.

When you have determined the number of records you need, use the TABLE program to define the number of records in table number 27, the tax table (refer to MDE-4314 CFN III Configuration Manual for instructions). Be sure your total includes the original eight records required by the SC III and all the additional records required for your tax tables.

3. Assign a Tax Number and Name to Each Table

Use the LOAD TAX command to assign a tax number (1-8) and name for each table you will use. Be sure you also assign a number and name to each of the taxes you want the SC III to calculate as percentages with a rounding factor-that is, those taxes for which you do not need to build a table.

4. Build a Tax Table

The example that follows shows the prompts and user responses to enter the sample table into the SC III. After entering the compressed description, the user requests a printed summary of the table, then quits and saves the table.

Study the sample and compare it with the compressed description to help you see how to use the TAX program.

If you respond with *n* at the *All tax increments one cent* prompt, you will subsequently be prompted for the tax increment amount after each *Increment how many times?* prompt. Otherwise, the command assumes that one cent applies to all increments.

Note that the printed summary is a representation of the commands (increment, loop, and end loop) that defined the table.

The *Loop Level* column shows each loop. A plus sign (+) marks the beginning and end of the loop, and a dashed vertical line extends over the interior of the loop. If there were loops nested within loops, other pairs of plus signs and dashed lines would be printed, indented so they would not overlap.

The *Rec Nbr* column shows the number of each record in the table.

The *Record Type* column lists each command in the table.

The *Apply Times* column shows the number of times the command is to be applied. For increment commands, this means the number of rows for which the specified increments apply. For loops, this means the number of times the commands inside the loop are to be repeated.

The *Amount Increment* column shows the smallest taxable amount, and for the increment commands, it shows the increment from the *Amt Diff* column of the worksheet.

The *Tax Increment* column shows the increment from the *Tax Diff* column of the worksheet.

```
                                    TAX
R* TAX ↵
TAX program.
Enter ? for help.
Table status: size = 20 records, used = 8, available = 12
Tax number, P, P#, T, T#, or Q to quit? 1 ↵
Tax type, Q to quit, RETURN for same? 1 ↵
New calculation number entered.
Initializing new tax calculation table.
Smallest taxable amount (cents)? 10 ↵
Enter command (I, L, E, Q, D, P, M, or S)? L ↵
Loop how many times (0 = until done)? 8 ↵
Enter command (I, L, E, Q, D, P, M, or S)? i ↵
Increment how many times (0 = until done)? 5 ↵
Taxable amount increment (cents)? 18 ↵
All tax increments one cent (Y/N)? y ↵
Enter command (I, L, E, Q, D, P, M, or S)? i ↵
Increment how many times (0 = until done)? 1 ↵
Taxable amount increment (cents)? 19 ↵
Enter command (I, L, E, Q, D, P, M, or S)? i ↵
Increment how many times (0 = until done)? 4 ↵
Taxable amount increment (cents)? 18 ↵
Enter command (I, L, E, Q, D, P, M, or S)? i ↵
Increment how many times (0 = until done)? 1 ↵
Taxable amount increment (cents)? 19 ↵
Enter command (I, L, E, Q, D, P, M, or S)? e ↵
End loop
Enter command (I, L, E, Q, D, P, M, or S)? p ↵

Tax number 1: SALES T
Type 1: table lookup
Loop  Rec Record      Apply    Amount      Tax
Level Nbr Type        Times    Increment   Increment
---- --- -----        -----    ---------   ---------
        1 Initial      -        $0.10       --
+       2 Loop         8        ---         --
|       3 Increment    5        $0.18       $0.01
|       4 Increment    1        $0.19       $0.01
|       5 Increment    4        $0.18       $0.01
|       6 Increment    1        $0.19       $0.01
+       7 End loop     -        -----       -----

Enter command (I, L, E, Q, D, P, M, or S)? q ↵
End table
Table status: size = 20 records, used = 17, available = 3
Save the updated tax table (Y, N, or P)? y ↵
Tax table saved
Table status: size = 20 records, used = 17, available = 3
Tax number, P, P#, T, T#, or Q to quit? q ↵
R*
```

TAX Program: Options and Arguments

You can use several options and arguments with TAX when you initially run the program. The table below shows the options preceded by a semicolon and the arguments preceded by a dash.

To enter an option, type a semicolon, then the option letter. To enter an argument, type a space, then a dash, then the argument character. Options and arguments for TAX are not case sensitive. That means you may type them in uppercase or lowercase. They are shown below in uppercase.

Option	Effect
;I	CAUTION: Do not use this option after you have entered tax information you want to save. It initializes the tax tables-that is, it **erases** all the tax information. All taxes become type 0 (rate tables rather than lookup tables), but tax numbers and names remain unchanged. The program prompts you to confirm that you want to initialize, then it erases the tax information and quits.
-P	Used with this argument, TAX prints a summary of all taxes whose names have been loaded with LOAD TAX.
-R	Used with this argument, TAX prints all information from the tax rate table in a raw form suitable for the RESTORE command to use in restoring the tax table. The standard command file SYSBACK calls TAX with this argument. Normally, you will not use this argument.
-?	Used with this argument, TAX runs in tutorial mode. When any prompt is displayed for the first time, it is preceded by its help message. You can print the help message again by entering a question mark (?) in response to the prompt when it appears again. This mode is useful if you have not run TAX many times.

If you specify an option not on this list, TAX will print **Invalid option** and quit. If you specify an argument not on this list, it will print a list of valid options and arguments, then quit.

When you are ready to build your tax table, use the TAX program. The following paragraphs list the prompts that TAX displays and explains how to respond to them.

Tax number, P, P#, T, T#, or Q to quit?
- Enter a tax number to create or edit a table for that tax code number. (Remember that you must already have assigned, with the LOAD TAX command, the number you enter to create a new table.) If you enter a tax number, the next prompt appears.
- Enter *P* to print a summary of all taxes whose names have been loaded with LOAD TAX. The summary is the same report that prints if you use the -P argument with the TAX program.
- Enter *P#* to print a summary of the specified tax (specify the tax's number in place of the *#* sign).
- Enter *T* to print a tax table. Then, in response to the next prompt, enter the number of the table you want to print. You can compare this printout with the tax table you obtained from the taxing authorities or a bank to verify that the tax has been entered correctly.
- Enter *T#* to print a table of the specified tax (specify the table's number in place of the *#* sign).
- To exit the program, enter *Q* or press RETURN.
  Tax type, Q to quit, RETURN for same?

Enter *0*, *1*, or *2* to specify the tax type for the tax number you entered. The default is zero.
- 0 (zero) indicates a tax rate with rounding. If the tax number you specified had been defined as a type 1 or 2, entering a zero here redefines it as a type 0. For taxes of type 0, TAX does not do anything other than set tax type and table maximum.
- 1 (one) indicates a table created through a compressed description (as explained in this chapter). The program continues the prompts through *Smallest taxable amount (cents)?* Then it begins at the point where it was when you last entered data for the table. You can add commands to the end of the table or delete commands from the end of the table.
- 2 (two) indicates a tax that is calculated as a percentage of the whole dollar amount, and then uses a lookup table for any remaining cents
  Press RETURN to use the same type-that is, to indicate you are not changing the tax type. If the tax number is type 0, the program returns to the first prompt. Zero is the default type, so if you have not defined the tax number as a type 1 or 2, it is a type 0.
- To exit the program, enter *Q*.

Enter command (I, L, E, Q, D, P, M, or S)?
This prompt will be repeated until you enter Q to quit. Enter the commands, in order, that define the compressed description of your tax table. Each command you enter causes the program to ask for other information:

- Enter *I* to give an increment command. You will be prompted for the number of times the increment applies and the taxable amount increment (*Amt Diff* on your worksheet).
- Enter *L* to start a loop. You will be prompted for the number of times to repeat the commands that occur before the end loop command. (The program will not allow you to quit until you end all the loops you start.)
- Enter *E* to end the last loop that was started.
- Enter *Q* to quit the program. You will be asked whether or not you want to save the changes you have made to the table. You may respond with *Y* to save the changes, *N* not to save the changes, or *P* to print the current table definition so you can decide whether or not to save it. (Remember, you cannot quit if there are loops that have been started but not ended.)
- Enter *D* to delete the last command you entered, including your responses to the command prompts. If you enter *D* again, the previous command is deleted. You can continue entering *D* until you delete as many entries as you wish, back to the *Smallest taxable amount* prompt.
- Enter *P* to print the current table definition so you can review it. Refer back to the example for a sample printout of the table definition.
- Enter *M* to modify a record. You will be asked for the number of the record to be modified, then you can change that record's smallest taxable amount.
- Enter *S* to see a display of the table's status showing the record size and the number of records used and available.

If you want to quit the program without saving any changes or ending your loops, use ^C (press and hold the CTRL key, then press C).

5. Back Up Your Tax Data

After you have used the TAX program to enter a tax table, run SYSBACK to back up the data.

9 – Reports, Cash Drawer and Shifts

*Note: The material covered in this chapter is not the same as the material in the **Point of Sale and Shift Change** manual. For example, the reports discussed in this chapter contain dollar and quantity amounts of fuel and merchandise; the **Point of Sale and Shift Change** reports include everything that occurred at a site during a shift or day.*

*Note: The following similar commands are **not** identical in their functions: NEXT SHIFT and NEXTSHFT, NEXT DAY and NEXTDAY, LOAD DRAWER and LDDRAWER, ADD DRAWER and ADDRAWER.*

Reports

The Site Controller maintains sales totals for the last three shifts, the current shift, daily totals for the current and previous days, and cumulative totals.

The shift totals are changed when a shift change is entered with the LOAD SHIFT, NEXT SHIFT, and NEXT DAY commands. Up to a total of nine shifts can be loaded.

The daily totals are reset with the RESET TOTALS command. This command moves the current daily totals to the previous day's totals.

The daily, cumulative, and shift totals are reset to zero with the A option (RESET TOTALS;A). The I option (RESET TOTALS;I) resets only the cumulative totals to zero.

Each transaction is entered in three places: daily totals, current shift totals, and cumulative totals. See the chart below.

The cumulative, current day, and current shift totals are *running totals*, and they are added to whenever a sale takes place. All other totals are *buffered totals*. The RESET TOTALS command resets the buffered totals to zero.

Cash drawer totals are also kept for one day's worth of shifts plus the current shift. Sales totals and cash drawer totals are usually printed at shift-change time, but they can be printed at any time, since the totals are available until the next day's shifts.

Figure 9-1 shows the relationships between the various types of totals.

Figure 9-1: Relationship Between Various Types of Totals
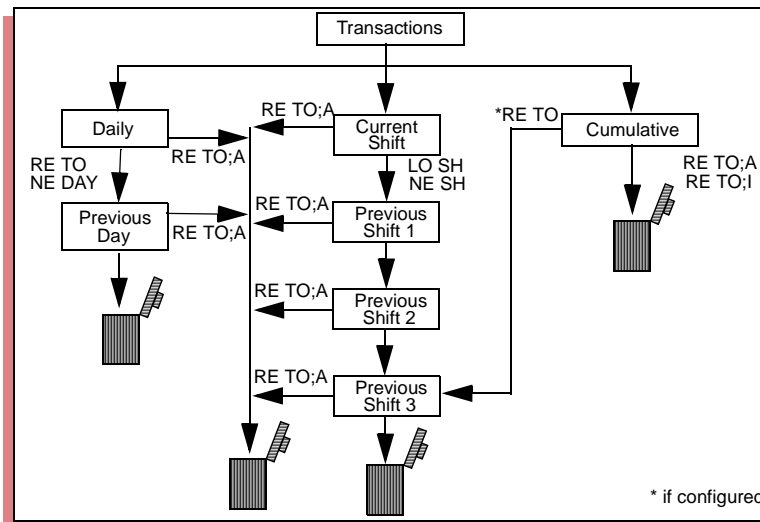
How to Print Sales Reports

Use the command PRINT SALES or P SA to print the total cash, debit, club, and credit sales in dollars from the time the total was last reset. The shift, daily, and cumulative totals can be printed with the command PRINT SALES.

The default printout format includes the current-shift totals and the cumulative totals, which are the totals since you last used the RESET TOTALS;A or RESET TOTALS;I command. (The examples in this chapter assume that the RESET TOTALS;A command is used every 24 hours or so.)

Products that have zero amounts all the way across are not displayed. Also, totals are not shown for subcategories that have only one entry.

Note: In the printouts, the product names in the PRODUCT column are the names assigned the product codes with the command LOAD PRODUCT. Product codes are assigned to tanks with the command LOAD TANK. Product codes are assigned to pumps or hoses with the command LOAD FUEL. Product names and tank assignments in the examples may be different from those in your system

```
                         PRINT SALES (P SA)

R* PRINT SALES ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr   Cat   Name          Club      Debit      Credit      Cash      Total
1    1     Regular       87.89     56.45       89.12      99.25     332.71
2    1     Unleaded      151.77    96.34      111.56     120.32     479.99
3    1     Premium       138.36    83.68      108.95     119.59     450.58
4    1     Diesel        160.16   112.26      180.24     207.69     660.35
                         ------    ------     ------     ------     ------
                         538.18   348.73      489.87     546.85    1923.63

5    2     Candy         22.43     12.18       18.97      19.67      73.25
6    2     Dairy         21.18     14.97       19.40      20.43      75.98
7    2     Bread         14.21     12.33        9.78      10.14      46.46
8    2     Soda          25.18     23.26       28.99      21.87      99.30
                         -----     -----       -----      -----     ------
                         83.00     62.74       77.14      72.11     294.99
                         ======    ======      ======     ======    =======
                         621.18   411.47      567.01     618.96    2218.62

----- Totals from Sat 7/17/99 6:59 PM to Sun 7/18/99 6:35 PM -----

Pr   Cat   Name          Club      Debit      Credit      Cash      Total
1    1     Regular       240.03   114.21      183.94     168.34     706.52
2    1     Unleaded      305.75   182.14      211.00     243.46     942.35
3    1     Premium       242.54   161.23      221.32     209.59     834.68
4    1     Diesel        326.87   224.98      362.65     402.69    1317.19
                         ------    ------     ------     ------     -------
                         1115.19  682.56      978.91    1024.08    3800.74

5    2     Candy         44.16     25.99       36.14      38.89     145.18
6    2     Dairy         41.35     28.75       37.76      42.38     150.24
7    2     Bread         29.56     25.87       36.90      22.18     114.51
8    2     Soda          51.12     26.52       57.31      42.19     177.14
                         ------    ------     ------     ------     ------
                         166.19   107.13      168.11     145.64     587.07
                         ======    ======     =======    =======    =======
                         1281.38  789.69     1147.02    1169.72    4387.81
R*
```

The command PRINT SALES with the A option prints dollar totals for the period you request. The periods are (use the letters and numbers shown in parentheses to specify the period):

- Current shift (C)
- Previous shifts (123)
- Today's daily totals (totals since last reset with RESET TOTALS or NEXT DAY) (D)
- Yesterday's daily totals (Y)
- Cumulative totals (totals since last reset with RESET TOTALS;A or RESET TOTALS;I) (T)
- Cumulative totals at last day-change (totals at last RESET TOTALS or NEXT DAY) (P, if configured). This function is useful at day changes so you do not have to stop the site to obtain cumulative totals.

You can request totals for any combination of up to seven periods. If you do not specify a period on the command line, the prompt *Which totals?* will be printed. Enter the periods you want in response to the prompt. Totals for periods will be printed in the order they were requested:

PRINT SALES;A 1D prints the totals for the previous shift 1 and the current daily totals.

PRINT SALES;A 123C prints the totals for the previous shifts 1, 2, and 3, and the current shift.

You can use ranges with the PRINT SALES command to print information for specified products for the current shift and the cumulative total since you last RESET TOTALS;A or RESET TOTALS;I.

```
R* PRINT SALES 1-4 ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr    Cat   Name          Club       Debit      Credit        Cash       Total
1     1     Regular       17.00       0.00        0.00        18.25       35.25
2     1     Unleaded       0.00       0.00        0.00        18.55       18.55
3     1     Premium       38.36       0.00        0.00         9.59       47.95
4     1     Diesel        19.22       0.00        0.00         7.69       26.91
                         ======      =====       =====        =====     =======
                          74.58       0.00        0.00        54.08      128.66

---- Totals from Sat 7/17/99 12:59 PM to Sun 7/18/99 6:35 PM -----
Pr    Cat   Name          Club       Debit      Credit        Cash       Total
1     1     Regular      118.03       4.21       13.94        68.34      204.52
2     1     Unleaded       5.75       2.14        1.00        43.46       52.35
3     1     Premium       42.54       0.00        0.00         9.59       52.13
4     1     Diesel        26.87       0.00        0.00         7.69       34.56
                         ======      ====        =====       ======     =======
                         193.19       6.35       14.94       129.08      343.56
R*
```

You can use the I option and ranges with PRINT SALES to print information for specified categories instead of for products.

```
R* PRINT SALES;I 2 ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr    Cat   Name          Club       Debit      Credit        Cash       Total
5     2     Candy         22.43      12.18       18.97        19.67       73.25
6     2     Dairy         21.18      14.97       19.40        20.43       75.98
7     2     Bread         14.21      12.33        9.78        10.14       46.46
8     2     Soda          25.18      23.26       28.99        21.87       99.30
                         ======      =====       =====        =====     =======
                          83.00      62.74       77.14        72.11      249.99

----- Totals from Sat 7/17/99 12:59 PM to Sun 7/18/99 6:35 PM -----
Pr    Cat   Name          Club       Debit      Credit        Cash       Total
5     2     Candy         44.16      25.99       36.14        38.89      145.18
6     2     Dairy         41.35      28.75       37.76        42.38      150.24
7     2     Bread         29.56      25.87       36.90        22.18      114.51
8     2     Soda          51.12      26.52       57.31        42.19      177.14
                         ======     ======      ======       ======     =======
                         166.19     107.13      168.11       145.64      587.07
R*
```

You can use PRINT SALES with any combination of the A option and the I option and ranges, to print sales totals for specified periods and products or categories. Separate the periods and the ranges of products or categories with a comma. For example:

PRINT SALES;AI 3,2 prints sales totals for previous shift 3, category 2;
PRINT SALES;AI YD,1-5 prints yesterday's and today's daily sales totals for categories 1 through 5; and
PRINT SALES;A 123,1-5 prints sales totals for the previous shifts 1, 2, and 3 for products 1 through 5.

How to Print Quantity Reports

Use the command PRINT QUANTITY or P QU to display sales in terms of quantity sold. Quantities sold are categorized by method of payment and kept by shift, current day, previous day, and cumulative. Quantities are printed in hundredths of a unit.

PRINT QUANTITY can be used with the same options and arguments as PRINT SALES. The default printout format includes the current shift totals and the cumulative totals.

```
                      PRINT QUANTITY (P QU)

R* PRINT QUANTITY ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr   Cat   Name          Club      Debit     Credit       Cash      Total
1    1     Regular       87.89     56.45      89.12       99.25     332.71
2    1     Unleaded     151.77     96.34     111.56      120.32     479.99
3    1     Premium      138.36     83.68     108.95      119.59     450.58
4    1     Diesel       160.16    112.26     180.24      207.69     660.35
                        ------    ------     ------      ------     ------
                        538.18    348.73     489.87      546.85    1923.63

5    2     Candy         22.00     12.00      18.00       19.00      71.00
6    2     Dairy         21.00     14.00      19.00       20.00      74.00
7    2     Bread         14.00     12.00       9.00       10.00      46.00
8    2     Soda          25.00     23.00      28.00       21.00      97.00
                         -----     -----      -----       -----     ------
                         83.00     61.00      74.00       70.00     288.00
                        ======    ======     ======      ======     ======
                        621.18    409.73     563.87      618.85    2211.63

----- Totals from Sat 7/17/99 6:59 PM to Sun 7/18/99 6:35 PM -----

Pr   Cat   Name          Club      Debit     Credit       Cash      Total
1    1     Regular      240.03    114.21     183.94      168.34     706.52
2    1     Unleaded     305.75    182.14     211.00      243.46     942.35
3    1     Premium      242.54    161.23     221.32      209.59     834.68
4    1     Diesel       326.87    224.98     362.65      402.69    1317.19
                        ------    ------     ------      ------     ------
                       1115.19    682.56     978.91     1024.08    3800.74

5    2     Candy         44.00     25.00      36.00       38.00     143.00
6    2     Dairy         41.00     28.00      37.00       42.00     148.00
7    2     Bread         29.00     25.00      36.00       22.00     112.00
8    2     Soda          51.00     26.00      57.00       42.00     176.00
                        ------    ------     ------      ------     ------
                        165.00    104.00     166.00      144.00     579.00
                       =======    ======     ======      ======     ======
                       1280.19    786.56    1144.91     1168.08    4379.74
R*
```

The command PRINT QUANTITY with the A option prints quantity totals for the period you request. The periods are (use the letters and numbers shown in parentheses to specify the period):
• Current shift (C).
• Previous shifts (123).
• Today's daily totals (totals since last reset with RESET TOTALS or NEXT DAY) (D).
• Yesterday's daily totals (Y).
• Cumulative totals (totals since last reset with RESET TOTALS;A or RESET TOTALS;I) (T).

- Cumulative totals at last day-change (totals at last RESET TOTALS or NEXT DAY) (P, if configured). This function is useful at day changes so you do not have to stop the site to obtain cumulative totals.

You can request totals for any combination of up to seven periods. If you do not specify a period on the command line, the prompt *Which totals?* will be printed. Enter the periods you want in response to the prompt. Totals for periods will be printed in the order they were requested:
PRINT QUANTITY;A 1D prints the totals for the previous shift 1 and the current daily totals.
PRINT QUANTITY;A 123C prints the totals for the previous shifts 1, 2, and 3, and the current shift.

You can use ranges with the PRINT QUANTITY command to print information for specified products.

```
R* PRINT QUANTITY 1-4 ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr    Cat    Name            Club      Debit      Credit       Cash       Total
1     1      Regular        17.00       0.00        0.00       18.25      35.25
2     1      Unleaded        0.00       0.00        0.00       18.55      18.55
3     1      Premium        38.36       0.00        0.00        9.59      47.95
4     1      Diesel         19.22       0.00        0.00        7.69      26.91
                           ======      =====       =====       =====     =======
                            74.58       0.00        0.00       54.08     128.66

---- Totals from Sat 7/17/99 12:59 PM to Sun 7/18/99 6:35 PM -----
Pr    Cat    Name            Club      Debit      Credit       Cash       Total
1     1      Regular       118.03       4.21       13.94       68.34     204.52
2     1      Unleaded        5.75       2.14        1.00       43.46      52.35
3     1      Premium        42.54       0.00        0.00        9.59      52.13
4     1      Diesel         26.87       0.00        0.00        7.69      34.56
                           ======      ====        =====      ======     =======
                           193.19       6.35       14.94      129.08     343.56
R*
```

You can use the I option and ranges with PRINT QUANTITY to print information for specified categories instead of for products.

```
R* PRINT QUANTITY;I 2 ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr    Cat    Name            Club      Debit      Credit       Cash       Total
5     2      Candy          22.43      12.00       18.00       19.00      71.00
6     2      Dairy          21.18      14.00       19.00       20.00      74.00
7     2      Bread          14.21      12.00        9.00       10.00      46.00
8     2      Soda           25.18      23.00       28.00       21.00      97.00
                           ======      =====       =====       =====     =======
                            83.00      61.00       74.00       70.00     288.00

----- Totals from Sat 7/17/99 12:59 PM to Sun 7/18/99 6:35 PM -----
Pr    Cat    Name            Club      Debit      Credit       Cash       Total
5     2      Candy          44.00      25.0        36.00       38.00     143.00
6     2      Dairy          41.00      28.00       37.00       42.00     148.00
7     2      Bread          29.00      25.00       36.0        22.00     112.00
8     2      Soda           51.00      26.00       57.00       42.00     176.00
                           ======     ======      ======      ======     =======
                           165.00     104.00      166.00      144.00     587.00
R*
```

You can use PRINT QUANTITY with any combination of the A option and the I option and ranges, to print quantity totals for specified periods and products or categories. Separate the

periods and the ranges of products or categories with a comma. For example:
PRINT QUANTITY;AI 3,2 prints quantity totals for previous shift 3, category 2;
PRINT QUANTITY;AI YD,1-5 prints yesterday's and today's daily quantity totals for categories 1 through 5; and
PRINT QUANTITY;A 123,1-5 prints quantity totals for the previous shifts 1, 2, and 3 for products 1 through 5.

PRINT QUANTITY does not display products that have zero amounts all the way across, or show totals for subcategories that have only one entry shown.

How to Print Quantity and Dollar Totals

Use the command PRINT TOTALS or P TO to print quantity and dollar totals by product. The plain command prints the current shift and cumulative totals.

```
                        PRINT TOTALS (P TO)

R* PRINT TOTALS ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr    Cat    Name           Quantity    $ Total
1     1      Regular              38      35.25
2     1      Unleaded             21      18.55
3     1      Premium              47      47.95
4     1      Diesel               38      26.91
                                 ---      -----
                                 144     128.66

5     2      Cigs                  0       0.00
6     2      Tires                 0       0.00
7     2      Bread                 0       0.00
8     2      Soda                  0       0.00
                                 ---      ----
                                   0      0.00
                                ====     =====
                                 144     128.66

----- Totals from Sat 7/17/99 12:59 PM to Sun 7/18/99 6:35 PM -----
Pr    Cat    Name           Quantity    $ Total
1     1      Regular             224     204.52
2     1      Unleaded             57      52.35
3     1      Premium              52      52.13
4     1      Diesel               43      34.56
                                ----     -----
                                 376     343.56

5     2      Cigs                  0       0.00
6     2      Tires                 0       0.00
7     2      Bread                 0       0.00
8     2      Soda                  0       0.00
                                ----     -----
                                   0      0.00
                                ====     ======
                                 376     343.56
R*
```

The command PRINT TOTALS with the A option prints quantity and dollar totals for the period you request. The periods are (use the letters and numbers shown in parentheses to specify the period):
- Current shift (C).
- Previous shifts (123).
- Today's daily totals (totals since last reset with RESET TOTALS or NEXT DAY) (D).
- Yesterday's daily totals (Y).

- Cumulative totals (totals since last reset with RESET TOTALS;A or RESET TOTALS;I) (T).
- Cumulative totals at last day-change (totals at last RESET TOTALS or NEXT DAY) (P, if configured). This function is useful at day changes so you do not have to stop the site to obtain cumulative totals.

You can request totals for any combination of up to seven periods. If you do not specify a period on the command line, the prompt *Which totals?* will be printed. Enter the periods you want in response to the prompt. Totals for periods will be printed in the order they were requested. For example:
PRINT TOTALS;A 1D prints the totals for the previous shift 1 and the current daily totals.
PRINT TOTALS;A 123C prints the totals for the previous shifts 1, 2, and 3, and the current shift.

You can use ranges with the PRINT TOTALS command to print information for specified products.

```
R* PRINT TOTALS 1-4 ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr    Cat   Name          Quantity     $ Total
1     1     Regular             38       35.25
2     1     Unleaded            21       18.55
3     1     Premium             47       47.95
4     1     Diesel              38       26.91
                                ---      -----
                                144      128.66

----- Totals from Sat 7/17/99 12:59 PM to Sun 7/18/99 6:35 PM -----
Pr    Cat   Name          Quantity     $ Total
1     1     Regular            224      204.52
2     1     Unleaded            57       52.35
3     1     Premium             52       52.13
4     1     Diesel              43       34.56
                                ----     -----
                                376      343.56
R*
```

You can use the I option and ranges with PRINT TOTALS to print information for specified categories instead of for products.

```
R* PRINT TOTALS;I 2 ↵
----- Shift 1 from Sun 7/18/99 7:51 AM to Sun 7/18/99 6:34 PM -----
Pr    Cat    Name           Quantity       $ Total
5     2      Cigs                  0          0.00
6     2      Tires                 0          0.00
7     2      Bread                 0          0.00
8     2      Soda                  0          0.00
                              ====        =====
                                 0          0.00


----- Totals from Sat 7/17/99 12:59 PM to Sun 7/18/99 6:35 PM -----
Pr    Cat    Name           Quantity       $ Total
5     2      Cigs                  0          0.00
6     2      Tires                 0          0.00
7     2      Bread                 0          0.00
8     2      Soda                  0          0.00
                              ====       ======
                                 0          0.00
R*
```

You can use PRINT TOTALS with any combinations of the A option and the I option and ranges, to print quantity and dollar totals for specified periods and products or categories. Separate the periods and the ranges of products or categories with a comma. For example:

PRINT TOTALS;AI 3,2 prints quantity and dollar totals for previous shift 3, category 2;

PRINT TOTALS;AI YD,1-5 prints yesterday's and today's daily quantity and dollar totals for categories 1 through 5; and

PRINT TOTALS;A 123,1-5 prints quantity and dollar totals for the previous shifts 1, 2, and 3 for products 1 through 5.

How to Print a Sales Summary Report

The PRINT SUMMARY or P SU command prints a shortened form of the sales report. This format includes only dollar totals by type of payment.

This report is generated from the same information used in the PRINT SALES and PRINT TOTALS commands and is also affected by the RESET TOTALS and LOAD SHIFT commands.

The command PRINT SUMMARY with no options prints the current shift and cumulative totals.

```
                        PRINT SUMMARY (P SU)

R* PRINT SUMMARY ↵
- Shift 1 from Sun 7/18/99 5:51 PM to Sun 7/18/99 6:35 PM -
      Club        Debit        Credit        Cash          Total
     74.58         0.00          0.00        54.08         128.66

- Totals from Sat 7/17/99 12:59 PM to Sun 7/18/99 6:35 PM -
      Club        Debit        Credit        Cash          Total
    193.19         6.35         14.94       129.08         343.56
R*
```

You can use the A option with the PRINT SUMMARY command to specify the periods to summarize. You can also specify products—or categories, with the I option—to summarize. These options work like they do with the PRINT SALES and PRINT TOTALS commands:

PRINT SUMMARY;A 1D prints a totals summary for the previous shift 1 and the current daily totals.

PRINT SUMMARY;A 123C prints a totals summary for the previous shifts 1, 2, and 3, and the current shift.

PRINT SUMMARY;A DT prints a totals summary for the current daily totals and the cumulative totals.

PRINT SUMMARY 1-4 prints a totals summary for the current shift and the cumulative totals for products 1 through 4.

PRINT SUMMARY;AI D,2 prints a totals summary for the daily totals for category 2.

How to Reset Sales Totals

The command RESET TOTALS or RE TO resets the daily totals. It moves today's totals to yesterday, clears today's totals, and marks the begin time for each product and payment type. If so configured, the command also moves the running cumulative totals to the previous shift 3, where the totals are buffered.

RESET TOTALS affects the daily totals printed by PRINT SALES, PRINT TOTALS, PRINT SUMMARY, PRINT QUANTITY, and PRINT DRAWER.

Execute this command daily, at the beginning of the daily accounting period.

```
RESET TOTALS (RE TO)

R* RESET TOTALS ↵
Verify (y/n)? Y ↵
R*
```

Use the command RESET TOTALS;A or RE TO;A to reset the daily, previous shift, and cumulative sales totals (including tax totals) to zero. It also sets the shift to one and clears totals.

You might use this command to reset the cumulative total at the beginning of the fiscal year, for example. (The maximum total the Site Controller can accommodate is $999,999.99, then it starts at zero again.)

```
R* RESET TOTALS;A ↵
Verify (y/n)? Y ↵
R*
```

Use the I option (RESET TOTALS;I) to reset only the cumulative sales totals. This is helpful to those sites that use the cumulative figures for monthly or quarterly totals.

Cash Drawer Commands

Use the command LOAD DRAWER or LO DR to enter the initial amount in the cash drawer. Use the commands SUBTRACT DRAWER or SU DR and ADD DRAWER or AD DR to reconcile a cash drawer amount when you put money into or take money out of a cash drawer to adjust the till.

The amount loaded into, subtracted from, and added to the drawer is logged.

How to Enter Cash Drawer Amount

Use the command LOAD DRAWER to enter the initial amount of cash in a cash drawer. The new amount you enter will replace the former amount. You can use the C option with this command.

```
LOAD DRAWER (LO DR)

R* LOAD DRAWER ↵
Drawer number? 1 ↵
$ amount? 150 ↵
R*
```

How to Add To or Subtract From Cash Drawer

Use the command ADD DRAWER or AD DR to add to a cash drawer amount. You can use the C option with this command.

```
ADD DRAWER (AD DR)

R* ADD DRAWER ↵
Drawer number? 1 ↵
$ amount? 150 ↵
R*
```

Use the command SUBTRACT DRAWER to subtract from the cash drawer amount. The amount you subtract from a cash drawer is added to the safe drop. You can use the C option with this command.

```
SUBTRACT DRAWER (SU DR)

R* SUBTRACT DRAWER ↵
Drawer number? 1 ↵
$ amount? 593.87 ↵
R*
```

How to Print Cash Drawer Totals

Use the command PRINT DRAWER or P DR to print the shift and daily totals for the cash drawers. The terminal will print the following:

- the drawer number (Dr)
- shift number (Shift)
- amount of cash taken in (Cash in)
- amount of cash paid out (Paid out)
- the balance remaining in the drawer (Balance)
- the amount in the safe (Safe drop)
- the shift begin date and time for the current shift
- the beginning time for today and the cumulative amounts
- the ending time for yesterday

RESET TOTALS or NEXT DAY moves today's totals (Today) to yesterday (Yestdy) and resets today's totals to zero.

RESET TOTALS;A resets the daily (Today and Yestdy) and cumulative totals (Cumltv) to zero, sets the shift to one, and clears all shift totals. RESET TOTALS;I resets just the cumulative totals.

```
                          PRINT DRAWER (P DR)

R* PRINT DRAWER ⏎
Dr    Shift        Cash in Pd out    Balance  Safe drop
1         1         830.12   0.00     830.12       0.00   Began Sat 8/21/99 8:00 AM
         Prev 1     791.35   0.00      00.00     791.35   Began Fri 8/20/99 4:00 PM
         Prev 2    1239.87   0.00      00.00    1239.87   Began Sat 8/21/99 12:00PM
         Prev 3     692.44   0.00      00.00     692.44   Began Sat 8/21/99 8:00 AM
         Today      830.12   0.00     830.12       0.00   Began Sat 8/21/99 8:00 AM
         Yestdy    2723.66   0.00       0.00    2723.66   Began Sat 8/21/99 8:00 AM
         Cumltv   87107.56   0.00       0.00   87107.56   Began Sun 8/22/99 8:00 AM
R*
```

Shift Change

The exact procedures performed at shift change vary from site to site.

The NEXT SHIFT Command

The NEXT SHIFT or NE SH command stops the site, closes the current shift, loads the next shift number, restarts the site, and opens the cash drawer for a safe drop. There is no screen display with this command, but the shift change is logged.

```
NEXT SHIFT (NE SH)

R* NEXT SHIFT ⏎
R*
```

A system parameter sets the number of hours required between changing shifts with NEXT SHIFT. This parameter prevents shift changes from occurring too close together. If you use the A option (NEXT SHIFT;A), the time limit is ignored.

A system parameter sets the beginning drawer balance each time NEXT SHIFT is run. A negative amount in the parameter means that the balance should be carried forward from the preceding shift.

Other Shift-change Commands

If you do not use the NEXT SHIFT command, you can still synchronize the system when the shift is being changed. Use the command STOP to shut down the site. After the new shift number has been loaded (see the following paragraph), use RUN to restart the site.

```
LOAD SHIFT (LO SH)

R* LOAD SHIFT ↵
Shift number? 1 ↵
R*
```

If you do not use the NEXT SHIFT command to change shifts, you can use the command LOAD SHIFT or LO SH to enter the number of the next shift. Often some reports are printed at shift change time. These could include some combination of PRINT TOTALS, PRINT SALES, PRINT SUMMARY, PRINT PUMP, PRINT TANK, PRINT QUANTITY, PRINT DRAWER, and PRINT TRANSACTION.

Reports should be printed after the site is restarted, so the site does not have to remain shut down while the reports are printing. Or you can redirect the reports to a disk file and print them at any time.

If day-night pricing is used, prices can also be changed at shift-change time.

If your site's shift-change procedure involves using several commands, consider creating command files (described later in this manual) for shift change.

The NEXT DAY Command

The NEXT DAY or NE DAY command stops the site, closes the current day, restarts the site, opens the cash drawer for a safe drop, and loads shift 1. There is no screen display with this command, but the change is logged.

```
NEXT DAY (NE DAY)

R* NEXT DAY ↵
R*
```

A system parameter sets the number of hours required between changing days with NEXT DAY. This parameter prevents next-day changes from occurring too close together. If you use the A option (NEXT DAY;A), the time limit is ignored.

The I option with NEXT DAY does not restart the site. This is useful for sites that are not open 24 hours a day.

A system parameter sets the beginning drawer balance each time NEXT DAY is run. A negative amount in the parameter means that the balance should be carried forward from the preceding day.

10 – Transactions

Printing Transactions

Transactions are stored so that they can be used later for bookkeeping purposes or for billing proprietary-card customers. A record for each transaction is printed on the log printer as the transaction is completed.

The Site Controller can be configured to not save or not print cash transactions, in which case they will not appear on the log. (You might not want to save or to not print your cash transactions if they are taking up too much memory in the Site Controller.) The Site Controller can also be configured to not save hand-authorized transactions.

Transactions that are not saved in the main transaction file, but are logged, are numbered with negative numbers, so they are easily distinguished from normal transaction numbers. The numbers range from -2 to -999. These numbers allow you to easily tell if any logged transactions are missing from a given printout.

Merchandise items in transactions are not saved in itemized form, but are recorded in the log following the main transaction entry. They are printed three per line in the same format that is displayed on the console.

Whenever a merchandise item is voided on the console, a void is recorded in the log for that item. If all merchandise in a sale is voided, that is printed also.

The format of the transaction printout is specified in the Site Controller configuration. Transactions printed on the log printer and transactions printed in response to the PRINT TRANSACTION command use the same format. The transaction printout format at your site may be different from the format used in the examples in this manual.

From time to time stored transactions must be cleared out to make room for new transactions. If transactions are not polled from your site periodically by a host computer, you must reset the transaction-begin pointer manually. Before doing so, it is important that a record of the transactions be produced, either electronically on another computer or as a report in a Site Controller disk file or on paper.

The transaction-begin pointer in the transaction file determines which transaction the transaction printout begins with. Also, transactions before the transaction-begin pointer are overwritten by new transactions as they occur. So if transactions from your site are not collected and processed electronically by a host computer, you will need to reset the transaction-begin pointer after you

print the current transactions to make room to store new transactions. (See "The Transaction File" on page 91.)

How to Print Transactions

Use the command PRINT TRANSACTION or P TR to print transactions from the transaction-begin pointer to the end of the file. The terminal will print the transaction number and data for each transaction. Transactions are printed in order of transaction number.

Note: The format of the transaction printout is determined by the Site Controller configuration, and may be different from the example.

```
                        PRINT TRANSACTION (P TR)

R* PRINT TRANSACTION ⏎
Tran Card  Account     Veh  Date Time  P# Pr   Qty    Price        $Total  Error
1201 65289 5006127285 9183 2/28 10:58  1 1    4.851  1.159          5.62
1202 65180 9097075558 6249 2/28 10:58  4 4    9.794  1.049         10.27
1203 82429 3834546687 2491 2/28 10:59  2 2   13.281  1.119         14.86
1204 56218 3859872185 1126 2/28 10:59  3 3    8.606  1.299         11.18
1205 28593 4136528253 9138 2/28 11:01  2 2   19.195  1.119         21.48
1206 82429 3834546687 2491 2/28 11:02  1 1    9.247  1.159         10.72
 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
1234 82429 3834546687 2491 2/28 11:20  4 4   12.449  1.099         13.68
1235 65180 9097075558 6249 2/28 11:20  2 2   14.761  1.069         15.78
1236 56218 3859872185 1126 2/28 11:22  4 4   35.000  1.099         38.47  LIMIT
1237 28593 4136528253 9138 2/28 11:22  3 3   13.635  1.299         17.71
1238 82429 3834546687 2491 2/28 11:23  2 2    4.197  1.119          4.70
1239 65289 5006127285 9183 2/28 11:23  1 1    6.557  1.159          7.60
1240 65180 9097075558 6249 2/28 11:24  2 2    9.316  1.069          9.96
                                            =======                ======
                                            448.281                514.84
R*
```

How to Sort a Transaction Printout

You can use the P1 and P2 options (the P stands for parameter) with the PRINT TRANSACTION command to sort and print transactions.

- Transactions can be sorted by any field (or parameter) in the transaction printout. In the example below, the parameters are Tran, Card, Account, Veh, Date, Time, P#, Pr, Qty, Price, $Total, and Error.
- P2 determines how the data will be divided into sections.
- P1 determines how the data will be sorted within each section.

Quantity and dollar totals are printed for each section specified by P2 and subtotals are printed for each group specified by P1, if the Site Controller is configured to do so.

To sort transactions, type PRINT TRANSACTION;P2=*value2*,P1=*value1*. Substitute the names of the fields you want to sort by for *value2* and *value1*.

The following example shows the command PRINT TRANSACTION with the account number as P2 and the product as P1.

```
R* PRINT TRANSACTION;P2=ACCOUNT,P1=PR ↵
Tra   Card    Account      Veh   Date    Time    P#   Pr   Qty     Price   $Total Error
1206  82429   3834546687   2491  2/28    11:02   4    1     9.247  1.159   10.72
1220  82429   3834546687   2491  2/28    11:12   4    1     3.879  1.159    4.50
                                                           ------          -----
                                                           13.126          15.22

1203  82429   3834546687   2491  2/28    10:59   3    2    13.281  1.119   14.86
1238  82429   3834546687   2491  2/28    11:23   3    2     4.197  1.119    4.70
                                                           ------          -----
                                                           17.478          19.56

1215  82429   3834546687   2491  2/28    11:08   2    3     6.043  1.299    7.85
1224  82429   3834546687   2491  2/28    11:14   2    3    13.090  1.299   17.00
                                                           -----           -----
                                                           19.133          24.85

1229  82429   3834546687   2491  2/28    11:17   1    4    16.604  1.099   18.25
1234  82429   3834546687   2491  2/28    11:20   1    4    12.449  1.099   13.68
                                                           ------          -----
                                                            9.053          31.93
                                                           ======          =====
                                                            8.790          91.56
R*
```

How to Print Specified Types of Transactions

The P1 and P2 options, used to specify fields to be sorted, can be used to restrict the printout to only those transactions with a given value in the specified field.
- If the authorization code field is used, the case (UPPER or lower) of the authorization code must be correct.
- For the authorization code and account number fields, only the first characters in the field need be specified. Any fields that begin with the specified characters will be matched.
- For other fields, you must specify all the characters in the field to be matched.
- You may specify only one type of transaction for each command. That is, you may not specify the type with both the P1 and P2 options.

For example:
- PRINT TRANSACTION;P2=ACCOUNT=54,P1=PR does a P2 sort by account number and includes only transactions whose account number begins with 54.
- PRINT TRANSACTION;P1=AUTH=SC prints transactions whose authorization code begins with SC.
- PRINT TRANSACTION;P2=AUTH=CASH prints out only transactions whose authorization code begins with CASH.
- PRINT TRANSACTION;P1=P#=1 prints out only transactions that were completed on pump number 1.
- PRINT TRANSACTION;P1=PR=1 prints out only transactions that used product number 1.

To specify a date, insert the last two digits of the year before the date and do not use any punctuation.

For example, PRINT TRANSACTION;P2=DATE=930610 prints out transactions that occurred on June 10, 1993.

To specify amounts-either quantity or dollar totals-do not use any punctuation. For example, to see all $5.00 sales, enter PRINT TRANSACTION;P1=$TOTAL=500.

You must always enter quantity in thousandths, even if your site displays quantity only in hundredths (the PRINT TRANSACTION examples in this chapter show thousandths). For example, to see all ten-gallon sales, enter PRINT TRANSACTION;P1=QTY=10000.

How to Print a Range of Transactions

You can specify a range of transactions to print with the PRINT TRANSACTION command.
- A range has the form N-M, which means transaction numbers N through M. N stands for the beginning number you specify, and M stands for the ending number.
- A -N means transaction numbers from the beginning of the file through transaction N.
- An N- means transaction number N through the end of the file.
- An N means print only transaction number N.

If the starting transaction number specified is not in the file, no transactions are printed.

The printout stops after the last transaction number specified or at the end of the file if the ending number is not in the file:
- PRINT TRANSACTION 23-150 prints transactions 23 through 150.
- PRINT TRANSACTION 23- prints transaction number 23 through the end of the transaction file.
- PRINT TRANSACTION -5 prints transactions from the beginning of file through transaction 5.
- PRINT TRANSACTION 34 prints only transaction number 34.
- PRINT TRANSACTION;P2=ACC=54, 1-10 prints transactions whose account number starts with 54, in the transaction range 1 through 10.

How to Print Transactions in Progress

The command PRINT TIP or P TI prints transactions in progress. You can use this command before changing prices to verify that there are no transactions in progress.

Seq	is the transaction sequence number.
P#	is the number of the pump being used.
Pr	is the product number of the product being pumped.

Device	is the type of device the transaction was started from: reader (island card reader), POS console, site (full serve mode or ACTIVATE PUMP).
Acct	is the payment type: cash, club, credit, checking, or savings (checking and savings cards are also called debit cards).
Card #	is the account number for card sales.
Quantity	is the number of gallons pumped so far. This is the most current value available for the type of pump being used.
$Total	is the dollar value of fuel pumped so far. This is the most current value available for the type of pump being used.
Status	is the status of the transaction. The status may be: • Pumping • All done • Need verf • Get verf • Aborting • Got verf

The last four items may be preceded by Payable if pumping is complete or if there are merchandise items on the sale.

```
                          PRINT TIP (P TI)

R* PRINT TIP ⏎
Seq P# Pr   Device      Acct Card #          Quantity    $Total     Status
340 11 1    POS         Cash                    5.490      4.77      Pumping
339  1 1    Reader      Club 25555877413335922  0.000      0.00      Need verf
330 12 2    POS         Cash                    5.330      4.90      Pumping
R*
```

The Transaction File

Transaction numbers go up to 9999 before starting over at 0001 (skipping 0000), but the transaction file does not hold that many transactions. The number of transactions the transaction file can hold is set with a special table-configuration disk-based command described in MDE-4314 CFN III Configuration Manual.

The begin pointer in the transaction file is set with RESET TRANSACTION or RE TR or by a remote host. Transactions before the begin pointer can be overwritten by new transactions. The end pointer is at the most recent transaction added to the file. PRINT TRANSACTION prints transactions from the begin pointer to the end pointer.

When the end pointer reaches the begin pointer, the transaction file is full and no new transactions can be added. Before that happens, you should save the transactions, then use RESET TRANSACTION (see below) to reset the begin pointer to one greater than the last transaction, clearing the transaction file and making room for new transactions.

How to Reset the Transaction-begin Pointer

The transaction-begin pointer determines which transaction number will begin the next transaction printout. It also determines which transactions are kept safe and which transactions can be recorded over as new transactions occur. Transactions after the transaction-begin pointer are kept safe. Transactions before the transaction-begin pointer can be recorded over by new transactions.

If your site is not polled electronically by a host computer, you must reset the transaction-begin pointer regularly to make memory available for recording new transactions. If your site is polled by a remote computer, that computer will reset the transaction-begin pointer after it finishes collecting transactions, and you must never do so manually.

Figure 10-1: The Transaction Pointers

The transaction pointers

End pointer
Begin pointer

I
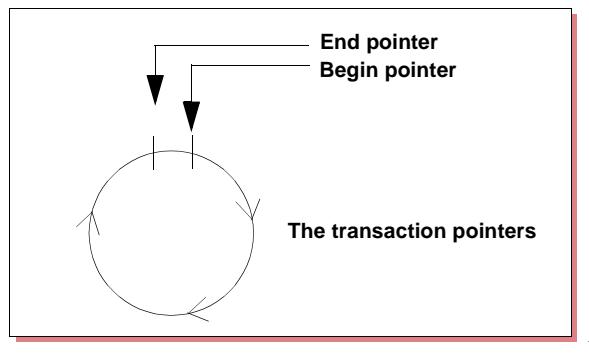
Use the command RESET TRANSACTION or RE TR to reset the transaction-begin pointer.

```
RESET TRANSACTION (RE TR)

R* RESET TRANSACTION ↵
Trans #? 4
Verify (y/n)? y ↵
R
```

Usually you set the begin pointer to the transaction after the last transaction that was printed with PRINT TRANSACTION. Reset the transaction-begin pointer after you have printed the current transaction data with the command PRINT TRANSACTION.

Note: Transactions before the transaction-begin pointer will be erased as new transactions are recorded over them. This means that if you make a mistake and reset the transaction-begin pointer without first printing or otherwise saving the transactions, you should correct your error immediately by resetting the transaction-begin pointer to the correct place; otherwise transaction data could be lost.

*Note: Be sure to reset the transaction begin pointer to the next consecutive number. If you skip numbers, some transactions will never be printed, and you will see the message **Does not exist**.*

The A option resets all transaction table pointers, including the next transaction to send to the CFN host and the next transaction to log, as well as the first transaction to print. If a number is provided with the A option, the CFN host poll pointer is set to that transaction number.

Note: If the number option is used it will sometimes cause some transactions not to be sent while other transactions are sent twice or will not stop at the end of the file and will wrap around and send all the transactions in the file to the CFN host.

The I option deletes transactions in progress (resulting in unassigned transactions and loss of card data needed for billing any pumping transactions that were in progress).

How to Automatically Reset the Transaction Pointer

Use the command PURGE SITE or PU SIT to automatically reset the transaction pointer to one greater than the last transaction number.

```
PURGE SITE (PU SIT)

R* PURGE SITE ↵
Verify (y/n)? y ↵
R*
```

This is handy to use in a command file that contains PRINT TRANSACTION to print the transaction, and PURGE SITE to reset the transaction-begin pointer.

Note: You will ordinarily use the PURGE SITE command only if you are manually printing transactions and using the printed record as a basis for billing.

A More Detailed Report

The Shift Change Package gives you the ability to have a more detailed report with a PJ option. The disk-based PJ command gives a more detailed report on transactions than the PRINT TRANSACTION command.

The name PJ stands for Print Journal, but is not an abbreviation for print journal. In other words, you have to type PJ to run this command; typing ***print journal*** will not work.

The journal referred to by the PJ command is the disk journal. To use PJ, first make sure that you have configured your Site Controller to store a disk journal. This configuration is under page 1 of the SYS_PAR program (see the ***Systems parameters*** chapter in MDE-4314 CFN III Configuration Manual).

In using SYS_PAR to configure your site for a disk journal, specify Yes or No. If you respond "yes", JOURNAL.LOG is assumed as the name for the disk journal; the PJ command uses JOURNAL.LOG as the default name of the file it searches to compile information.

The PJ command has many options to give you flexibility in reviewing transactions or tracking down a problem. These options are:

-C*n*[*-m*]	list journal entries for console *n* (to *m*)
-R*n*[*-m*]	list journal entries for island card reader *n* (to *m*)
-A*n*[*-m*]	list journal entries for pump *n* (to *m*)
-U*n*[*-m*]	list journal entries for user/clerk *n* (to *m*)
-S*n*[*-m*]	list journal entries for shift *n* (to *m*)
-D*n*[*-m*]	list journal entries for date *n* (to *m*)
-H*n*[*-m*]	list journal entries for hour *n* (to *m*)
-B*n*[*-m*]	list journal entries for department *n* (to *m*)
-N*x*[*-y*]	list journal entries for transaction number *x* (to *y*)
-T*x*[*ss*]	list tender type *x* (sub-tender type *ss*)
-O*y*[:*z*]	length of the first and second fields of club cards
-X	compressed listing (Figure 10-2 instead of Figure 10-3)
-W	raw data listing
-V	list events only
-E	include events
-G	list general events only
-L	print total without transaction records
-I	do not include merchandise-item entries
-F	do not include fuel-item entries
-M	do not include tender records
-P	list journal entries for previous day's journal; if no filename specified, PREVIOUS.LOG is default
-?	print help
[*filename*]	if no filename is specified, JOURNAL.LOG is default

For example:
- PJ -C2 lists transactions on console 2.
- PJ -C1-2 -S3 lists transactions on consoles 1 and 2 for POS shift 3.
- PJ -N300-350 -I lists the fuel transactions within transactions 300-350.

Figure 10-2: Format of Compressed Output

```
4416 80140 Sft-01 POS-03 Clerk-01 10/02 05:46AM $0.00 tax 0.00 $17.00
  Pump-05 Fuel-90 Credit-04  14.925G @1.139  $17.00 odo-          aux-
Paid:     Visa   4602230000112661    Auth# 001285 $17.00  Chg: 0.00

4417 80244 Sft-01 ICR-05 Clerk-00 10/02 06:14AM $0.00 tax 0.00 $5.30
  Pump-02 Fuel-90 Credit-04   4.654G @1.139  $5.30 odo-          aux-
Paid:     Visa   4680180002848769    Auth# 002261  $5.30  Chg: 0.00

4418 80272 Sft-01 POS-03 Clerk-01 10/02 06:19AM $0.88 tax 0.06 $15.95
   Pump-06 Fuel-91 Credit-04  12.067G @1.239  $14.95 odo-          aux-
   2    0.47 34 oz Refill
Paid:     Visa   4680180000381243    Auth# 002747 $15.95  Chg: 0.00

4419 80479 Sft-01 POS-03 Clerk-01 10/02 06:55AM $1.40 tax 0.09 $18.58
  Pump-01 Fuel-90 Credit-04  14.924G @1.139  $17.00 odo-          aux-
  1    1.49 Sinclair 10w
Paid:     Visa   4053851521025308    Auth# 050195 $18.58  Chg: 0.00

4420 80524 Sft-01 ICR-10 Clerk-00 10/02 07:05AM $0.00 tax 0.00 $17.70
  Pump-07 Fuel-91 Credit-04  14.286G @1.239  $17.70 odo-          aux-
Paid:     Visa   4678011029088       Auth# 020150 $17.70  Chg: 0.00


$Total:  $74.53     Fuel:   71.95
```

Figure 10-3: Format of Expanded Output

```
4416 80140 Sft-01 POS-03 Clerk-01 10/02/99 05:46AM
  14.925G @1.139 Fuel-90 $  17.00 Pump-05 Credit-04 odo-          aux-
            Total          17.00
            Paid           17.00 Visa   4602230000112661    Auth# 001285
            Change          0.00

4417 80244 Sft-01 ICR-05 Clerk-00 10/02/99 06:14AM
   4.654G @1.139 Fuel-90 $   5.30 Pump-02 Credit-04 odo-          aux-
            Total           5.30
            Paid            5.30 Visa   4680180002848769    Auth# 002261
            Change          0.00

4418 80272 Sft-01 POS-03 Clerk-01 10/02/99 06:19AM
  12.067G @1.239 Fuel-91 $  14.95 Pump-06 Credit-04 odo-          aux-
  2    0.47 34 oz Refill    0.94 Dept# 15 Item# 00102
            Tax             0.06
            Total          15.95
            Paid           15.95 Visa   4680180000381243    Auth# 002747
            Change          0.00

4419 80479 Sft-01 POS-03 Clerk-01 10/02/99 06:55AM
  14.924G @1.139 Fuel-90 $  17.00 Pump-01 Credit-04 odo-          aux-
  1    1.49 Sinclair 10w    1.49 Dept# 01 Item# B7422903702
            Tax             0.09
            Total          18.58
            Paid           18.58 Visa   4053851521025308    Auth# 050195
            Change          0.00

4420 80524 Sft-01 ICR-10 Clerk-00 10/02/99 07:05AM
  14.286G @1.239 Fuel-91 $  17.70 Pump-07 Credit-04 odo-          aux-
            Total          17.70
            Paid           17.70 Visa   4678011029088       Auth# 020150
            Change          0.00


$Total:  $74.53     Fuel:   71.95
```

The first two numbers in each transaction are the transaction number and the record sequence number from the transaction header (which is explained in the *Disk journal layout* chapter in the *Point of Sale and Shift Change* manual).

11 – Proprietary Cards

This chapter discusses the authorization and limitation codes on proprietary (also called club or private) cards.

When a card is offered as payment on a CFN system, where the system looks to see if the card should be accepted (that is, if it is a valid card) depends on how the system is configured and what type of card is offered. The system may contact a remote computer or CFN host, or it may consult its own local restrictions, called lockouts, which are discussed in this chapter. *Note: Proprietary cards cannot be used to buy a car wash at Unitec sites.*

Proprietary Card Format

Privately issued cards used with the Gasboy CFN system have the following format for information which is optically or magnetically encoded on the card:

Format: #ssssss#CCCCCCVVVVEEEE#yymmllaapx
- *#* is a field separator.
- *ssssss* is the CFN III system ID number, which can be 4-6 digits. It is encoded on the card and is assigned by Gasboy. Leading zeros are significant in system ID numbers.
- *CCCCCCVVVVEEEE* is the card information, totaling 1-19 digits in subfields (card number, vehicle number, and employee number). These digits are encoded on the card and may also be shown in the numbers on the front of the card.

The remaining fields are optional information, which is encoded on the card. These fields, which are discussed in the *Card Encoding Manual* and in the *System parameters* chapter of MDE-4314 CFN III Configuration Manual, include:
- *yymm* is the expiration date: year and month. This can be 2 or 4 digits; if it's 2, it is only the year.
- *ll* is the limitation code, which can be one or two digits.
- *aa* is the authorization code, which can be one or two digits.
- *p* is the price level, which can be one or two digits.
- *x* is the restriction code, which can be one or two digits.

Once you know the format for the proprietary cards you want to issue, you can make the cards with a Gasboy card encoder, have Gasboy make the cards for you, or go to a card-encoding company.

How to Restrict Purchases

There are three ways you can restrict the fuel and merchandise that can be purchased on your proprietary cards that conform to the standard Gasboy format; you may assign authorization codes, limitation codes, and/or cumulative limits to the cards.
- *Authorization codes* determine the types of fuel and merchandise a card can access.
- *Limitation codes* determine how much fuel can be purchased on the card in a single transaction.
- *Cumulative limits* are explained in the *Fuel allocation* chapter in this manual.

Lockouts

There are two types of lockout available for the CFN system, *bit-mapped* lockout and *limited* lockout. In addition, either type of lockout may be set up as a positive or negative system. The type of lockout used is determined by the Site Controller configuration.

Bit-mapped lockout is used with proprietary cards. Limited lockout can be used with proprietary cards and bank cards.

A typical format for the customer information field of privately issued cards is *cccccvvvveeee* where
- *cccccc* is the card number (a six-digit number can lock out up to 999,999 cards; a five-digit number can lock out up to 99,999 cards)
- *vvvv* is the vehicle number
- *eeee* is the employee number, and
- *cccccccvvvveeee* is the account number. Account number here refers to the entire customer-information field of the proprietary card. This field is usually divided into subfields that may include a card number, vehicle number, employee number, customer account number, or other fields. Although it may seem confusing to call the entire field the account number, when it can contain a subfield called account number, this terminology conforms with the track II standard as defined by the American Bankers Association (cards have three tracks and CFN card readers read track II).

With bit-mapped lockout, only the card number (six digits in this example) is used for lockout. With limited lockout, the entire customer information field (14 digits in this example) must be entered for lockout.

An offset can now be set in SYS_PAR to determine what card data is used. See MDE-4314 CFN III Configuration Manual for more information.

Bit-mapped Lockout

Bit-mapped lockout uses less memory than limited lockout, but is less flexible.

In a system that uses bit-mapped lockout, the card number is the configurable offset group of digits (4-8) of the section of the card that identifies the customer. The number of digits used is configured in SYS_PAR.

If your site has bit-mapped lockout, you do not need to type leading zeros when you enter a card number. For example, to lock out card number 0056, just type 56.

How to Use Card Ranges

If your system uses bit-mapped lockout, you can specify a range of cards to be acted on by the commands LOCK CARD, UNLOCK CARD. Use a hyphen (-) between two card numbers to specify the range of cards to be acted on. For example, 56000-56999 specifies all cards with card numbers 56000 through 56999. When using CHECK CARD, specifying 100-200 checks 100 cards.

Limited Lockout

Limited lockout lets you lock out privately issued cards and other cards as well. It is more flexible than bit-mapped lockout, but it takes up more memory.

For a system that uses limited lockout, the account number includes all the fields on the card that identify the customer. To lock out or unlock a card, you must enter the entire account number, and the fields must be in the order they appear on the card. The order in which the fields appear on the transaction printout may not be the same as the order in which they appear on the card.

For example, if your system uses proprietary cards with a five-digit card number, a 10-digit account number, and a four-digit vehicle number, the number used for lockout is a 19-digit number.

For bank cards, the account number is the entire account number as defined by the ABA track II standards.

If your site has limited lockout you must type the leading zeros of a number, and you must type a C before the number of a privately issued card. For example, to lock out or unlock privately issued card number 0056300044000121132, use the LOCK CARD or UNLOCK CARD command and type C0056300044000121132. To lock out or unlock bank card number 4842150958999, type the appropriate command and 4842150958999.

How to Use Wildcards

If your system uses limited lockout, you can use wildcards in the account numbers you specify for the commands LOCK CARD, UNLOCK CARD, and CHECK CARD. Use a period (.) in the account number to denote a wildcard. The period matches any digit at that position. More than one period can be used in an account number.

For example, if you use LOCK CARD to lock out number ...464..., all cards with nine-digit account numbers, whose middle three digits are 464, will be locked out. Similarly,
- ....9 specifies all 12-digit account numbers that end in 9.
- 484215095899. specifies account numbers 4842150958990 through 4842150958999.

You can use wildcard lockout to lock out selected fields of the customer information. For example, if a system uses a 14-digit account number, where the first six digits are the card number, the next four digits are the employee number and the last four digits are the vehicle number, you can lock out only the card number, only the employee number, only the vehicle number, or any combination of card number, employee number, or vehicle number.

If the account number format is as given above,
- To lock out employee number 1234, enter: LOCK CARD ......1234....
- To lock out vehicle number 4567, enter: LOCK CARD 4567
- To lock out the exact combination of employee number 1234 and vehicle number 4567, enter: LOCK CARD 12344567

If you use wildcards with the commands LOCK CARD, UNLOCK CARD, or CHECK CARD, and there is not an exact match, the terminal will print ***Some valid, some not***. This does not necessarily mean that there are both valid and invalid card numbers in the group.

If you use wildcards to lock out or unlock account numbers, you cannot unlock or lock an account number that matches the wildcard number. For example, if you use LOCK CARD to lock out number 11.4, you cannot unlock account number 1114. If you try to unlock an account number that matches a wildcard number that is locked out, the terminal prints ***Card is not valid***. If you try to lock an account number that matches a wildcard number that is unlocked, the terminal prints ***Card is valid***.

Positive and Negative Lockout Options

You must choose one of two card lockout options, positive lockout or negative lockout.
- If you choose the negative lockout option, all cards are initially valid and you enter invalid card numbers into the Site Controller.
- If you choose the positive lockout option, all cards are initially invalid and you enter all valid card numbers into the Site Controller.

How to Select Negative Lockout

Type: UNLOCK CARD;A.

```
UNLOCK CARD;A  (UN CA;A)

R*  UNLOCK CARD;A ↵
R*
```

Makes all cards valid.

How to Select Positive Lockout

Type: LOCK CARD;A.

```
LOCK CARD;A (LOC CA;A)

R* LOCK CARD;A ↵
R*
```

Makes all cards invalid.

Disk-based Bit-mapped Lockout

Disk-based bit-mapped lockout is available, depending on your configuration in SYS_PAR. The data is stored in a file called *C*:LOCKOUT*?*.DTA, where *?* is N or P, meaning negative or positive lockouts, respectively.

If you use disk-based bit-mapped lockout, you still must have at least one lockout record in TABLE configuration, since this is where the positive or negative status of lockout is stored.

The SYSBACK.CMD command does not backup a lockout table if the file LOCKOUT*?*.DTA exists.

The LOCKOUT*?*.DTA file is created when either the UNLOCK CARD;A or LOCK CARD;A command is entered. A file descriptor is opened the first time lockout is accessed. Since the file descriptor stays open, if the lockout file is subsequently modified by means other than lockout commands (such as copying a file over the top of it), you must reboot the site to read in the new information.

How to Check a Card's Lockout Status

Type: CHECK CARD.

```
CHECK CARD (C CA)

R* CHECK CARD;C ↵
Account number? C0056300044000121132 ↵
C0056300044000121132: Card is not valid
Account number? 4842150958999 ↵
4842150958999: Card is valid
Account number? ↵
R*
```

The terminal will print the card's status. You may use the C option with the command CHECK CARD. The site in this example has limited lockout.

How to Lock Out and Unlock Cards

To lock out invalid cards:
Type: LOCK CARD.

You may use the C option with the command LOCK CARD. The site in this
example has bit-mapped lockout.

```
LOCK CARD (LOC CA)

R* LOCK CARD;C ↵
Account number? 56 ↵
Account number? 109 ↵
Account number? 145 ↵
Account number? ↵
R*
```

This example has limited lockout.

```
R* LOCK CARD;C ↵
Account number?
C0056300044000121132 ↵
Account number?
C0109200036000121159 ↵
Account number?
C0145100029000121145 ↵
Account number?
R*
```

To unlock valid cards:
Type: UNLOCK CARD.

You may use the C option with the command UNLOCK CARD. The site in this
example has bit-mapped lockout.

```
UNLOCK CARD (UN CA)

R* UNLOCK CARD;C ↵
Account number? 563 ↵
Account number? 1092 ↵
Account number? 1451 ↵
Account number? ↵
R*
```

The site in this example has bit-mapped lockout; the example shows a range of
numbers.

```
R* UNLOCK CARD ↵
Account number? 6500-6599 ↵
R*
```

The site in this example has limited lockout.

```
R* UNLOCK CARD;C ↵
Account number?
C0056300044000121132 ↵
Account number?
C0109200036000121159 ↵
Account number?
C0145100029000121145 ↵
Account number? ↵
R*
```

How to Print a Lockout List

Use the command PRINT LOCKOUT or P LO to print all invalid card numbers, if you use negative lockout, all valid card numbers, or if you use positive lockout, a range of cards.The site in this example has limited lockout with the positive lockout option.

```
PRINT LOCKOUT (P LO)

R* PRINT LOCKOUT ↵
Valid cards (limited)
C0056300044000121132 C0145100029000121145
C0109200036000121159 4842150958999
R*
```

The site in this example has bit-mapped lockout with the negative lockout option.

```
R* PRINT LOCKOUT ↵
Invalid cards (bit_mapped)

  56    102 245 534 1204 2173 2637 2739
7925  8175
R*
```

Print Card can also be used to print the lockout file in a special format. Note that this command cannot be stopped with ^C. It will continue to run in the background until completed.

Authorization Codes

An authorization code is a code found on the card that lets the Site Controller look up a list of products the card is authorized to purchase.

Authorization codes generally apply to all island transactions and console prepay transactions. However, it is possible to configure the Site Controller to also enforce authorization codes on postpay and to require alternate payment types if the customer is not authorized to purchase a product. (This arrangement can be used if there have been complaints of account employees using their company cards to fill their own vehicles and bypassing the authorization codes by postpay use of proprietary cards.)

Since the authorization code is one or two digits, there are either 9 or 99 different codes available. The 9 or 99 authorization codes, in turn, can each contain up to 99 fuel product codes and merchandise codes:

- The fuel product codes are *positive* codes-in other words, the card holder can purchase only those fuels whose product codes are contained in the authorization code on his or her card.
- Merchandise codes, which are codes for specific products and for categories of products, are *negative* codes-that is, the card holder cannot purchase merchandise whose product code or category code is contained in the authorization code on his or her card; the card holder can purchase only merchandise whose code is not included in the authorization code.

Put another way, you can regard fuel product codes as unrestricted authorization codes and merchandise codes as restricted authorization codes.

To specify the types of products for which each privately issued card is authorized:

- Determine the products you want to authorize for each card.
- Decide on a unique authorization code (one or two digits long) for each group of products you want authorized for a single card.
- Encode the authorization codes on the cards, one to each card.
- Assign the fuel and merchandise product codes to the corresponding authorization codes. Products and/or categories authorized by a code are assigned with the LOAD AUTHORIZATION command.

Each card is then authorized to pump only those fuel products assigned to the authorization code and to purchase only those merchandise products not assigned to the authorization code on the card.

You will probably want to set up one authorization code for each individual fuel and one for all fuels, in addition to the combinations you require.

How to Assign Product Codes to Authorization Codes

Use the command LOAD AUTHORIZATION or LO A to define your authorization codes and assign one or more fuel and merchandise product codes to each authorization code. (Fuel and merchandise product codes-which you must set up first, before assigning product codes to authorization codes-were assigned with the LOAD PRODUCT command.)

In entering product codes with LOAD AUTHORIZATION, plain numbers indicate specific fuel or merchandise products, and numbers preceded by an uppercase or lower case c (for example, C3 or c3) indicate merchandise categories.

```
LOAD AUTHORIZATION;C (LO A;C)

R* LOAD AUTHORIZATION;C ↵
Auth #? 1 ↵
Product code? 2 ↵
Product code? C3 ↵
Product code? ↵
Auth #? 2 ↵
Product code? C1 ↵
Product code? 4 ↵
Product code? ↵
Auth #? ↵
R*
```

You may use the C option with the command LOAD AUTHORIZATION to define more than one authorization code at a time.

Each product code assigned to each authorization code takes up 6 bytes in the Authorization table. (See the *Table sizes* chapter of MDE-4314 CFN III Configuration Manual for more information.)

How to Print Authorization Code Definitions

Type: PRINT AUTHORIZATION

```
PRINT AUTHORIZATION (P A)

R* PRINT AUTHORIZATION ↵
Code      Allowed products
   1      2    C3
   2      C1   4
R*
```

How to Remove Product Codes

1 Type: REMOVE AUTHORIZATION

```
REMOVE AUTHORIZATION (REM A)

R* REMOVE AUTHORIZATION ↵
Auth #? 1 ↵
Product Code? 3 ↵
Product Code? ↵
R*
```

2 Enter Authorization Code.

3 Enter the Product Code.

To remove an authorization code, remove all its product codes. An authorization code is defined only when it has product codes assigned to it.

You may use the C option with the command REMOVE AUTHORIZATION to remove product codes from more than one authorization code.

> ### CAUTION
>
> *Do not* use the I option unless you are initializing in order to redefine all your authorization codes.

Use the command LOAD AUTHORIZATION;I to remove all product codes from all authorization codes, thus removing all authorization codes.

Fuel Limitation Codes

Limitation codes determine (limit) how much fuel can be purchased on the card in each transaction.

To limit the amount of fuel that can be locally authorized for a single sale on a proprietary card, you:
- Determine the fuel limitations for each card, in gallons (or litres) or dollars.
- Decide on a unique limitation code (one or two digits long) to represent each limitation.
- Encode the limitation codes on the cards, one to each card, as with authorization codes.
- Assign the limitation amounts to the appropriate limitation codes with the LOAD LIMITATION command (discussed below).

Each card is then limited for any single transaction to the amount designated by the limitation code on the card. Note that the limitation code on the card overrides the pump's fill limit, but not the pump's maximum limit.

The card limit may not be exceeded in a single transaction; to purchase amounts greater than the card limit, the card holder has to use multiple transactions.

How to Assign Fuel Limits to Fuel Limitation Codes

Use the command LOAD LIMITATION or LO LI to set the maximum fuel quantity allowed for a limitation code. The limit can be in gallons (or litres) or dollars. To specify a dollar limit, type a dollar sign ($) before the limit amount.

```
LOAD LIMITATION;C (LO LI;C)

R* LOAD LIMITATION;C ↵
Limitation code? 1 ↵
Limit? 20 ↵
Limitation code? 2 ↵
Limit? $30 ↵
Limitation code?  ↵
R*
```

You may use the C option with the command LOAD LIMITATION to assign a limit amount to more than one limitation code at a time.

How to Print Fuel Limitation Codes

Use the command PRINT LIMITATION or P LI to print the limitation codes and the limit amount for each code. If the limit is in dollars, a dollar sign prints in front of the amount.

```
PRINT LIMITATION (P LI)

R* PRINT LIMITATION ↵
          Limitations
    1  20.000    2  $30.000
R*
```

How to Remove a Fuel Limitation Code

Use the command REMOVE LIMITATION or REM LI to remove a limitation code.

```
REMOVE LIMITATION (REM LI)

R* REMOVE LIMITATION ↵
Limitation code? 2 ↵
R*
```

You may use the C option with the command REMOVE LIMITATION to remove more than one limitation code at a time. Use the command LOAD LIMITATION;I to remove all limitation codes. *Do not* use the I option unless you are initializing in order to redefine all your limitation codes.

Fueler ID - Fleet Packages Only

Fueler ID cards are now supported. For the card to be accepted, the system ID and site ID must be correct for that site. The Fueler ID is set by either swiping a card or entering the ID in the FUELER.BIN program. From then on the fuel point and island reader transactions will be marked in the disk journal with the clerk ID as the fueler ID. All pumps in the cluster assigned to the reader the card was swiped on belong to that fueler.

Assigning a Fueler ID to a Cluster

Use the program FUELER.BIN to set the fueler ID for a cluster. The syntax is:
fueler [<cluster> <fueler-ID>]

If the arguments are not provided, the current state of all fuelers is shown. Currently only clusters 1-9 can have a fueler. Entry of a Fuel ID card generates a disk journal event type 197 with the first two characters of the text field containing the cluster number.

For reference, the Fueler ID card format is:
.xxxxxx..ssssssii.yymm2

.	field separator
xxxxxx	system ID
ssssss	site ID
ii	fueler ID

Key Option

The Key Option allows the operator to use smart keys at an Islander II site.

Note: The Key Option may not be compatible with 1000 Fleetkey/TopKAT and the Fleet Key Manager Plus will not be compatible with the CFN Key Option system. Please refer to "Restrictions Using the CFN with Key Option System" on page 108.

Communicating with the Site Controller

The Site Controller must be configured to work the Key Option just as other proprietary cards. See the chapter Key Option Configuration in MDE-4314 CFN III Configuration Manual for specific information.

To communicate with the Site Controller, the Key is converted into a club card format before the data is sent. The Key Option reads the following keys:
- Single Key
- Employee Key (dual)
- Vehicle Key (dual)
- Supervisor Key (supervisor option only)
- Delivery Key (fuel drop option only
- Dipstick key (dipstick option only)
- Code Key

Restrictions Using the CFN with Key Option System

1   You cannot use a 1000 FleetKey key that uses PINs in a CFN system and vice-versa. On a 1000 FleetKey system, the PIN number is encrypted. On a CFN Key Option the PIN number is decrypted.

2   In a CFN with Key Option system, if you use a code key, the odometer is not stored on the key (see "Lookup Program" on page 111 for more information).

3   In a CFN w/Key Option system, if you use a code key with PIN loaded in the Lookup Table, verification will be done by the Site Controller (see "Lookup Program" on page 111 for more information).

4   The following Key data will not be used on the CFN Key Option system. and their values will be ignored:
- Previous Odometer (old location)
- Last Odometer (old location)
- Vehicle Class
- Maintenance A Odom
- Maintenance A Date
- Maintenance B Odom
- Maintenance B Date
- Maintenance C Odom
- Maintenance C Date

5 CFN w/Key Option system single, dual and supervisor key limitation codes, authorization codes, price level and restriction codes are restricted as follows:
- Cannot be omitted.
- Digits must be set to one for each.
- Offsets at the Site Controller must be set to the following:

Limitation Code	0
Authorization Code	1
Price Level	2
Restrictions	3

- Dollar amount restriction code is not available.

6 CFN w/Key Option system single, dual, supervisor, dipstick and delivery key Expiration Dates are restricted as follows:
- cannot be omitted
- digits must be set to four

7 CFN w/Key Option system allows a Key/Card combination for dual cards with the following restrictions:
- The key/card combinations is limited to a vehicle key and an employee card.
- The check digit on the vehicle key cannot include a pin check.
- If the check digit on the employee card includes a pin check, the pin verification is done by the Site controller.

8 CFN w/Fleekey system Key ID characters can only be numbers, field separators and Supervisor characters. The Key Option system allows them to be alpha characters, as well.

9 CFN w/Key Option system account number on a key is 1 to 19 of the 20 key ID characters.

10 CFN w/Key Option keys may not be compatible with 1000 FleetKey/ TopKAT keys. They may be if encoded under the 1000 Fleetkey/TopKAT mode and no pin.

11 The CFN w/Key Option system does not use key numbers.The KE200 Key Encoder in the CFN mode sets key numbers to a default value of 9999.

12 The Key Option Manager Plus will not be compatible with the CFN w/Key Option system.

13 TopKAT keys are not compatible with the CFN w/Key Option system.

12 – Lookup Program

The Lookup program is part of the Fleet Options package (which is briefly described in), and it requires version 3.0 or later of the Site Controller software.

The Lookup program lets you quickly set up accounts for customers, using these types of cards:
- code card-which can also be *cardless*, when a user manually enters the account number at a keypad. In this manual, discussions of code cards should be taken as also referring to cardless accounts.
- club card (private-issue)
- bank card (credit or debit card)

Under the Lookup program you do not have to encode restrictions on the cards. The restrictions and customer information are contained in records in a ***lookup file***.

Before the Lookup program, all the restrictions-such as gallon limit per purchase or types of merchandise that could be bought-on a club card had to be encoded on the card itself. Now, you can make up a group of numbered cards, say 990-999, in advance, and quickly pass them out to your next ten club card customers. Then, in the lookup file under records 990, 991, etc., you enter the restrictions for each card.

If the restrictions subsequently change-for example, a company decides to let its employees purchase 25 gallons at a time, instead of only 10-you no longer have to make up and issue new cards. Instead, you quickly and easily change the lookup file.

Also, you do not have to create a lookup file record for each card. You can, for instance, use as a record's lookup number the field in a card's number that identifies a company's account, and keep all cards for that company in one record. In other words, if you have a thousand cards, you do not have to have a thousand records as long as some cards have a field in common.

Definitions

The Lookup program contains a series of menus. This section defines the prompts and fields used on the menus.

Lookup number - the number assigned to a card or account. This number can be up to 19 digits (numeric characters only; alphabetic characters are not allowed).

Lookup type - the type of the lookup number.

There are three lookup types that apply to code cards:

N = this type of lookup matches the entire number on the code card (or cardless entry). Applies only to code cards or manually entered code numbers.

P = this type of lookup matches the first part of the number on the card (*P* stands for the primary or first part; the length of the primary part is set in the configuration menu). Applies only to code cards or manually entered code numbers.

S = this type of lookup matches the last part of the number on the card (*S* stands for the secondary or last part of the code that comes after the primary part). Applies only to code cards or manually entered code numbers.

There are four types that apply to club cards:

C = club-card type. This type uses the entire number on a club card (up to a maximum of 19 digits).

1 = this type of lookup matches field 1 of a club card. Applies only to club cards.

2 = this type of lookup matches field 2 of a club card. Applies only to club cards.

3 = this type of lookup matches field 3 of a club card. Applies only to club cards.

There is one type that applies to bank cards:

B = bank-card type, including credit and debit cards.

Each lookup number is not necessarily unique because two or more lookup types could have the same lookup number, especially when P, S, 1, 2, or 3 is the lookup type. However, each combination of lookup number and lookup type is unique. For example, there could be two lookups 444, one of type S and another of type C, but there can be only one 444S or one 444C.

Tender type - usually 0. The choices are: 0=Club, 1=Checking, 2=Savings, 3=Credit, SPACEBAR=User-entered (to be entered by customer)

Tender subtype - usually 0. If the tender type is club (0) or credit (3), the tender subtype is a way of specifying which type of club or credit account is used, according to the table on the next page. The first digit in each number is the tender type and the other two digits are the tender subtype:

Code	Tender	Code	Tender
000	Gasboy club card	330	EFS
001	Country Energy℠ regional club card	331	Trendar
002	Country Energy local club card	332	Tesoro℠
003	CITGO® Fleet	333	Sinclair® Fleet
004	IAES	334	Gascard
100	Debit checking	335	Amerada Hess℠
200	Debit savings	336	Voyager
300	Bank credit card	337	JCB℠
302	Wright Express℠ card	338	Gulf®
303	American Express® card	339	Fuelman℠

Code	Tender	Code	Tender
304	VISA® card	340	IAES Fleet
305	MasterCard®	341	Country Mark
306	Discover℠ card	342	Southern States
307	FINA® card	343	Amoco® Multi card
308	AMOCO® card	344	Amoco Torch
309	CITGO Plus card	345	Amoco Transi card
310	Diamond Shamrock℠ card	346	MasterCard Fleet
311	Texaco® card	347	VISA Fleet
312	Sinclair card	348	Amoco Co Brand
313	Carte Blanche℠ card	349	API
314	Diners Club℠ card	350	Citgo FAMS
315	customer charge	351	Gasboy Fleet One
316	employee charge	352	Gasboy Debit
317	Phillips 66℠ card	353	Gasboy Program 1
318	Comdata™ card	354	Gasboy Program 2
319	CCIS card	355	Gasboy Program 3
320	Coastal® card	356	SPS Fleet
321	Buypass℠ Fleet card	357	T-Chek
322	Generic fleet card	365	Citgo PrePaid
323	PHH Fleet Amer card	366	Citgo Black (Plus)
324	CITGO Red card	400	cash
325	CITGO Silver card	401	food stamps
326	Quick Fuel	402	checks
327	Transcash	403	full-serve
328	NTS Fuel	500	unpaid
329	TIC	501	Instant-on denial

(Tender subtype is also discussed in the *Point of Sale and Shift Change* manual.)

Account fields 1-3 - one-three fields of your choosing, such as employee number, vehicle number, license plate number. Set these fields with the program's Configuration menu.

Account fields 1-3 constitute the number assigned to a card; the same number in one or two account fields can be assigned to more than one card, but no two cards can have all three fields identical.

The factor that determines how many account fields can be used is the tender type assigned to the record, not the type of card used. Any record whose tender type is not 0-for example, bank-card records with a tender type of 3-uses only the first account field. Club records (tender type 0) can use one, two, or all three account fields.

The first account field can have up to 20 digits if it is the only account field used.

If the tender type is not 0, only numeric digits are allowed in the one field that

can be used. If the tender type is 0, there are five exceptions to the numbers-only rule:

- a blank account field means the customer is to enter the digits for this field before he can pump fuel. This applies to all lookup types.
- an account field with N as its only character means the Site Controller will use the entire lookup number (or as much of it as fits in the field) to identify the account in the transaction printout. This applies to lookup types N, P, or S.
- an account field with P as its only character means the Site Controller will use the primary part of the lookup number to identify the account in the transaction printout. This applies to lookup types N, P, or S.
- an account field with S as its only character means the Site Controller will use the secondary part of the lookup number to identify the account in the transaction printout. This applies to lookup types N, P, or S.
- an account field with R as its only character means the Site Controller will duplicate the corresponding field on the card to identify the account in the transaction printout. This applies to lookup types C, 1, 2, or 3.

Two account field examples:

1. A customer has account 123456 and he swipes a code card encoded with that number or enters it at a PIN pad. The primary code length is configured to 3. In the lookup file, there is a record 123 type P (and no record 123456 type N). The tender type of that record is 0 (club). Account field 1 is P and is configured to be 6 digits long; account field 2 is S, configured to be 9 digits long; account field 3 is blank and configured to be 4 digits long.

When the card is used, the customer is asked to enter account field 3-for example, 7890. The Lookup program then substitutes the club card (from tender type 0) numbered 0001230000004567890 in place of the code card in the transaction printout, just as if the customer had swiped/entered that club card's number. Note the leading zeros automatically added to fill out account fields 1 and 2 to 6 and 9 digits.

2. A customer uses club card 1234 123456789 1234. In the lookup file there is a record 1234 type 1 (and no 1234 123456789 1234 type C). The tender type for the record is 0 (club). Account fields 1, 2, and 3 are each set to R.

The club card shown in the transaction printout is 1234 123456789 1234, but the limitation, authorization, price level and other restrictions enforced on that transaction were those in the record, not those encoded on the club card.

Exp date - the expiration date of the account. Enter the date as MM/YY or M/YY. For example, January of 2000 would be 1/00.

Limitation code - limitation code; determines how much fuel can be purchased on the card in a single transaction. These codes are loaded with the LOAD LIMITATION command.

Auth code - authorization code; determines the types of fuel and merchandise a card can access. These levels are entered with the LOAD AUTHORIZATION command.

Price level - determines what price will be charged per gallon. 0=fallback; 1=cash price; 2=credit price; 3=debit price; 4-79=club prices. These levels are entered with the LOAD PRICE command.

Message - the optional message displayed when the card is used.

Rejection code - 0=okay; any other number means the card will be rejected

when presented by the customer and ***Denied*** will be displayed on the reader. This can be useful to temporarily block access when payment is overdue.

PIN - the optional PIN for this account.

Require odometer - indicates whether the card user is required to enter the odometer reading; the default is ***no***. If an odometer reading is required, the ***Enter odometer*** step in the Site Controller's READER configuration program must be set to optional. If an odometer reading is required and the ***Ask for $ amount*** field is set to no, set the ***Digits in restriction code*** in SYS_PAR to 1 or 2; if an odometer reading is required and the ***Ask for $ amount*** field is set to yes, set the ***Digits in restriction code*** in SYS_PAR to 2.

Require manual # - indicates whether the card user is required to manually enter a number, such as a vehicle number; the default is ***no***. If a manual number is required, the ***Enter auxiliary number*** step in the Site Controller's READER configuration program must be set to optional. If a manual number is required and the ***Ask for $ amount*** field is set to no, set the ***Digits in restriction code*** in SYS_PAR to 1 or 2; if a manual number is required and the ***Ask for $ amount*** field is set to yes, set the ***Digits in restriction code*** in SYS_PAR to 2.

Require PIN - indicates whether the card user is required to enter a Personal Identification Number; the default is ***no***. If a PIN is required, the ***Enter PIN*** step in the Site Controller's READER configuration program must be set to optional. If a PIN is required and the ***Ask for $ amount*** field is set to no, set the ***Digits in restriction code*** in SYS_PAR to 1 or 2; if a PIN is required and the ***Ask for $ amount*** field is set to yes, set the ***Digits in restriction code*** in SYS_PAR to 2.

Ask for $ amount - should the customer be asked to enter a dollar amount for fuel to be purchased; the default is ***no***. If the customer enters an amount, the pump will stop once that amount has been pumped. The customer can either enter an amount or press the FILL button. If a $ amount is required, the ***Enter amount*** step in the Site Controller's READER configuration program must be set to optional. If a $ amount is required, set the ***Digits in restriction code*** in SYS_PAR to 2.

Records

The Lookup program stores its data in records. Each lookup number and lookup type together require one record (more than one record can contain the same lookup number, but in that case, each record will have a different lookup type).

All records have the same number of fields (18 at the time this manual was written), but few, if any, records will have all fields filled in.

The records are stored in a file named LOOKUP.DTA.

The Menus

You call up the Lookup program by typing LOOKUP at the system prompt (R*) and pressing ENTER. You run the Lookup program through a series of menus and submenus.

Note: The menus in this chapter are shown as they initially appear on the screen, where one field (usually the first) is automatically selected. However, as you select other fields, the instructions at the bottom of the menu change, depending on which field is selected.

Short and Long Menus

Most menus are one of two types: short or long. A short menu lets you enter only a lookup number and, optionally, a lookup type.

Once you enter the lookup number (and lookup type) on a short menu, a long menu is displayed that contains all fields. You can then add or delete records, edit fields, etc.

Default Actions in Fields

When you first see some long menus-such as Search and replace, Output everything to ASCII merge file, or List lookup records-the fields will be filled in with a *default action* with parentheses around it. For instance, you might see (any), (replace), or (print).

These default actions are explained in the sections on the menus that contain them.

Main Menu

When you enter LOOKUP to run the program, the Main menu automatically comes up on the screen. You can select an item from a menu by typing its number, its first letter, or the whole name. You can also use the up and down cursor keys to place the cursor arrow beside the item you want to select. Once you have selected an item, press ENTER to call up that item.

```
Main menu
Lookup file maintenance

0. Quit
1. Update from keyboard
2. Merge updates to/from file
3. List lookup records
4. Configuration
5. Optimize

Please select from the above menu
and press ENTER ->
```

Each of the main menu's items 1-5 is explained below in its own section.

To use the Lookup program for the first time, you'll probably want to start with Configuration to set up the three optional account fields. When you have set up those three fields (or only one or two of them, as you prefer), go to

Update from Keyboard

Item 1 on the Main menu is Update from keyboard.

```
Update from keyboard
Add/Delete/Edit lookup records

0. Quit
1. Add new records
2. Delete records
3. Edit existing records
4. Search and replace

Please select from the above menu
and press ENTER ->
```

Start with the *Add new records* item.

Add New Records

The first menu in this item has the short form.

```
Add new records
Press ESCAPE to exit

Lookup number        -> :
Lookup type             :


Enter lookup number
```

Once you enter a lookup number and press ENTER, the prompt changes to:
    Enter lookup type (N,P,S=Number,Pri,Sec; C,1,2,3=Club,sub; B=Bank).

N is preselected as the default. Press ENTER to select N, or type another entry, and press ENTER. When you press ENTER, the screen changes to a long menu:

```
Add new records, load fields for new record
up/down arrows move cursor, press -> when done, Press ESCAPE to exit

Lookup number            * 123
Lookup type              * N
Tender type       ->     : 0
Tender subtype           : 0
Acct 1                   :
Acct 2                   :
Acct 3                   :
Exp date                 : 0/0
Limitation code          : 0
Auth code                : 0
Price level              : 0         Require odometer       : No
Message                  : (none)    Require manual #       : No
Rejection code           : 0         Require PIN            : No
PIN                      : (none)    Ask for $ amount       : No

Enter tender type (0=Club, 1=Checking, 2=Savings, 3=Credit).
Press SPACE then ENTER for user entered
```

To add data to the fields, use the up and down arrow keys to position the cursor beside the field you want. Type your data, then press ENTER.

When you finish entering data into fields for this record, press the right arrow key, $\boxed{\rightarrow}$. A prompt asks ***Is all the above correct? [y]***. Press **N** and then **ENTER** and make any necessary changes, or press **ENTER** or **Y** to continue on.

When you press ENTER or Y you are returned to the previous ***Add new records*** short menu so you can enter additional codes. If you have no additional records to enter, press ESC to return to the Update menu.

Note: In the above menu, the * (asterisk) in front of the first two fields (lookup number and lookup type) means that you cannot change the data in those fields.

Delete Records

The Delete item starts with a short menu. From this menu, you can delete records either ***individually*** or ***globally***. Global deletes include deleting a range of records, say, 1000-1050.

```
Select and delete records, select record to delete
Press ESCAPE to exit

Lookup number        ->    :
Lookup type                :

Enter lookup number
Press ENTER or enter range for global delete
```

Individual Record Deletions

At the menu shown above, enter a lookup number and press **ENTER**. The prompt changes to:

> Enter lookup type (N,P,S=Number,Pri,Sec; C,1,2,3=Club,sub; B=Bank)
> Press BACKSPACE then ENTER for ANY

N is preselected as the default. Press ENTER to select N, or type another entry, and press ENTER. (See above for selecting ***ANY***). When you press ENTER, the screen changes to a long menu if the record is found.

```
Select and delete  records, select record to delete
Press ESCAPE to exit

Lookup number            : 123
Lookup type              : N
Tender type              : 0
Tender subtype           : 0
Acct 1                   :
Acct 2                   :
Acct 3                   :
Exp date                 : 0/0
Limitation code          : 0
Auth code                : 0
Price level              : 0          Require odometer     : No
Message                  : (none)     Require manual #     : No
Rejection code           : 0          Require PIN          : No
PIN                      : (none)     Ask for $ amount     : No

Delete this record? (y/n)
```

Press Y to delete or N to leave the record. You are then returned to the short menu so you can delete additional records. If you have no further records to delete, press ESC to return to the Update menu.

If the record you entered at the short menu is not found, the long menu does not appear and this prompt is displayed: ***Record not found, press any key to continue***.

Global Delete and (Any) Fields

At the short Delete menu (the one where just the lookup number and lookup type are listed), you can select global delete in one of two ways:
- with no lookup number or lookup type entered
- with a range of lookup numbers and, optionally, a lookup type entered. Enter a range of lookup numbers with no spaces: 1200-1250. You can also shorten the second number where applicable, like this: 1200-50.

If you select global delete with no lookup number or type, this long menu is displayed with all fields initially shown with the default (*any*):

```
Global delete, select fields to match
up/down arrows move cursor, press -> when done, Press ESCAPE to exit

Lookup number              : (any)
Lookup type          ->    : (any)
Tender type                : (any)
Tender subtype             : (any)
Acct 1                     : (any)
Acct 2                     : (any)
Acct 3                     : (any)
Exp date                   : (any)
Limitation code            : (any)
Auth code                  : (any)
Price level                : (any)      Require odometer      : (any)
Message                    : (any)      Require manual #      : (any)
Rejection code             : (any)      Require PIN           : (any)
PIN                        : (any)      Ask for $ amount      : (any)

Enter lookup type (C=Club, B=Bank, N=Number, A=All)
```

If you select global delete with a range of lookup numbers and, optionally, a lookup type on the short Delete menu, a long menu is displayed that shows the range of lookup numbers and optional type you entered. All other fields have the (*any*) default, like the menu shown above.

The *any* default for each field is a search parameter that matches any value for that field-for example, any price level, any tender type, any PIN, etc.

In place of *any*, you can substitute a specific value-for example, a price level of 3, a tender type of credit, a 1482 PIN number, etc. However, you cannot use a range of values in any field other than lookup number; you cannot enter price levels of 2-5, for instance.

When you replace *any* in a field with a specific value, you are limiting the search parameters. For instance, if you want to delete some or all of the records that have a tender type of checking, you would enter 1 (1=checking) into the tender-type field, and the program would then find all those records and only those records; it would not find records with club, savings, credit, or customer-entered tender types.

When you have entered specific values for records you want to delete, press $\boxed{\rightarrow}$ to begin the search. The program will search through all records, stopping at each one that matches the specific value(s) you have entered and asking if you want to delete that record. If you want the program to automatically delete all matching records without asking you about them one by one, press A.

Edit Existing Records

The short Edit menu looks like this. Enter a lookup number or a range and a lookup type. Alternatively, you can select global edit, with or without a range.

```
Edit existing records, select record to edit
Press ESCAPE to exit

Lookup number              ->  :
Lookup type                    :

Enter lookup number
Press ENTER or enter range for global edit
```

If you enter the lookup number and lookup type, the long menu appears, with its fields filled in with that record's data.

If you select global edit, the long menu appears with each field shown with the default (*any*). Replace *any* in one or more fields with the search parameters for the records you want to edit. The program will then search through the lookup file, stopping at each record that meets the search parameters and asking if you want to edit that record. Note that the records will ***not*** be displayed in numeric order.

Edit a record by using the up and down arrow keys to position the cursor at the fields you want to change and enter your changes.

Search and Replace

When you select the ***Search and replace*** item, the long menu appears with each field shown with the (*any*) default. For each field you want to change, replace *any* with the existing value. For instance, if you want to change January 1997 expiration dates to January 1998, enter 1/97 in the expiration field.

Press ⇥ to call up the second Search menu, which in this expiration-date example looks like this:

```
Make the same changes on several records, set replacement values
up/down arrows move cursor, press -> when done, Press ESCAPE to exit


                                Search for          Replace with
Lookup number                   * (any)             * (leave alone)
Lookup type                     * (any)             * (leave alone)
Tender type                     : (any) ->          : (leave alone)
Tender subtype                  : (any)             : (leave alone)
Account field 1                 : (any)             : (leave alone)
Account field 2                 * (any)             * (leave alone)
Account field 3                 * (any)             * (leave alone)
Exp date                        : 1/97              : (leave alone)
Limitation code                 : (any)             : (leave alone)
Auth code                       : (any)             : (leave alone)
Price level                     : (any)             : (leave alone)
Message                         : (any)             : (leave alone)
Rejection code                  : (any)             : (leave alone)
PIN                             : (any)             : (leave alone)

Enter tender type (0=Club, 1=Checking, 2=Savings, 3=Credit)
replacement value

Press SPACE then ENTER for user entered
_____

```

(The *Search and replace* menu is too long to fit on one screen. If you want to replace the remaining four items, scroll down to them with the down arrow.)

To change the expiration date, press the down arrow until the cursor is beside the expiration-date field in the *Replace with* column and enter 1/98.

After you press ⎯→ to start the search-and-replace operation, the Lookup program begins to search all the records. It stops at the first one that matches the January 1997 expiration date and prompts you:

    Replace this record? (y/n or A=replace all matching records without
    prompting).

Follow the instructions. The bottom of the screen will show the percentage of records that the program has examined for a match to your search parameters.

Merge Updates to/from File

The Merge menu looks like this. The Merge menu, in general, applies to companies with more than one site. It helps you transfer lookup files, usually from one computer to another.

```
Merge updates to/from file
Merge changes to/from another computer

0. Quit
1. Output everything to ASCII merge file
2. Append changes to ASCII merge file
3. Input from ASCII merge file
4. Merge input from ASCII merge file

Please select from the above menu and press ENTER ->
```

The LOOKUP.DTA file that the data is being transferred from is the *source* file; the LOOKUP.DTA file that will receive the data is the *target* file. The ASCII merge file is the vehicle for transferring the data from the source to the target. (While the output is in ASCII files, these files are not in a form that can be easily read by people; they are designed to be read by another Lookup program.)

Usually, it is not a good idea to update a target LOOKUP.DTA file by simply copying the source LOOKUP.DTA file. Replacing one file with another will change the configuration in the target LOOKUP.DTA file, as well as erase any records that may have come from a third Lookup program. Instead, use the Merge menu items to update LOOKUP.DTA files.

Copying from a Source File

You copy records from a source file with either the *Output everything to ASCII merge file* item or the *Append changes to ASCII merge file* item:
- The *Output everything to ASCII merge file* item lets you copy all records to an ASCII merge file from the source file. Any data in an old version of the ASCII merge file will be erased.

The Lookup program then keeps track of any records you change in the
source file after you use the *Output everything* or *Append change*s item.
- The *Append changes to ASCII merge file* item lets you copy to an ASCII
  merge file all the changes that have occurred in the source file since you
  last used the Output or Append item. The ASCII merge file can then be
  used to create or update the data in target files on other PCs or Site
  Controllers.

When you output or append to an ASCII merge file, you see the long menu
listing the fields. For each field, the default (*replace*) is shown. Replace does
not affect the data to be included in the ASCII merge file; all the data in all
fields will be in the file. Instead, replace indicates whether or not the data for a
given field in the ASCII merge file will replace (overwrite) the data for that
same field when the *Merge input from ASCII merge file* item uses the ASCII
merge file to update a target file.

Output Everything to ASCII Merge File

The Output item starts with a long menu. Each field has the designation
(*replace*) or (*leave*). The very first time you use the Output item, (*replace*) is
shown for each field. If you have used Output before, fields that you changed to
(*leave*) will be shown that way, on the assumption that you may well want to
make the same changes again.

```
Output everything in merge format to file, select fields to merge
Press ESCAPE to exit

Lookup number          * (replace)
Lookup type            * (replace)
Tender type            : (replace)
Tender subtype         : (replace)
Account field 1        : (replace)
Account field 2        : (replace)
Account field 3        : (replace)
Exp date               : (replace)
Limitation code        : (replace)
Auth code              : (replace)
Price level            : (replace)          Require odometer      : (replace)
Message                : (replace)          Require manual #      : (replace)
Rejection code         : (replace)          Require PIN           : (replace)
PIN                    : (replace)          Ask for $ amount      : (replace)

Is all the above correct? [y]
```

If you want to change any of the fields, enter N to respond to the *Is all the
above correct?* prompt. Use the up and down arrow keys to position the cursor
beside the field(s) you want to change. For each field, the prompt *Merge this
field? (y/n)* is displayed.

If you decide not to replace the data in a field in the target file, (*replace*)
changes to (*leave*).

Leave means that, when you use this ASCII merge file for input, the data for
that field in a target file will not be overwritten by the data in this ASCII merge
file.

Make the changes you want, then press ⏎ when you are finished.

When you press ENTER to respond to the ***Is all the above correct? [y]*** prompt, you are asked to enter the name of the ASCII merge file. Do not add an extension to the file's name because .ASC will be added automatically.

The program copies all records to the ASCII merge file. When finished, it displays the number of records processed, which is also the number of records in the lookup file.

If the program encounters a problem in creating the ASCII merge file, an error message appears. The most common problem is a full disk, especially if the output file is on a floppy diskette. Check the disk or diskette, delete some files if necessary, and recreate the ASCII merge file.

Append Changes to ASCII Merge File

This item appends to the designated ASCII merge file all changes that have occurred in the source file since the last time you used the ***Output everything to ASCII merge file*** or ***Append changes to ASCII merge file*** item. Follow the instructions above for the Output item to use this Append item.

Copying to a Target File

Use the Input and Merge items to read data into a target LOOKUP.DTA file via an ASCII merge file created from a source LOOKUP.DTA file.
- The Input item lets you select which fields in the target file will be replaced (overwritten) by the data for those fields in the ASCII merge file.
- The Merge item automatically overwrites all fields in the target file that were tagged with ***replace*** when the Output or Append item was used to make the ASCII merge file.

Input from ASCII Merge File

The version of the long Input menu that you see the very first time you use it shows each field with (***replace***). However, if you have used the menu previously, the changes you made from ***replace*** to ***leave*** will still be shown-the assumption being that what you have done before, you may well want to do again in the same way.

A sample version of the Input menu looks like this:

```
Merge selected fields from ASCII merge file, select fields to merge
Press ESCAPE to exit

Lookup number            * (replace)
Lookup type              * (replace)
Tender type              : (replace)
Tender subtype           : (replace)
Account field 1          : (leave)
Account field 2          : (leave)
Account field 3          : (leave)
Exp date                 : (replace)
Limitation code          : (leave)
Auth code                : (replace)
Price level              : (leave)        Require odometer    : (replace)
Message                  : (replace)      Require manual #    : (replace)
Rejection code           : (replace)      Require PIN         : (replace)
PIN                      : (replace)      Ask for $ amount    : (replace)

Is all the above correct? [y]
```

Replace means that the current data for that field in the target LOOKUP.DTA file will be overwritten by the data in the ASCII merge file.

Leave means that the data for that field in the target LOOKUP.DTA file will not be changed by the data in the ASCII merge file.

To change fields, answer the *Is all the above correct? [y]* prompt by entering N. Use the up and down arrow keys to position the cursor by each field you want to change, then respond to the *Merge this field? (y/n)* prompt. At the end of the menu or when you press ⟶ , you will again be asked if all the above is correct.

When you press ENTER at the *Is all the above correct? [y]* prompt, you are prompted:

    Enter filename of ASCII merge file without the extension (.ASC assumed)

When you enter a filename, the Lookup program processes the ASCII data and copies the fields you indicated to the target LOOKUP.DTA file. When finished, it displays the number of records processed, which is also the number of records in the ASCII merge file.

Merge Input from ASCII Merge File

As explained above, the *Input from ASCII merge file* item lets you override the replace/leave choices that were made when the ASCII merge file was created. *The Merge input from ASCII merge file* item does not let you override those choices.

The long menu is displayed with all fields shown as *replace*, and you are asked for the name of the ASCII merge file to merge from. When you enter the name, the merging process automatically starts.

List Records

Three of the List menu items-List records to a text file, Unsorted list of records, and Sorted list of records-place lookup records in a text file or on the screen. These three items each use two long menus.

```
List lookup records
List records in various forms

0. Quit
1. List records to a text file
2. Display a text file
3. Unsorted list of records
4. Sorted list of records

Please select from the above menu and press ENTER ->
```

- The first long menu shows each Lookup field with either *print* or *skip*; use this menu to specify which fields will be included in the list you are compiling. For instance, you might reduce the screenful of fields to, say, only 3 or 4 fields.
- The second long menu sets search parameters for which fields are to be included in the file you are compiling; each field starts with *any*, and you change that to limit the included records-for example, only those with an expiration date of 6/99 and a price level of 2.

Unlike the ASCII merge files created in the Merge menu, the files created in the List menu can be easily read by people.

List Records to a Text File

This item copies (or "prints") records to a file. The file is stored under a filename with a .PRT extension.

You will usually use this item if you want to subsequently print the text file on a printer or display it on the screen. You would first list selected records to a file, then later print the file at a printer or use the *Display a text file* item to put it on the screen.

Here is a sample of the first List records menu:

```
Sorted list of records to text file, select fields to print
Press ESCAPE to exit

Lookup number                  * (print)
Lookup type                    * (print)
Tender type                    : (print)
Tender subtype                 : (print)
Account field 1                : (skip)
Account field 2                : (skip)
Account field 3                : (skip)
Exp date                       : (print)
Limitation code                : (print)
Auth code                      : (print)
Price level                    : (skip)      Require odometer  : (skip)
Message                        : (skip)      Require manual #  : (skip)
Rejection code                 : (skip)      Require PIN       : (skip)
PIN                            : (skip)      Ask for $ amount  : (skip)

Is all the above correct? [y]
```

The version of the List records menu you see the very first time you use it shows each field with (*print*). However, if you have used the menu previously, the changes you made from *print* to *skip* will still be shown-the assumption being that what you have done before, you may well want to do again in the same way.

If you want to change any of the fields, enter N to respond to the ***Is all the above correct?[y]*** prompt. Use the up and down arrow keys to position the cursor beside any field whose status you want to change from *print* to *skip*. Those fields will not be copied to the file you are creating.

When you press ENTER to respond to the ***Is all the above correct? [y]*** prompt, a second long menu is displayed:

```
Sorted list of records to text file, select fields to match
up/down arrows move cursor, press -> when done, Press ESCAPE to exit

                          Search for
Lookup number           ->   : (any)
Lookup type                  : (any)
Tender type                  : (any)
Tender subtype               : (any)
Account field 1              : (any)
Account field 2              : (any)
Account field 3              : (any)
Exp date                     : 6/99
Limitation code              : (any)
Auth code                    : (any)
Price level                  : 2          Require odometer   : (any)
Message                      : (any)      Require manual #   : (any)
Rejection code               : (any)      Require PIN        : (any)
PIN                          : (any)      Ask for $ amount   : (any)

Enter lookup number or range
```

Enter the parameters to designate which records you want the new file to be compiled from, such as the example cited above of an expiration date of 6/99 and a price level of 2.

When you finish entering fields to match and press ⟶, you are prompted to enter the filename of the output file without an extension (.PRT will automatically be added as the extension).

Display a Text File

Use the Display item to display on the screen files that you created with the ***List records to a text file*** item. You can use this item to inspect a file before sending it to the printer.

When you select this item, you see this prompt:
    Enter filename to list

When you enter a filename, include its extension. That file will then be displayed on the screen. Note that the bottom lines of the display contain these instructions:
    Display contents of file filename. ### lines found
    Use arrows to scroll screen, Press ESCAPE to exit.

Use the cursor arrow keys to display any parts of the file that might run off the screen-either to the right if the line length is too long, or down if there are too many records for one screen.

If you enter the name of a file that does not exist, this message appears:
    File filename not found, please re-enter

Unsorted List of Records

The Unsorted item creates a list of ***unsorted*** records and displays it on the screen (or "prints" it to the screen).

The first time you use this item, the long menu will be displayed with all fields at the (print) default:

```
Unsorted list of records on the screen, select fields to print
Press ESCAPE to exit
Lookup number          * (print)
Lookup type            * (print)
Tender type            : (print)
Tender subtype         : (print)
Account field 1        : (print)
Account field 2        : (print)
Account field 3        : (print)
Exp date               : (print)
Limitation code        : (print)
Auth code              : (print)
Price level            : (print)      Require odometer        : (print)
Message                : (print)      Require manual #        : (print)
Rejection code         : (print)      Require PIN             : (print)
PIN                    : (print)      Ask for $ amount        : (print)

Is all the above correct? [y]
```

If you have used this item before, any changes you made from ***print*** to ***skip*** will still be shown-the assumption being that what you have done before, you may well want to do again in the same way.

If you want to change any of the fields, enter N to respond to the ***Is all the above correct? [y]*** prompt. Use the up and down arrow keys to position the cursor beside any field whose status you want to change from ***print*** to ***skip***.

When you press ENTER to respond to the ***Is all the above correct? [y]*** prompt, a second long menu is displayed:

```
Unsorted list of records on the screen, select fields to match
up/down arrows move cursor, press -> when done, Press ESCAPE to exit


                             Search for
Lookup number           ->      : (any)
Lookup type                     : (any)
Tender type                     : (any)
Tender subtype                  : (any)
Account field 1                 : (any)
Account field 2                 : (any)
Account field 3                 : (any)
Exp date                        : (any)
Limitation code                 : (any)
Auth code                       : (any)
Price level                     : (any)        Require odometer      : (any)
Message                         : (any)        Require manual #      : (any)
Rejection code                  : (any)        Require PIN           : (any)
PIN                             : (any)        Ask for $ amount      : (any)

Enter lookup number or range
```

When you finish entering fields to match and press ⟶, the program starts processing the lookup file. When it finishes, it will automatically display the list on the screen.

Sorted List of Records

The Sorted item performs the same function in the same way as the Unsorted item except that the records are sorted by lookup number.

Configuration

Use this configuration menu to set the three account fields to be whatever you want.
Enter:
- the new name of each field (to replace Field # name)
- the prompt that you want to have displayed on the long menu when the cursor is at this field
- the length of the field (the number of digits to be entered into the field when you are filling out records). If you change the length of any of the fields or the primary code, you must then use the Optimize item to change all the records to match the new lengths.

```
Set global parameters
up/down arrows move cursor, press -> when done, Press ESCAPE to exit

Field 1 name                ->:
Field 2 name                  :
Field 3 name                  :
Field 1 prompt                : Enter acct field 1
Field 2 prompt                : Enter acct field 2
Field 3 prompt                : Enter acct field 3
Field 1 length                : 6
Field 2 length                : 9
Field 3 length                : 4
Primary lookup length         : 5

Enter field 1 name
```

If you want to use only two fields, set the length of field 3 to 0. If you want to use only one field, set the length of fields 2 and 3 to 0.

When you have changed the three fields on the Configuration menu, your changes to names and prompts will automatically show up on all long menus in the Lookup program.

The ***Primary lookup length*** item sets how long, in digits, the primary part of a code card's lookup number will be. For example, a primary lookup length of 5 would mean that the primary part of lookup number 984638729 is 98463.

Optimize

When you select the Optimize item, a prompt similar to this one appears on the screen.

```
Optimize file or change size of file

Enter the maximum file size in records
(at least 80 records recommended, 40 required)
or Press ENTER to leave it at 100:
```

The number of records recommended and the number required will change depending on how many records you have already created. The more you have created, the higher those numbers will be.

For technical reasons, you usually want twice as many records as the number that have been created. The maximum you can have is dependent on how much space is available on your disk.

Use optimization to increase the number of records. You can also use optimization, without changing the number of records, to speed up the program whenever searches through the lookup file seem slower than usual-for instance, when a customer has to wait several seconds for approval after swiping her card, or when you have to wait longer to locate a specific record when editing the lookup file.

You must always optimize whenever you use the configuration menu to change the length of any of the three account fields or the primary code.

13 – Fuel Allocation and Miles-Per-Gallon

Fuel Allocation

The SC III allows you to allocate a set amount of fuel to a customer or group of customers with proprietary cards. The allocation number is a field on the proprietary card. The SC III uses allocation totalizers to track the amount used. When all of the allocated amount has been used, the Site Controller denies access to the customer or customer group.

You can use a fuel allocation system to ration fuel or to ensure that only a designated amount of fuel will be available to a specific customer group.

This chapter explains how to set up and maintain an allocation system.

Do not confuse this type of allocation with hourly allocation. Hourly allocation limits the amount of fuel that may be accessed by a card within a specified time period. It applies to bank cards as well as proprietary cards. Hourly allocation is set up in the Site Controller configuration. (Refer to the Cumulative Limit Time parameter in the *System parameters* chapter of MDE-4314 CFN III Configuration Manual for details.)

How to Set Up an Allocation System

To set up an allocation system:
- Determine the allocation numbers you want to use, and the number of gallons (or litres) or dollars you want to assign to each one. Refer to the allocation bulleted list below to help you decide how you want to allocate fuel.
- Decide the length of the allocation numbers and the location of the allocation number within the card account number (for more information, see the *Proprietary cards* chapter in this manual and the *Allocation Account Offse*t parameter in the *System parameters* chapter of MDE-4314 CFN III Configuration Manual).
- Encode the allocation numbers on the cards in the location you decided. The allocation numbers can be from 0 through 32,766. The allocation field must be the same length on all cards.
- Configure the Site Controller for the maximum number of allocation numbers you will use, the number of digits in allocation numbers, and the location of the allocation number within the card account number. The SC III maintains allocation totalizers only for allocation numbers currently defined. Configure for as many allocation numbers as you will need; you can remove one temporarily if you are not currently using it. However, do not configure for more than you plan to use eventually since extra numbers needlessly take up memory space.

• Use the commands in the rest of this chapter to maintain the amounts in the allocation totalizers.

Allocations

You can allocate either dollar amounts or gallon (or litre) amounts on each allocation number. Before you decide which units to use, consider the following:

• The highest dollar amount you can allocate is $99,999.99. The highest gallon (or litre) amount is 99,999.999.
• It is usually more practical to use the same units (either dollar or volume) for all allocation numbers, so that the grand total in the PRINT ALLOCATION printout (see below in this chapter) is meaningful and does not mix dollar and volume subtotals.
• Gallon allocation applies to fuel sales only. Merchandise sales do not affect gallon totalizers. Dollar allocation applies to both fuel and merchandise.
• If you specify the allocated amount in gallons, use gallons also as the units for pump limits (defined in configuration), fill limits (entered with the LOAD CUTOFF command), and card limits (entered with the LOAD LIMITATION command).
• Some multi-product dispensers allow only dollar allocations, limitations, pump fill limits, etc. Sites with this type of multiproduct dispenser must use dollar allocation. If these sites try to use gallon allocation, transactions on accounts with allocation will always act as if they exceeded allocation.

How to Initialize the Allocation File

CAUTION

Do **not** use this command after you have set up your allocation system. It erases all your allocation information and you will have to enter it all again!

Before you set up allocation numbers in the SC III, you must initialize the allocation file. Initializing the file erases all the information currently in it. That means you begin without any cards on an allocation system.

```
REMOVE ALLOCATION;A (REM AL;A)

R* REMOVE ALLOCATION;A ↵
R*
```

Type: REMOVE ALLOCATION;A to initialize the allocation file.

How to Set Up Allocation Numbers

Use the command LOAD ALLOCATION or LO AL to set up the allocation numbers and the initial dollar or gallon (or litre) amount you want allocated to each one. For dollar allocation, precede the amount by a dollar sign. For gallon (or litre) allocation, omit the dollar sign.

You can enter a single number to affect one group of cards-in other words, all the cards that have that allocation number-or a range of numbers to affect several groups of cards. If you enter a range of numbers, the amount you specify will be allocated for each number in the range. To enter a range of numbers, type the first number in the range, then a hyphen, then the last number.

This example shows how to set up an allocation number of 145 with an initial amount of 100 gallons. You can use the C option with the command LOAD ALLOCATION to set up more than one allocation number or range at a time.

```
LOAD ALLOCATION (LO AL)

R* LOAD ALLOCATION ↵
Allocation no.? 145 ↵
Amount? 100.000 ↵
R*
```

This example shows how to set up a single allocation number, then a range, and how to enter the dollar amount allocated to both.

```
R* LOAD ALLOCATION;C ↵
Allocation no.? 123 ↵
Amount? $250.00 ↵
Allocation no.? 300-310 ↵
Amount? $120.00 ↵
Allocation no.? ↵
R**
```

How to Change Allocated Amounts

To change an allocated amount, you add to or subtract from the amount currently remaining in the allocation totalizer. You do not specify the units (dollars or gallons). The SC III adds or subtracts the value you specify, using the same units you used when you first set up the allocation number. If you include a dollar sign, the Site Controller ignores it.

Use the command ADD ALLOCATION or AD AL to add an amount to the amount currently remaining in an allocation totalizer. You can add to a single number or a range of numbers. If you enter a range of numbers, the amount you specify will be added to the current amount for each number in the range. To enter a range of numbers, type the first number in the range, then a hyphen, then the last number.

The example below shows how to add 23.50 units to the totalizer used for allocation number 145.

```
ADD ALLOCATION (AD AL)

R* ADD ALLOCATION ↵
Allocation no.? 145 ↵
Amount? 23.50 ↵
R*
```

You can use the C option with ADD ALLOCATION to add to more than one allocation totalizer at a time. The example shows how to add to a single number and a range of numbers with one command.

```
R* ADD ALLOCATION;C ↵
Allocation no.? 123 ↵
Amount? 40 ↵
Allocation no.? 300-310 ↵
Amount? 120 ↵
Allocation no.? ↵
R*
```

Use the command SUBTRACT ALLOCATION or SU AL to subtract an amount from the amount currently remaining in an allocation totalizer. You can subtract from a single number or a range of numbers. If you enter a range of numbers, the amount you specify will be subtracted from the current amount for each number in the range. To enter a range of numbers, type the first number in the range, then a hyphen, then the last number.

The example shows how to subtract 23.50 units from the totalizer used for allocation number 145.

```
SUBTRACT ALLOCATION (SU AL)

R* SUBTRACT ALLOCATION ↵
Allocation no.? 145 ↵
Amount? 23.50 ↵
R*
```

You can use the C option with SUBTRACT ALLOCATION to subtract from more than one allocation totalizer at a time. The example below shows how to subtract from a single number and a range of numbers with one command.

```
R* SUBTRACT ALLOCATION;C ↵
Allocation no.? 123 ↵
Amount? 40 ↵
Allocation no.? 300-310 ↵
Amount? 120 ↵
Allocation no.? ↵
R*
```

How to Print Currently Allocated Amounts

You can print a listing of all your current allocation numbers, the amount still remaining in the totalizer for each one, and a grand total remaining in all totalizers. Note that the grand total makes sense only if all your allocations are in the same units, either dollars or volume. Use the command PRINT ALLOCATION or P AL, without any options, to print the listing. This example shows how to print the listing for all allocation numbers, and it shows a sample listing in dollar units.

```
PRINT ALLOCATION (P AL)

R* PRINT ALLOCATION ↵

          Product Allocation
1   $432.65    4    $35.56     6 $237.89
7   $154.00    8   $211.34     9 $187.65
11   $94.13   12   $165.92    13 $305.02
            Total = 1824.160
R*
```

To limit the scope of the report by specifying a range of allocation numbers,type:
PRINT ALLOCATION 100-102.

```
R* PRINT ALLOCATION 100-102 ↵

          Product Allocation
100   432.651   101   654.455  102 12.120
          Total = 1099.226
R*
```

This will list the allocation numbers 100 - 102, with gallon units.

How to Remove an Allocation Number

You can remove a single allocation number or a range of numbers from the allocation file. It is not necessary for all the numbers within a range to be defined before you can remove the range. If you remove a range of numbers, all the currently defined numbers within that range are removed.

If you remove an allocation number that is encoded on one or more cards, the SC III treats those cards as if there were no allocation number encoded on them. This means that fuel can be pumped on the card until some other limitation, such as a pump fill limit, is reached.

Removing an allocation number is not the same as allocating a zero amount for an allocation number. Allocating a zero amount locks out all cards with that number encoded on them.

Type: REMOVE ALLOCATION

```
REMOVE ALLOCATION (REM AL;C)

R* REMOVE ALLOCATION;C ↵
Allocation no.? 23 ↵
Allocation no.? 100-199 ↵
Allocation no.? ↵
R*
```

You may use the C option with the command REMOVE ALLOCATION to remove more than one number or range of numbers at a time.

Miles Per Gallon System

The miles-per-gallon system is part of the Fleet Options package (which is briefly described in "SC III Optional Packages" on page 245). The MPG system tracks fuel-usage information for customers who use cards. It tracks the total fuel used during a period, and it can also track the miles per gallon and the dollars spent per mile. For the MPG system to work properly, the customer must fuel at your site every time.

How to Set Up an MPG System

You set up the system by assigning a vehicle number to each customer with a proprietary card or bank card, then tracking the fuel-usage information by vehicle number. This means you can provide this service to all customers who use cards to purchase fuel.

There are two ways for the vehicle number to be entered during a fuel purchase. It can be encoded on proprietary cards, so the number is entered automatically when the card is read. Or, you can have the customer enter the number manually at the card reader. For customers who use bank cards, the number must be entered manually.

To set up the system, follow these steps:
- In the SC III configuration, define the number of digits in the vehicle number and the location of the vehicle number within the account number. Refer to the chapter on *System parameters* in MDE-4314 CFN III Configuration Manual for instructions.
- Encode a unique vehicle number on each proprietary card in the location you specified in configuration. Make sure you keep track of the vehicle numbers you assign and the customers to whom they are assigned.
- If you want to track only the fuel usage, and not miles driven, set up the reader terminal to not request the odometer reading, set up the proprietary card restriction code to not require an odometer entry, set retries to 0, and use the LOAD VEHICLE command explained in this chapter to enter an initial odometer reading of zero for all vehicle numbers.
- If you want to track odometer readings to calculate miles per gallon and dollars per mile, set up the reader terminal to request the customer's odometer reading at the time of sale, but let the odometer entry be optional. Also, configure the Site Controller for the number of times the customer can re-enter the odometer reading to try to be within a reasonable range of the reading at the last fueling, and how the Site Controller will handle an out-of-range entry.
  When a customer enters an odometer reading that indicates the miles driven are outside the range of miles specified in configuration for all vehicles, the Site Controller allows the customer to try again as many times as you specify in configuration. Once the customer has exhausted the retry limit, the Site Controller will accept the reading. The printout for that vehicle will indicate the odometer reading was BAD. The Site Controller can be configured to record a bad odometer reading as a new, valid entry; this will appear on a PRINT VEHICLE printout as NEW.
  If the odometer reading is accepted the first time, the printout shows whether the miles driven were HIGH or LOW.
- If you want to include bank card customers in the system, set up the reader terminal to request the vehicle number at the time of sale.
- If the Site Controller tracks the miles per gallon and dollars per mile, you can set up the reader terminal receipt to print that information.
- Use the commands in this chapter to maintain the vehicle numbers, fueling periods, and odometer readings.

How MPG Information Is Calculated

The MPG information is cumulative. That is, the Site Controller continues calculating the miles driven, fuel usage, and dollars spent based on all the information gathered since the MPG period was last reset. So the Site Controller calculates the average miles per gallon since the MPG period started, rather than just since the last fill-up.

If the Site Controller is configured to record odometer entries even if they are bad, the customer can reset the MPG period for that vehicle number by entering zero miles as the last odometer retry. At the next fueling, the odometer reading the customer enters becomes the initial reading for the period. When this happens, the vehicle status reported in the printout will be NEW.

This is convenient for a customer who buys a new car, and therefore has an odometer reading outside the range allowed in configuration. The customer can reset the MPG period and start the new calculations based on the odometer reading for the new car.

How to Set Up Vehicle Numbers

Use the LOAD VEHICLE or LO V command to set up all vehicle numbers for which MPG calculations are to be done. You enter the initial odometer reading for each vehicle. If you enter zero for the initial value, the first odometer reading entered by the customer will be used as the initial value for the MPG period.

You may use the C option with the LOAD VEHICLE command to set up more than one vehicle number at a time.

The example shows how to set up a vehicle number so the customer's first odometer entry will be used as the starting value for that vehicle. This is the same as resetting the MPG period for the vehicle.

```
LOAD VEHICLE (LO V)

R* LOAD VEHICLE ↵
Vehicle number? 100 ↵
Odometer reading? 0 ↵
R*
```

How to Reset MPG Period for All Vehicles

When you reset the MPG period, the Site Controller starts a new set of readings. That is, the cumulative totals for miles per gallon and dollars per mile start anew. So, the information since the last fill-up becomes the complete MPG information for the period.

Use the command LOAD VEHICLE;A to reset the MPG periods for all vehicles. The ending odometer reading becomes the beginning reading for the new period, the number of gallons is set to zero, and the status of the vehicle number is NEW.

```
R* LOAD VEHICLE;A ↵
R*
```

How to Print MPG Report

Use the command PRINT VEHICLE or P V to print the MPG report. The MPG report lists the vehicles numbers, and for each vehicle number, it gives:

|	
B Odom	The vehicle's beginning odometer reading for the MPG period.
E Odom	The vehicle's ending odometer reading for the MPG period.
Miles	The number of miles driven this MPG period.
Gals	The number of gallons used during this MPG period.
Cost	The amount spent (at the current price) during this MPG period.
MPG	The average miles per gallon for this period.
$/Mile	The average dollars per mile for this period.

If the status of the vehicle is NEW, HIGH, LOW, or BAD, the status is also printed on the report. For example:

```
                        PRINT VEHICLE (P V)

R* PRINT VEHICLE ↵
Vehicle     B Odom      E Odom     Miles      Gals      Cost      MPG     $/Mile
     10     7536.8      7732.1     195.3      7.81      7.61     25.0      0.038
     11     9320.4      9530.7     210.3      9.31      9.04     22.6      0.042
     12     8021.3      8313.4     292.1     10.11      9.93     28.9      0.033
     13     8421.5      8725.6     304.1     11.21     10.94     27.1      0.035
     14                                                                              New
R*
```

How to Remove a Vehicle Number

When you remove a vehicle number from the MPG system, the Site Controller no longer tracks the fuel-usage information for that vehicle. Use the command REMOVE VEHICLE or REM V to remove a vehicle from the MPG tracking.

```
REMOVE VEHICLE (REM V)

R* REMOVE VEHICLE ↵
Vehicle number : 10 ↵
R*
```

Use the command LOAD VEHICLE with the I option to remove *all* vehicles from the MPG system.

14 – Backup System Data and Disk Files

Why Make Backups?

Backups prevent data disasters!

A backup is a copy of data or files that is kept separate from the original for safety and security. For example, you should make a backup copy of the Site Controller release disk. You should also make backup copies of command files that you use on your Site Controller. Gasboy provides some programs and command files that allow you to back up Site Controller system data. You should use these to back up data that has been loaded into or collected on the Site Controller.

There are several reasons for keeping current backups of files and system data.
- When you install a new release of the operating system, some of the tables that contain system data may be reconstructed and the data will be lost. If you have a current backup, you can restore the data from the backup.
- The software for a Site Controller is supplied on the hard disk and also on a backup floppy disk. During normal system use, any configuration changes or command files that you add to the Site Controller are can be placed on the hard disk. These changes must be copied onto the backup floppy disk to keep your backup current.
- The tables that contain system data may be reconstructed if the Site Controller crashes.
- Data may inadvertently become corrupted through user error.
- Files may be deleted or changed by accident.
- Floppy disks or hard disks can become damaged or corrupted.
- Although unlikely, the system could fall victim to deliberate sabotage.
- In spite of every precaution in the design and installation of the system, it could experience a physical failure (or fire, flood, or other disaster).

To ensure you always have an up-to-date backup, it is a good idea to back up the system data every day. If your site is polled for transactions by a remote system at least once a day, you do not need to back up transactions, as there will be a record of them on the remote system.

The amount of time it takes to back up the system is very small compared to the time it would take to reconstruct the data if a current backup were not available when needed.

At a minimum, you should back up system data before you install a new release, and after you change any system data, such as price or product data.

You should always make a backup copy of the release disk and any other

diskettes that are shipped to you. You should also make a backup copy of FRAMOS.CFG every time you change the configuration, and you should make backup copies of any command files or other important files you create.

Floppy Diskettes

Gasboy recommends that you make backups on double-sided, high-density, 3.5-inch floppy diskettes. Format the diskette before use if you did not purchase pre-formatted diskettes. Pre-formatted diskettes are readily available and will save you the time of formatting. BACKUP requires blank, formatted diskettes.

The Back-up Files

The command files for backing up system data are:

File	Description
SYSBACK.CMD	Command file to back up all system tables in RAM, except transactions, to a file called SYSBACK.DTA.
TRANBACK.CMD	Command file to back up transaction data to a file called TRANBACK.DTA.
BACKTRAN.BIN	Disk-based program to back up transaction data to a file with a name of your choosing.
RESTORE.BIN	Disk-based program to restore system tables and transaction data backed up with SYSBACK, TRANBACK, or BACKTRAN. Note: RESTORE.BIN cannot restore a transaction data file if the size of the trans table has changed between the time of running BACKTRAN and RESTORE.BIN.
INSTALL.CMD	Command file to restore data backed up with HARDBACK.
TAX.BIN	Optional program for setting up tax tables.

All these files are in the C:\SC3\BIN directory.

The batch files used to backup your SC III are:

File	Description
BACKUP	This command is used to backup your SC III onto diskettes. Command file that takes all files excluding .BINs, .EXEs, and HTML files, and using a compression program places them onto floppy diskette(s).
RESTORE	Command file that extractes the files compressed with the BACKUP command and returns the files to the SC3 directory.

How to Back Up System Data

Note: Before backup, run TRANBACK and SYSBACK to backup items in the SC III memory.

The SYSBACK command backs up all the system data. Data will be put in a file called SYSBACK.DTA. Type the command SYSBACK. The backup will take a few minutes.

Replace the disks every three months if you do daily backups. If you do less frequent backups, you do not need to replace the disks as often.

Backing Up SC III Files with BACKUP

1 Log in as Administrator.

2 Run TRANBACK and SYSBACK.

3 Open an NT command window (Select Start->Programs->Command Prompt).

4 Go to the SC3 directory using the command:
C:\ cd SC3

5 Insert a BLANK diskette in the A: drive.

6 At the NT command prompt type:
C:\ BACKUP
You will be prompted to insert diskettes if more than one is necessary.

7 When Backup is completed, quit the command window.

The command will take all files except for any .EXE, .BIN and HTML files, compress them using a compression program and place them on blank diskettes in the A: drive. You do not need to backup the .BIN, .EXE, and HTML files. These can be found on the software CD or diskettes that came with your system.

How to Do a Custom System Backup

The above procedure will back up all system data, but sometimes you may want to back up just a part of the system data. To back up system data, other than transactions, use the following procedure. (It is easiest to do this with a command file.)

1 Shut down the Site Controller with STOP so that the system data does not change while you are doing the backup.

2 Use ENABLE RAW to enable raw mode.

3 Use the PRINT commands with the output redirection options to print the data to a backup file. See "How to Restore System or Transaction Data" on page 144 for examples.

4 Use DISABLE RAW to disable raw mode.

5 Restart the Site Controller with RUN.

In your backup command file, the first PRINT command should use the >
option to redirect its output to the backup file. This will overwrite any old data
in the file. Subsequent PRINT commands should use the >> option to append to
the backup file.

```
R* TYPE MY_BCKUP.CMD ↵
stop
enable raw
print cron;>backup.dta
print drawers;>>backup.dta
print heading;>>backup.dta
print prices;>>backup.dta
print products;>>backup.dta
print pumps;>>backup.dta
print sales;>>backup.dta,A
c123dyt
print sites;>>backup.dta
print tanks;>>backup.dta
print totals;>>backup.dta,A
c123dyt
disable raw
run
R*
```

With PRINT SALES and PRINT TOTALS, be sure to use the A option and to
specify that all totals be printed (usually C123DYT).

How to Back Up Transactions

TRANBACK

You do not need to back up transactions if your site is polled for transactions by
a remote system, since they will already be stored on that system. You also do
not need to back up transactions if you do only cash transactions.

The procedure for backing up transactions is similar to the procedure for
backing up system data. Special transaction backup commands are included on
the applications disk provided with the Site Controller. The command file
TRANBACK.CMD on the applications disk will back up all transaction data.
Data will be put in a file called TRANBACK.DTA.

Shut down the Site Controller with STOP before you back up transactions so
that the transaction data does not change while you are doing the backup. When
the backup is complete, restart the Site Controller with RUN. You may include
these commands in a command file.

BACKTRAN

The BACKTRAN command operates like TRANBACK. The difference is that
TRANBACK backs up data to a file called TRANBACK.DTA, but
BACKTRAN allows you to name the file it creates.

Use the disk-based command BACKTRAN and the redirection option > with
the name of the file the transaction data should be stored in:
BACKTRAN;>*filename*

Because BACKTRAN is a disk command, a copy of it must be in your search
path.

How to Restore Your Backup Data

1 Log in as Administrator

2 Open an NT command window (Select Start->Programs->Command Prompt).

3 Go to the SC3 directory using the command:
C:\ cd SC3

4 Insert the first BACKUP diskette in the A:drive.

5 At the NT command prompt type:
C:\ RESTORE
You will be prompted to insert diskettes if more are needed.

6 When Backup is completed, quit the command window.

RESTORE will extract all compressed data from the backup diskette(s) and
place it in the SC3 directory. This will over write any possibly newer data that
could exist there.

How to Write-protect Backup Diskettes

You should set the write-enable tab on your backup diskette to the write-protect
position before you try to restore data from the diskette. That way, you cannot
accidentally write over or erase the data you are trying to restore. Figure 14-1
shows the write-enable tab and indicates the write-protect position.

When the little window on the disk is open, you cannot overwrite the data
already on that disk. When the window is closed, you can overwrite the data.

Figure 14-1: Floppy Diskette

High density (HD) will have an additional tab here.
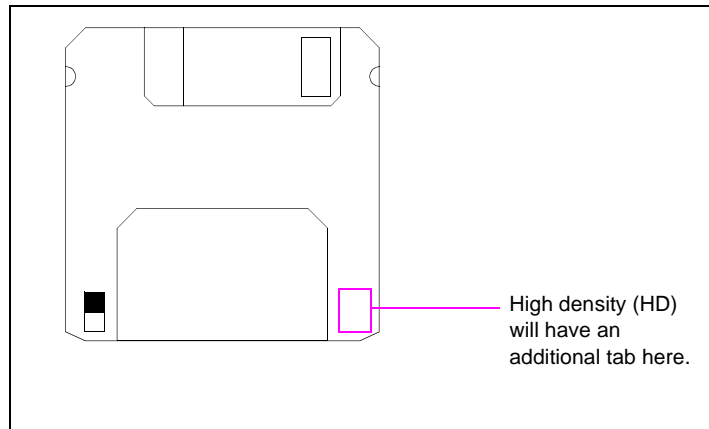
How to Restore System or Transaction Data

Use the command RESTORE to restore system data from backups made with SYSBACK. The RESTORE command also restores transaction data that has been backed up with TRANBACK and BACKTRAN.
Note: RESTORE is a disk command, so a copy of it must be on the hard disk.

You may specify key words with RESTORE to selectively restore only part of a full backup. (A partial backup is handy because you might not want to restore data that is several hours old.) The following list gives the key words that may be used with RESTORE to restore individual tables.

allocation	restores the allocation table from PRINT ALLOCATION.
authorization	(or au) restores the authorization table from PRINT AUTHORIZATION.
cron	restores the cron table from PRINT CRON.
drawers	restores the cash drawer table from PRINT DRAWER.
heading	(or he) restores the receipt heading table from PRINT HEADING.
limitation	restores the fuel limitation table from PRINT LIMITATION.
lockout	restores the card lockout table from PRINT LOCKOUT.
messages	restores the island card reader broadcast messages from PRINT MESSAGE.
phone	restores the dial-out phone number table from PRINT PHONE.
prices	restores the price code table from PRINT PRICE.
products	restores the product table from PRINT PRODUCT.
pumps	restores the pump table from PRINT PUMP.
sales	restores the sales data table from PRINT SALES.
tanks	restores the tank inventory table from PRINT TANK.
totals	restores the sales totals table from PRINT TOTALS.
transactions	restores the transaction data table from BACKTRAN.
vehicles	restores the miles per gallon package vehicle table from PRINT VEHICLE.
tax	restores tax tables.
signon	restores signon information.

The following additional key words may also be used with RESTORE.

corrupt	restores the records contained in a line with a bad checksum; when an error is found, the type of table along with the line number in the file is reported.
everything	restores the entire contents of the backup file.
except	excludes tables that have already been specified.
from *file*	specifies that the tables be restored from the backup file *file* (ex. TRANBACK.DTA). If this keyword is not used, the default file SYSBACK.DTA will be used as the input file.
reconstructed	restores all files that have been reconstructed. It is used to restore files that have been reconstructed when a new release is installed.

If you request that a type of table be restored, but the data for it does not exist in the input file, no error message will be printed. The name of each table type is printed as it is restored.

Below are some examples of commands for restoring system data from backups.
- RESTORE EVERYTHING restores all tables that are backed up in the file SYSBACK.DTA and prints the name of each table as it is restored.
- RESTORE EVERYTHING CORRUPT FROM *filename* (where *filename* is SYSBACK.DTA, TRANBACK.DTA, or whatever you named the backup file you made your custom system backup) restores the records contained in a line, even if they have a bad checksum. When an error is found, the type of table along with the line number in the file is reported.
- RESTORE EVERYTHING EXCEPT TANKS TOTALS FROM *filename* (where *filename* is SYSBACK.DTA, TRANBACK.DTA, or whatever you named the backup file restores all tables that are backed up in the file *filename* except tanks and totals tables, and prints the name of each table as it is restored.
- RESTORE RECONSTRUCTED restores all tables that are backed up in the file SYSBACK.DTA and that have been reconstructed. This is useful after installing a new release of the software that has caused some tables to be reconstructed.
- RESTORE TRANSACTIONS FROM *filename* (where *filename* is TRANBACK.DTA, or whatever you named the backup file you made with BACKTRAN) restores the transaction table that has been backed up with TRANBACK or BACKTRAN.
- RESTORE PUMPS PRODUCTS PRICES restores the pump, product, and price tables from the file SYSBACK.DTA.

15 – SC III File System

The SC III file system is compatible with NT version 4.0 and greater. This chapter is a basic introduction to files and the Site Controller file system. It contains the information you need to use files on the Site Controller, but it is not an exhaustive study of NT or MS-DOS®-type file system the Site Controller uses. For more complete information about NT or MS-DOS file system, refer to one of the many books available about NT or MS-DOS.

The Site Controller files reside in a directory called SC3 on the C: drive of your PC (C:\SC3\). To check the files use the following command in the CFN3 command window:
R* dir C:\SC3\

A listing of the file will scroll on the screen. You can not change drives from the R* prompt but you can view other drives and their directories.

To check the drive with NT, use Windows NT Explorer.

1 Click once on the Start button with the left mouse button.

2 From the menu displayed, click once on Programs.

3 Click once on Windows NT Explorer. A window will open.

4 Double click on the C: drive.

5 From the folders listed, double click on SC3. The contents will appear on the righthand side of the window.

What Is a SC III File

A SC III file is a collection of data stored on a disk and given a filename. A file can contain:
- a program you can execute
- a set of Site Controller commands you can execute as a group
- data you want to store, such as backup system data, printouts of sales or other information, or hand-entered data or messages.

Filename Restrictions

Filenames for SC III files follow the NT or MS-DOS conventions. Names can be eight characters long, plus a three-character extension. The name and extension are separated by a period.

The following characters are allowed in NT or MS-DOS filenames:
A-Z 0-9 ! @ # $ % ( ) ' ' - ~ { }

The following characters are not allowed in NT or MS-DOS filenames:
* = + [ ] ; : " | \ / , < >?

The SC III does allow some of these characters, but you should avoid using them to maintain NT or MS-DOS compatibility.

Filename Extensions

For executable files, the SC III uses a different extension than NT or MS-DOS does, to avoid confusion between the two systems. Command files (also called batch files) for the SC III use the extension .CMD (similar to NT). Executable files use the extension .BIN.

Extension	File Type
BIN	executable program
CMD	interpretable list of commands
CFG	system configuration file - **NEVER DELETE!**

CAUTION

Never delete a file with a .CFG extension!

Wildcards in Filenames

You can use wildcard characters to match a group of filenames. A ? (question mark) matches any single character. For example, ??.TXT matches all filenames with two letters and the extension TXT.

An * (asterisk) matches one or more characters up to the end of the filename, or up to the extension if there is one. For example, *.* matches every filename and extension, *.DTA matches every filename with the extension DTA and PR*.CMD matches every filename that begins with PR and has the extension CMD.

The File System

The SC III uses a hierarchical file system similar to the file system used by NT ver 4 and greater or MS-DOS version 2.0 and later versions, such as 3.3 and 6.0. This type of file system is often described as being like a tree, with a root and branches. The file system is made up of directories, and each directory can contain files and further directories-thus the tree-branching analogy. (The structure is really more like a bush, since it has no trunk.)

Different directories may contain files having the same filenames. In order to uniquely identify a file, its full name-called the pathname-is used. The pathname includes the directory (and any subdirectories) that contains the file; for example:

/directoryname/subdirectoryname/filename.

The root directory is called / (slash) on the SC III and directory names are separated by a /. (On NT or MS-DOS systems \ [a backslash] is used instead of /.) So, for example, the filename /BIN/TREE.BIN refers to the file TREE.BIN in the directory BIN under the root directory (/). Figure 15-1 shows this directory structure.

Figure 15-1: Sample Directory Tree Structure
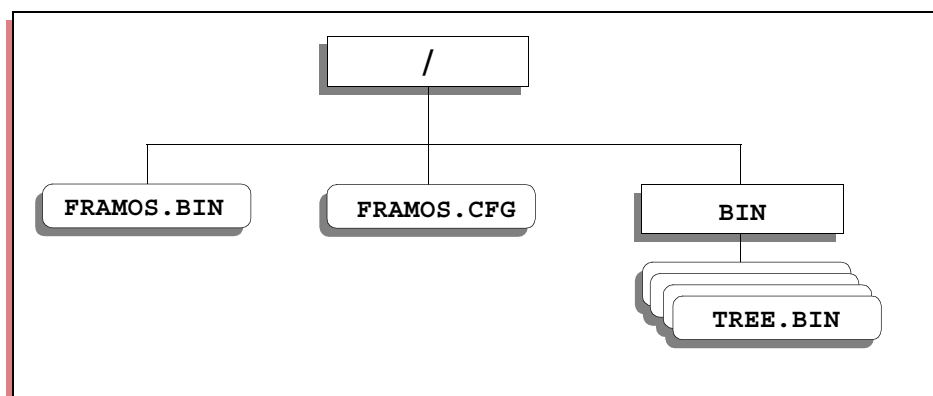
There are two special directory names: . (dot) and .. (dot dot). The . (dot) represents the current directory, and .. (dot dot) represents the parent directory (one level up) of the current directory.

The current directory is the directory you are in at the present time. Whenever the SC III is turned on, one directory is always the current directory (just as whenever you are inside a house, you are always in one room or another).

You can give a full pathname or relative pathname (using the dots and slash) to name a file that is not in the current directory. For example, ../FRAMOS.BIN names the file FRAMOS.BIN in the parent of the current directory, and / FRAMOS.BIN names the file FRAMOS.BIN in the root directory.

Disk Drive Names

Disk drives are referred to by drive letter. The disk drive names are as follows:

Name	Description
A:	First floppy disk drive
B:	Second floppy disk drive (if present)
C:	Hard disk drive
D:	CD-ROM drive
R:	RAM disk
P:	SC3 root directory

Each drive has its own file system. This means there is a root directory on each drive. The "R" drive represents your site controller.

How to Specify Files on Other Drives

To specify files on a drive other than the current drive, put the drive letter, followed by a colon (:), before the pathname. For example, TYPE A:PR_DATA.CMD will print the contents of the file PR_DATA.CMD in the root directory on the A drive. You do not need to include the initial / before the pathname when you specify the drive name, but it is allowed. The command TYPE A:/PR_DATA.CMD is equivalent to the command above.

Site Controller Files

You can create files containing either data or a list of commands that can be executed. All SC III files are stored on disk.

You can use files to:
- Record manually collected data such as dipstick readings.
- Record messages, such as a file of instructions for each employee or each shift.
- Save data from Site Controller commands, such as transaction and sales totals. See "Making Your Own Commands" on page 173 for information about how to save the output of Site Controller commands in a file.
- Record a sequence of commands that is executed when the name of the file is typed as a command. You can use command files for frequently executed sequences of commands, such as the commands executed at shift changes. See "Making Your Own Commands" on page 173 for information about how to create and use Site Controller command files.

How to Create Site Controller Files

There are several ways to create user files. You can use the RECORD or REC command, use a text editor, save output from commands in a file or download a file from a another computer. This section covers the use of the RECORD command. Use the NT text editor that comes with your PC or the SCIII editor FRED, which is covered in a separate chapter. "Making Your Own Commands" on page 173 explains how to save the output of Site Controller commands in a file. ***Do not use blank spaces in a file name.***

```
RECORD (REC)

R* RECORD ↵
File name? PRDATA.CMD ↵
Data? PRINT DATE ↵
Data? PRINT DRAWER ↵
Data? PRINT TANK ↵
Data? ^C ↵
R*
```

RECORD without any options creates the specified file or appends to it if it already exists. RECORD;I creates the specified file or overwrites it if it already exists. The command will prompt for the filename and each line of data to be entered in the file.

To terminate the RECORD command, type ^C or a period (.) by itself at the beginning of a line, right after the *DATA?* prompt.

```
R* RECORD ↵
File name? DIPSTICK ↵
Data? 2/8/95 TANK 1 5530 ↵
Data? 2/8/95 TANK 2 4230 ↵
Data? ^C ↵
R*
```

```
R* RECORD ↵
File name? MSG1 ↵
Data? RESTOCK THE POTATO CHIPS ↵
Data? THANKS, DAN ↵
Data? . ↵
R*
```

How to Print the Contents of Files

Use the command TYPE or TY to print the contents of a file. You must specify the name of the file on the command line (the command line is the line starting with the name of the current drive and an asterisk; for example, R*); you will not be prompted for the name of the file.

```
TYPE (TY)

R* TYPE PRDATA.CMD ↵
PRINT DATE
PRINT DRAWER
PRINT TANK

R* TYPE DIPSTICK ↵
2/8/95 TANK 1 5530
2/8/95 TANK 2 4230

R*
```

How to Remove User Files

Use the command DELETE or DEL to remove user files. You must specify a filename on the command line; you will not be prompted for it. You may specify more than one file to delete. You do not need to use the C option with DEL.

```
DELETE (DEL)

R* DELETE PRDATA.CMD ↵
R*
```

How to Copy Files

Use the command COPY (COP) or CP to make a copy of a file. You must specify the original file and the file to copy to on the command line. (The command line is the line starting with the name of the current drive and an asterisk; for example, R*). If you do not specify the filenames, you will not be prompted for them.

```
COPY (COP)

R* COPY PRICE.CMD PRICE.BAK ↵
R*
```

```
CP

R* CP PRICE.CMD BIN/PRICE.BAK ↵
PRICE.CMD copied to PRICE.BAK
R*
```

You can use the wildcards ? and * with either copy command. The commands can copy files between directories, but you must use full pathnames.

CP without Error Messages

The CP command with the I option suppresses error messages. CP;I silently skips copying any files it is told to copy that do not exist. For example, if there is no NOPE.TXT file, then the CP command without the I option results in an error message.

```
R* CP R:NOPE.TXT A: ↵
Can't find NOPE.TXT
R*
```

```
R* CP;I R:NOPE.TXT A: ↵
R*
```

With the I option, there is no error message. The I option is useful in command files when you are copying files, some of which may legitimately be absent. In such cases, this option avoids confusing error messages.

How to Rename Files

Use the command RENAME or REN to change the name of a file. You must specify the original filename and the new filename on the command line. If you do not specify the filenames, you will not be prompted for them.

```
RENAME (REN)

R* RENAME PRICE.CMD PRICE.BAK ↵
R* *
```

If you are not in the directory where the original file is located, you must also specify the original file's path.

When you use the COPY command, you end with two identical copies of the same file, but under two different names. With RENAME you end up with only one copy of a renamed file.

With RENAME, both the original file and the new file must be in the current directory. Use RENAME;A (described in the following section) when different directories are involved.

How to Move Files Between Directories of the RAM Drive

Use the RENAME;A command to move a file to a different directory. You must specify the original filename and the new filename on the command line. If you do not specify the filenames, you will not be prompted for them.

```
R* RENAME;A TEST.CMD /
LOADTEST.BAK ↵
R* *
```

CAUTION

If a file already exists in the destination directory with the name you have chosen for the destination file, the existing file will be *overwritten*.

Provide the path for whichever of the two directories, original or destination, you are not currently in. If you are in a third directory, provide the path for both the original and destination files.

When you use RENAME;A to move a file from one directory to another, you do not have to choose a different name for the destination file. Both the original and destination filenames can be identical; only the paths will change.

How to Set Permissions of Files

The SET_PERM command allows you to control which users have access to which disk-based command files.

Here is a summary of the SET_PERM command:

SET_PERM disk-based command to change file attributes and permissions.

Options: [-R] [-H] [-N] [-*Uuser_no*][-P*perm_leve*l] *file1* [*file2*]

[-R] *file1* [*file2*]	sets read-only status on *file1* [*file2*]
[-H] *file1* [*file2*]	sets hidden status on *file1* [*file2*]
[-N] *file1* [*file2*]	allows any user to execute the disk-based command(s) *file1*, *file2*, etc.
-U*user_no file1* [*file2*] ...	only user number *user_no* may execute the disk-based command(s) *file1*, *file2*, etc.
-P*perm_level file1* [*file2*] ...	only users having a permission level greater than or equal to *perm_level* may execute the disk-based command(s) *file1*, *file2*, etc.

After changing permissions, run SET_PERM to confirm your settings.

```
R* SET_PERM ↵
File          Read only    Hidden      User      Perm
FRAMOS.BIN    NO           NO          Any       0
R*
```

Note: Permission levels do not affect .CMD files.

Using SET_PERM on the CFN III

Files that reside on the hard disk of the Site Controller are not accessible from the RAM drive (R*). To set permissions on disk based commands that reside on your C: drive.

1 Copy the files onto the RAM drive.

2 Run the command SET_PERM.

3 Copy the files from the RAM drive back onto your C: drive.

Directory Commands

How to List Files in a Directory

Use the command DIRECTORY or DIR to print a listing of files in a directory. You can specify the name of one or more directories to list. If you do not specify a directory, the listing for the current directory will be printed. The SC3 files are located on the C: directory of your hard disk. This is an example, your site will have more files.

```
DIRECTORY (DIR)

R* DIRECTORY C: ↵

9-18-99 4:58p          <DIR>      C:\SC3\.
9-18-99 4:58p          <DIR>      C:\SC3\..
9-29-99 6:59a               0     C:\SC3\SC3.LOG
9-25-99 1:04p          487808     C:\SC3\FRAMOS.BIN

(the list will continue down the screen)
R*
```

Note: For commands, like DIRECTORY, whose output may fill more than a screen, you can stop the data from scrolling off the screen by using the scroll lock key. Press ENTER to resume the scrolling.

Use DIRECTORY;A to list hidden files or directories on the RAM drive only. When you list a directory other than the root directory, the directories . and .. will be listed with DIRECTORY;A.

How to Print a Short File List

Use DIRECTORY;I to print a directory listing that includes only file and subdirectory names. This is only an example, your site will have more files.

```
DIRECTORY (DIR)

R* DIRECTORY;I C: ↵

Directory
SC3.EXE       DEMO.BIN    SC3.sys    SC3.exe    FRAMOS.BIN
FRAMOS.CFG    BIN         PROM       LOCAL

R*
```

How to List All Files Below a Directory

DIRECTORY lists files in the current directory or in a specified directory, but if other directories are under that directory, you have to use DIRECTORY again to list them. The disk-based command TREE lists all the files on the R* RAM drive and any subdirectories only.

```
R* TREE ↵
RESTORE.BIN
BACKTRAN.BIN
SYSBAC K.CMD
TRANBACK.CMD
TREE.BIN

R*
```

How to Create Directories

Use the command MKDIR or MK to create a new directory on the RAM drive. You must specify the name of the directory on the command line. If you do not specify the name, you will not be prompted for it. The directory will be created as a subdirectory of the current directory, so first make sure the current directory is indeed where you want to add the new directory.

```
MKDIR (MK)

R* MKDIR MY_CMDS ↵
R*
```

How to Change to a Different Directory

Use the command CHDIR or CHD to change the current directory. You must specify the name of the directory you want to change to on the command line. CHDIR .. changes directory to the parent of the current directory. CHDIR / changes directory to the root directory.

```
CHDIR (CHD)

R* CHDIR MY_CMDS ↵
R*
```

How to Change to a Different Disk Drive from a Remote Site

To change to a different drive, you must exit the SC3 prompt. You do not change drives as you do in DOS. Your prompt will always remain R*. This command is meant for remote access use only.

```
R* sys ↵
[C:\SC3] ↵

[C:\SC3]exit
R*
```

While using the PC, make changes to different directories on other drives using a PC command window (DOS) not the CFN3 command window.

How to Print the Current Directory Name

Use the disk-based command WHERE to print the name of the current directory.

```
WHERE

R* WHERE ↵

Current directory - R:

R* CHDIR BIN ↵

R* WHERE ↵

Current directory = R:BIN/

R*
```

How to Copy a Directory

CAUTION
<u>NEVER</u> use RCP to copy a parent directory to one of its subdirectories. You will fill, and very possibly damage, the disk containing the directories. If you accidentally start such a recursive copy, press ^C (CONTROL - C) to halt it.

Use the disk-based command RCP to copy all the files in a directory, including subdirectories, to a new directory. The new directory must already exist. The name of each file is printed as the file is copied. RCP works only with the Ram Drive. You cannot copy to other drives.

```
RCP
R* RCP TRAN_BAK /tran/TRAN_BAK ↵
SEP_30.TRN
OCT_01.TRN
OCT_02.TRN
OCT_O3.TRN
R*
```

RCP stands for Recursive CoPy. RCP is a program to use for backing up.

How to Remove a Directory

Use the command RMDIR or RM to remove a directory. You must first remove all the files from a directory before you can remove that directory.

```
RMDIR (RM)

R* RMDIR MY_CMDS ↵
R*
```

Disk Commands

How to Format the RAM Drive

Use the command FORMAT to format the RAM drive (R). All RAM drive information will be erased, so use this command carefully.

```
FORMAT

R* FORMAT ↵
Verify (y/n)? N ↵
R*
```

It is strongly recommended that you do not use this command unless instructed by your Gasboy Representative.

The Verify option gives you one last chance to cancel the format command if you should realize that you're about to do something that could be disastrous. If you press N, the command is canceled; press Y to proceed with formatting.

How to Check a Disk for Errors

Use the disk-based command CHKDSK to check the ram drive for errors involving bad sectors or lost clusters. The plain command will report the errors, but not fix them. CHKDSK with a hyphen F (CHKDSK -F) will attempt to fix any errors it finds and delete any lost clusters (clusters of data that are no longer linked to their proper file-a very unusual occurrence). If you do not specify the name of a disk to check, it will check the current drive's disk.

```
CHKDSK

R* CHKDSK  ↵
  878592 bytes total disk space
    3072 bytes in 2 user files
  875520 available on disk
R*
```

Use this command if, for instance, there was a power failure while the Site Controller was in the midst of executing a command or if you are encountering strange, usually minor, problems.

The CHKDSK -R command checks the disk and reads all files on the disk.

The CHKDSK -A command checks the entire disk.

16 – Using Text Editors

There are three available text editors on the SC III PC. Two are located in the NT system and the other is called FRED on the Site Controller. The NT's editors are easier to use and will only be discussed briefly. NT has an on-line help section that is very good. Please refer to this on-line help for questions. The Site Controller's text editor, FRED, will be discussed in greater detail.

Windows NT Text Editors

On the desktop, open either NotePad or WordPad. For small files such as the ones that work with the SC III, use NotePad. This application is located in the Accessories directory of the Program directory. Use the Start button on the bottom of the screen to access this program.

Figure 16-1: Opening Notepad
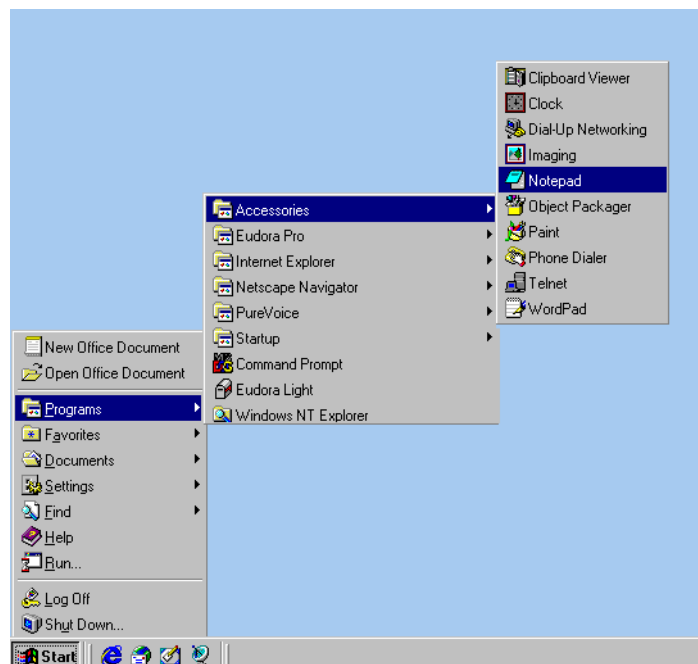
1 Click once, with left mouse button, on the word Start at the bottom of the screen.

2 Click once on the word Programs.

3 Click once on the word Accessories.

4 Click once on the program that you want to open, NotePad is suggested.

For help, select Help from the Menu bar at the top of NotePad's window.

FRED

The screen editor FRED (FRamos EDitor) is for editing files. This chapter shows you how to use the editor FRED to create and modify files. You can use the editor to create a file, save it, and recall it later to modify.

Note that FRED is a disk command, so a copy of it must be in the search path. (For information on the search path, see "Making Your Own Commands" on page 173.)

You can use FRED to modify a file that was downloaded or was created by redirecting output of commands, or with the RECORD command.

The Editor's Modes

The editor has three modes: insert mode, edit mode, and command mode. When you use the editor you will mostly use insert mode.
- In insert mode the editor accepts regular characters as text. Text that is inserted on a line pushes characters on the right side of the cursor to the right.
- In edit mode the editor accepts regular characters as commands. There are some special characters-control characters and the arrow keys-that are accepted as commands in both insert and edit modes.
- When you enter command mode a prompt (#) appears on the last line of the screen, and the cursor moves to the last line of the screen. In command mode the editor accepts commands of one or more letters. You must press ENTER after you type command-mode commands. Some command-mode commands require additional information, which they prompt for.

How to Change Editor Modes

When you first invoke the editor (by typing FRED *filename*), it is in edit mode. From edit mode you can enter insert mode or command mode. To enter insert mode from command mode or edit mode, type ^N. (Remember, the ^ character means you are to hold down the CONTROL key while you type N.)

To enter edit mode from command mode or insert mode, type ^E. To enter command mode from insert mode or edit mode, type ^C.

Command Mode

You will do most of your editing in insert mode or edit mode, but you will return to command mode to save your files and exit the editor.

Command mode is also used for global search-and-replace functions and a few other complex editing functions, but these are seldom needed for editing Site Controller files.

All commands used in command mode require you to type several characters then press the ENTER key.

1 To enter command mode from insert or edit mode, type ^C.
The cursor will go to the bottom (command) line of the screen.

2 Type the command-mode command you want to execute.
What you type will be displayed on the command line. (If you make a mistake typing, use BACKSPACE to delete the last character typed. To delete the entire line, use ^U or ^X.)

3 Press ENTER to enter the command.
If the command requires an argument (additional information), it will prompt you to enter the information.
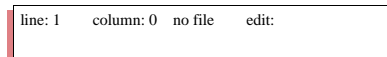
Some command-mode commands take arguments that specify line numbers or a file name. Depending on the command, line-number arguments can specify a single line or a range of lines. Range arguments specify the range of lines in a file that a command will act upon. To specify a range, enter the lower line number, a space, and the higher line number. For example, 10 15 will cause the command to act on lines 10 through 15.

If you do not specify a range, the command will act on the whole file. If you specify only one line number, the command will act on lines from the specified line to the end of the file.

Using the Editor: the Basics

To edit an existing file, type FRED *filename*.

To create a new file, just type FRED to begin. You will name the new file later. The editor will come up on the screen, as shown.

```
line: 1      column: 0   no file      edit:
```

The status line on the top of the screen shows where you are in the file by line and by column; the name of your current file if it is named or no file if it is unnamed; and the editor mode you are in. Columns are numbered starting at 0. The screen in the figure above indicates that the editor is in edit mode. The editor always starts out in edit mode.

How to Enter Text

You must be in insert mode to enter text. If you are not in insert mode, type ^N to get into insert mode. When you are in insert mode, the word edit on the status line changes to insert.

Once in insert mode, you can start typing text.

How to Correct Text as You Type It

When you are entering text in insert mode or entering a command in command mode, you can use DEL to delete the last character you typed and ^X to delete the current line.

Command Case

Commands in edit mode and command mode may be typed in UPPER or lower case.

The Work Buffer

The editor does all its work in the work buffer. (The work buffer is not something you can see; it is part of the Site Controller's memory.)

When you invoke the editor to edit a previously created file, it reads the file from the disk into the work buffer. As you edit the file, the editor makes the changes to the copy of the file in the work buffer. It does not change the disk file until you write the contents of the work buffer to the disk.

You usually write the contents of the work buffer to the disk-with the SAVE or RESAVE command-at the end of your editing session. When you create a new file, the editor does not actually create the file on disk until you give the file a name and write the contents of the work buffer to the disk.

How to Name Files

When you create a new file you must name it before you can save it.

Filenames can be up to 8 characters long, plus an extension (the characters that follow the period) of up to three characters: filename.ext. See "SC III File System" on page 147 for restrictions on the characters that can be used in filenames.

To name a file:
- Make sure you are in command mode. If you are not in command mode, type ^C to get into command mode.
- Type the command NAME filename after the command mode prompt (#).
- The file name will appear on the status line at the top of the screen.

Note: Naming a file does not automatically also save it. You must subsequently use the SAVE command too.

How to Save New Files

Use the SAVE command to save a file when it is initially created. Once the file has been saved for the first time, use the RESAVE command to resave the file. You must name the file with the NAME command before you can save it with SAVE.

To save a new file:

1   Make sure you are in command mode.
If you are not in command mode, type ^C to get into command mode.
Make sure you have named the file with the name command.

2   Type *save*. The file name is not required.
If the file has not been named, the editor displays the message *Use name command to name file first.*

How to Resave Files

Use the RESAVE command to resave files that have already been saved with SAVE. To resave a file:

1   Make sure you are in command mode.
If you are not in command mode, type ^C to get into command mode.

2   Type *resave*. The file name is not required.

How to Exit the Editor

The q command exits the editor and returns to the operating system.

To exit the editor:

1   Make sure you are in command mode.
If you are not in command mode, type ^C to get into command mode.

2   Save the file.
If it is a new file, use *save*; if it has been saved before, use *resave*.

3   Type *q* to exit the editor.

How to Exit the Editor without Saving

Normally before you exit the editor you will use the SAVE or RESAVE command to save the changes you made. But sometimes you may make changes to a file that you decide you do not want to keep.

You can use the command-mode command q to exit without saving. The editor will ask *File not saved, proceed?* Type a *Y* to exit without saving. The disk file will contain whatever was saved the last time you used the SAVE (or RESAVE) command. Type *N* to stay in the editor.

How to Move the Cursor

To move around in the file you must be in edit or insert mode. Type ^E to enter edit mode, or ^N to enter insert mode. The commands to move the cursor a character or line at a time work in both edit mode and insert mode.

In edit mode and insert mode you can move the cursor with the arrow keys or with control characters. The right arrow key and ^L move the cursor one character to the right. The left arrow key and ^H move the cursor one character to the left. The up arrow key and ^K move the cursor up one line. The down arrow key and ^J move the cursor down one line.

The following table gives the cursor movement keys:

Action	Keys(s)
Move one right	right arrow or ^L
Move one left	left arrow or ^H
Up one line	up arrow or ^K
Down one line	down arrow or ^J

Press the tab key or type ^I to move the cursor to the next tab stop. In insert mode this will insert tabs.

You must be in edit mode to use the commands that move rapidly forward/ backward through the file.

1   If you are not in edit mode, type ^E to get into edit mode.

2   Type *u* or *U* to start moving rapidly backward or up through the file. Type anything else to stop.
The cursor will automatically stop when it gets to the first line of the file.

3   Type *d* or *D* to start moving forward or down through the file. Type anything else to stop.
The cursor will automatically stop when it gets to the last line of the file.

You must be in edit mode to use the commands that move the cursor to the beginning or end of a line.

1   If you are not in edit mode, type ^E to get into edit mode.

2   To move the cursor to the beginning of the current line, type a *b* or *B*. To move the cursor to the end of the current line, type an *e* or *E*.

How to Insert Text

To enter text you must be in insert mode. If you are not already in insert mode, type ^N to switch to insert mode.

Text inserted in the file pushes characters on the right side of the cursor to the right. Text does not automatically wrap from the end of one line to the beginning of the next. You must press ENTER to end a typing line and start a new one.

How to Delete Text

The Delete command works in edit mode and insert mode. ^D deletes the character at the cursor, moving the rest of the line one character to the left. To delete a character, move the cursor to the character, then type ^D. Use the DEL key to delete a character to the left of the cursor. DEL works in edit and insert mode.

How to Open a Line

The command to Open a line may be executed in edit or insert mode. To open a line above the current typing line, use ^O.

How to Undo Changes to a Line

The command to Undo changes to a line may be executed in edit or insert mode. Use ^U to undo changes to a line. You must type ^U while you are still on the line, before you move to another line or make any new changes. ^U will restore the line to the way it was before you made any changes.

How to Join Two Lines

The command to join two lines can be executed from edit or insert mode. To join two lines, place the cursor anywhere on the second line and type ^R. The command joins the line containing the cursor to the line immediately above it. The command will not work if the resulting line would be 80 or more characters long.

How to Split Two Lines

The command to Split a line can be executed from edit or insert mode. Lines can be broken at the cursor by using ^S. Place the cursor where you want the lines to be split and type ^S. (If this does not work on your remote terminal, change your terminal's setting from XON-XOFF to DTK.)

How to Copy a Line

You can use the commands to copy a line in edit mode and insert mode. ^Y Yanks a copy of the current line into a temporary buffer, and ^P Puts the copy below the current line.

1   Move the cursor to the line you want to copy.

2   Type ^Y. The current line is unchanged, and a duplicate of it is placed in a temporary buffer.

3   Move the cursor to the line above where you want the copied line to go.

4   Type ^P. The copied line will be placed below the current line.

How to Replace One Character

The command to replace one character with another can be executed only in edit mode. The command x or X replaces one character with another.

1   If you are not in edit mode, type ^E to get into edit mode.

2   Put the cursor on the character you want replaced.

3   Type x.
The status line will display edit: eXchange.

4   Type the character that will replace the one under the cursor.

You can cancel the x command by typing ^H (H for halt) instead of entering the exchange character (^H functions only to terminate the command).

Advanced Editing

The commands described in this section allow you to do complex editing functions. They are not usually necessary for editing Site Controller files.

How to Move the Cursor to a Specified Character

Use the edit-mode SEARCH command to search for a specified character on the current line only (not in the entire document). The search starts to the right of the cursor. You must be in edit mode to use the search command.

1   If you are not in edit mode, type ^E to get into edit mode.

2   Type *s* or *S*.
The status line will display ***edit: search***.

3 Enter the character you want to search for.
  • The cursor will move to the next occurrence of that character to the right on the current line.
  • If the character is not on the current line, the cursor will move to the end of the line.

How to Move the Cursor to Specified Line

You should be in edit or command mode to use the goto command to move the cursor to a specified line.

1 If you are not in edit mode, type ^E to get into edit mode.

2 Type *g* or *G*.
The cursor will move to the status line, which will display *edit: goto:*.

3 Type the number of the line you want to go to, and press **ENTER**.
  • The cursor will move to the line you specified.
  • If you type a line number that is greater than the number of lines in your file, the cursor moves to the last file line.

How to Search for a Specified String

Use the command-mode FIND command to search for the next occurrence of a specified string of characters. The cursor will move to the beginning of the next occurrence of the specified string, and the editor will enter insert mode. If the string is not found, the editor remains in command mode.

A question mark (?) in the search string is treated as a wild card. It will match any character in that position.

A caret (^) as the first character of the string indicates the beginning of a line. A caret that is not the first character is not treated specially. (Note that the ^ symbol does double duty. It usually stands for holding down the CONTROL key while you press another key, or it can stand for itself as the first character of a string.)

To execute the FIND command, the editor must be in command mode.

1 If you are not in command mode, type ^C to enter command mode.

2 Type *find*. The command line will display the prompt Search mask.

3 Type the character or characters to search for.
  • The cursor will move to the first character in the specified string and the editor will enter insert mode.
  • If the string is not found, the editor will remain in command mode.

How to Search for and Print a String

Use the command-mode SEARCH command to print all lines containing a specified string. To execute the search command, the editor must be in command mode.

1 If you are not in command mode, type ^C to enter command mode.

2 Type *search*. The command line will display the prompt Search mask?

3 Type the character or characters to search for.
FRED will print the line numbers and the lines that contain the specified string.

How to Execute a Global Search and Replace

Use the command-mode CHANGE command to search the specified line range for a specified string of characters and replace it with a specified replacement string.

A question mark (?) in the search string is treated as a wild card. It will match any character in that position. A caret (^) as the first character of the string indicates the beginning of a line. A caret that is not the first character is not treated specially.

Only the first occurrence of the search string in a line will be changed.

To execute the CHANGE command, the editor must be in command mode.

1 If the editor is not in command mode, type ^C to enter command mode.

2 Type *change* and, optionally, the line range you want to change.
To specify a range, enter the lower line number, a space, and the higher line number. If you do not specify a range, the command will act on the whole file. If you specify only one line number, the command will act on lines from the specified line to the end of the file.
The command line will display the prompt *Search mask?*

3 Type the character or characters to change, and press ENTER.
The command line will display the prompt Change mask?

4 Type the replacement string.
The editor will print the line numbers, as well as the lines themselves, where the change was made.

How to Erase the Entire Work Buffer

If you want to start working on a new file, use the command-mode CLEAR command to erase the entire copy of the file in the work buffer. To protect you from losing a file that you might really want, the command line will display *File buffer not saved, proceed?* if you have not saved or resaved the file since you last made changes.
Note: If you erase the work buffer and then resave, the empty file will overwrite whatever was in the file on disk.

How to Delete Specified Lines

Use the command-mode DEL command with, optionally, a line range to erase all or part of a file. To specify a range, enter the lower line number, a space, and the higher line number. For example, *del 1 3* will delete the first three lines in the file.

If you do not specify a line range the entire file will be erased. If you specify only one line number, the lines from the specified line to the end of the file will be erased.

How to Delete Up to a Specified Character

Use the edit-mode KILL command to delete text up to a specified character. The KILL command deletes everything from the cursor up to, but not including, a specified character. It deletes within a single line only.

If the search character is not found to the right of the cursor, everything to the end of the current line is deleted. This is an easy way to delete everything on a line to the right of the cursor position.

1   If you are not in edit mode, type ^E to get into edit mode.

2   Type *k* or *K*.
The status line will display *edit: kill*.

3   Type the search character.
Everything from the cursor up to the specified character will be erased.

You can cancel the command before entering the search character by typing ^H (^H functions only to terminate the command).

How to Append a File to the Current File

Use the APPEND command to append a file to your current file. You can also use this command to insert a file in the middle of the current file.

To append or insert a file:

1   Enter the edit or insert mode and position the cursor where you want the file to be inserted.

2   Enter the command mode and type
append *filename*
where *filename* is the name of the file that you want to insert.
A copy of the named file will be inserted above the line the cursor was on. The original file is not deleted.

How to Set Tab Stops

Use the command-mode TABS *n* command to set tab stops every *n* columns. Tabs 0 is equivalent to tabs 1.

As on a typewriter, TAB is used to move the cursor to the next tab stop. If you print the file, the spacing will depend on how the printer's tab stops are set.

How to Edit a New File without Leaving FRED

Use the command-mode LOAD command to edit a new file without leaving the editor. To edit a new file:

1 If you are not in command mode, type ^C to enter command mode.

2 Use the command SAVE or RESAVE to save the current file that you have been editing.

3 Type
load *filename*
to edit the new file.

The following page contains the FRED editor command summary.

Editor Command Summary

The following table summarizes the editor commands.

Command	Argument	Mode(s)	Function
^O		i, e	open line above
ENTER		i, e	open line below
↑ or ^K		i, e	cursor up one line
↓ or ^J		i, e	cursor down one line
← or ^H		i, e	cursor left one character
→ or ^L		i, e	cursor right one character
SPACEBAR		e	cursor right one character
b		e	move cursor to beginning of line
e		e	move cursor to end of line
^E		i, e, c	enter edit mode
^C		i, e, c	enter command mode
^N		i, e, c	enter insert mode
c		e	enter command mode
i		e	enter insert mode
DEL		i, e	delete one character left of cursor
^D		i, e	delete one character at cursor
^X		i, e	delete current line
k	*char*	e	kill line from cursor up to character *char*
^U		i, e	undo changes to current line
^S		i, e	split line at cursor
^R		i, e	join current line to line above
^Y		i, e	save current line
^P		i, e	put saved line below current line
u		e	scan backward (up) through file
d		e	scan forward (down) through file
g	*n*	e, c	go to line number *n*
x	*char*	e	exchange character at cursor with character *char*
s	*char*	e	search for character *char*
change	*line range*	c	make changes to lines in *line range*
find		c	search for a pattern, enter insert mode
search	*line range*	c	print all lines in *line range* that match a pattern
clear		c	erase entire file
del	*line range*	c	deletes lines in *line range*
append	*filename*	c	insert *filename* at cursor
load	*filename*	c	replace buffer with *filename*
name	*filename*	c	set name of current *filename*
save		c	save file
resave		c	resave existing file
q		c	quit editor, exit to operating system
tabs	*n*	c	set tab stops every *n* columns

17 – Making Your Own Commands

Many times you will have procedures at your site that require the use of several Site Controller commands. The most common example is a shift-break procedure. When you break shift at your site you may want to load the new shift, reset some totals, and print reports.

You can create a command file that contains several Site Controller commands, then have your users execute that single command file rather than having to give a series of complicated commands. When you execute a command file, all the commands in it are automatically performed. You can even create command files that can be executed from the console.

As another example, other procedures may require you to enter a lot of data to load prices for fuel price codes or to load broadcast messages. You can use one of the editors to create a command file that will load the data. Once you have created the command file, you can easily make small changes in it to reload new data.

Command files should contain only Site Controller system commands, disk-based commands, and comments.

Restrictions on Command File Names

Command files must follow MS-DOS filename restrictions given in "SC III File System" on page 147 and later. Command files also have two additional name restrictions:

First, command file names must have the extension .CMD. That is how the Site Controller can tell they are command files.

Second, the first part of the command file name (the part before the period and the extension) cannot match any of the names reserved for Site Controller system commands, including any abbreviations for commands. For example, P, PR, PRI, PRIN, and PRINT are all reserved names. But PRXX is not a reserved name, because the third and fourth characters do not match a reserved name.

Program Space

Only one disk-based program or command file can be run at once. If a cron or command file attempts to run a disk-based program and finds another program is running, it will wait until the program space is free. (However, if you invoke a disk-based command directly at the prompt and another program is running,

the command will be terminated with the error message ***Program space is busy***.)

Search Path for Commands

Before the Site Controller can execute a disk-based command, it must locate it. The Site Controller looks for disk-based commands in certain directories in a certain order. This order is called the *search path*. The Site Controller executes the first command it finds that matches the command name given.

Standard Search Path for an SC III

R:	the RAM drive
.	current directory
C:\SC3\BIN	SC3\BIN on hard drive

(The paths shown above are the default. You can configure a different path with menu page 7 of the SYS_PAR program, as explained in MDE-4314 CFN III Configuration Manual.)

A command file (.CMD extension) with the same name as a regular executable command (.BIN extension) will not be executed if the .BIN file is in the same place on the search path. The .BIN file will be executed instead because .BIN files have precedence over .CMD files.

For example, if TREE.BIN and TREE.CMD are in the directory BIN, when you type TREE, TREE.BIN will be executed.

How to Execute User Command Files

To execute a user command file, type the file's name without the extension. If the command file is not in the search path, you must type the pathname of the command.

Output of command files is printed on the command terminal unless you redirect it by using either ENABLE DUMP (see below in this chapter) or the redirection options (> or >>) in the command file.

```
R* PRDATA ↵
- DATE -
Tue 9/12/99 11:40AM, Trans=57, Seq=624 SCIIIv3.3
- DRAWER -
Dr Sh       Cash in     Paid Out    Balance    Safe drop
1    1       830.12       0.00        830.12       0.00   Began Tue 9/10/99 8:00 AM
 Prev 1      791.35       0.00         00.00      791.35   Ended Mon 9/09/99 4:00 PM
 Prev 2     1239.87       0.00         00.00     1239.87   Ended Tue 9/10/99 12:00 PM
 Prev 3      692.44       0.00         00.00      692.44   Ended Tue 9/10/99 8:00 AM
 Today       830.12       0.00        830.12       0.00   Began Tue 9/10/99 8:00 AM
 Yestdy     2723.66       0.00         00.00     2723.66   Began Mon 9/10/99 8:00 AM
 Cumltv     9832.47       0.00        830.12     9002.35   Began Sun 9/01/99 8:00 AM
 - TANK -
 T# Product  Totals      Reorder        Gauge      Diff %  Temp  Ullage
1 Regular   30000.000   5000.000
2 Unleaded  30000.000   5000.000
3 Diesel    30000.000   8000.000
4 Premium   30000.000   5000.000
R*
```

Comments in Command Files

A line in a command file that begins with an asterisk (*) is a comment. A comment is usually an informative note to yourself or to the next person who might edit the file; the note is usually about the previous or next command in the file. The command interpreter ignores any line in a command file that begins with an asterisk.

If the very first character in the whole command file is an asterisk, it has a special meaning. When the first character is an asterisk, the lines in the command file are not printed on the command terminal when that command file is executed. So, if you are having problems with a command file, removing the first asterisk can be useful in debugging.

If the first character is not an asterisk, all the lines in the command file, including comment lines, are printed on the command terminal when the file is executed. Except when you are testing your command files, you almost always want an asterisk as the first character.

If a line in a command file has a backbackquote (') as its last character, the command may be continued on the next line. This is useful for echo strings that are too long to fit in 80 columns.

How to Use Terminal Input with Command Files

To have a command in a command file print prompts and take input from the terminal, you can use the T (terminal) option with that command in the command file. The T option disables redirection for that command and causes the command to prompt for all input from the terminal instead of taking input from the file. Any other output from the command will also be printed on the terminal.

```
R* TYPE NEWSHIFT.CMD ↵
stop
* stop halts any new transactions
* from starting until shift change
* is completed
load shift;t
print totals;at
run
* run resumes operations after stop

R*
```

When the command with the T option ends, input is taken from the file again and redirection is enabled. When the command file above is executed, the commands LOAD SHIFT and PRINT TOTALS will print their normal prompts and take input from the terminal.

```
R*  NEWSHIFT ↵
stop
load shift;t
Shift number? 1
print totals;at
Which totals? 3
- - - Shift 3 from Sun 9/19/99 9:51 PM to Mon 9/20/99 6:35 AM - - -
1     1 Regular           38        35.25
2     1 Unleaded          20        18.55
3     1 Premium           41        47.95
4     1 Diesel            33        26.91
                          ----      ------
                          132       128.66
run

R*
```

Command File Commands

How to Print a Line with ECHO

ECHO or EC sends its arguments to standard output. Standard output normally prints on the command terminal, but can be redirected to a file. If you use ECHO in a command file that is executed by cron, the output will disappear unless it is redirected to a file.

ECHO adds a new line after the line it prints by adding a carriage return after the printed line. ECHO;A does not put a carriage return after the echoed text.

For command files that will be executed from the console, use ECHO;T to have output displayed on the console. Without the T option, ECHO will send its output to the log printer when executed from the console.

You can use ECHO to, for instance, display a reassuring message that the command is in the process of working.

```
R*  TYPE SHIFT1.CMD ↵
* load shift command
* takes one argument, the new shift number.
echo Loading shift %1
stop
load shift %1
run
```

The example in action would look like this.

```
R*  SHIFT1 3 ↵
Loading shift 3
R*
```

How to Wait with SLEEP

The SLEEP command causes the Site Controller to wait the specified number of seconds before it executes the next command. For example, SLEEP 2 causes a wait of two seconds.

```
R*  TYPE TEST.CMD ↵
ECHO;T %D
SLEEP 2
ECHO;T %T
SLEEP 2
R
```

You can use SLEEP to display a message for a specified time before you go on to the next command, or to give transactions a few seconds to stop after a STOP;I command.The command below displays the date, then the time. The %D and %T in this example are *variables*, which are explained later in this chapter.

From Command File to Command File

A command file contains one or more commands, which are executed sequentially; that is, the command file executes its first command, then returns to itself and executes the second command, etc.

However, a command file cannot call up another command file and then return to itself for subsequent commands. Once the first command file has called up the second command file, there is no way to return to the first command file.

Therefore, if you want to have a routine that involves two or more command files, have the first command file finish all its commands then call the second command file, which, in turn, will execute all its commands and then call a third command file, etc. (This procedure is known as chaining files together.)

Wait for User Input

Sometimes you need to have a command file wait for input from the user before it continues executing. For example, you may want to give a user time to read a message before continuing. The command PAUSE or PAU displays its arguments and waits for the user to enter a line of input. The program continues when the user presses ENTER.

Like ECHO, the PAUSE command adds a new line to the line it prints. Use the A option (PAUSE;A) to keep it from printing the new line.

You can use PAUSE with the I option (PAUSE;I) to store user input for use by the next command that needs user input.

Line Length Limitations

One line on a Check Point console can display 20 characters, and one line on a command terminal can display 80 characters. The Profit Point can display up to 40 characters on a line. If there are 24 or fewer characters on a Profit Point line, they will be shown in larger type.

The ~0A Control Code

The text to be displayed by the ECHO or PAUSE command may be longer than one line. If so, insert a ~0A where you want a new line in the text display. (Note that the middle character is a zero, not an uppercase O.) 0A is a hex number, and the tilde tells the Site Controller to translate that hex number into a new line.

```
R*  TYPE PUMP&TAX.CMD ↵
* command file for printing reports
ECHO Press 1 to print pump report
ECHO Press 2 to print tax report
```

Using ~0A, the same command file could also start out like this.

```
R*  TYPE PUMP&TAX.CMD ↵
* command file for printing reports
ECHO Press 1 to print pump report~0APress 2 t print tax report
```

The @C and @P Console Destinations

The Profit Point can display a longer line than the Check Point. So, you may sometimes want to do two different versions of a message, a shorter one for the Check Point and a longer one for the Profit Point.

A line that begins with @C will display only on the Check Point. A line that begins with @P will display only on the Profit Point.

Note that sending a ^T to either the Check Point or Profit Point opens the cash drawer.

Command Files Executed from a Console

Use the T option with ECHO and PAUSE to have prompts displayed on the console display. Without the T option, ECHO will send its output to the log printer.

If your console is a Check Point, make sure prompts and messages are not longer than 20 characters. The Check Point console can display only 20 characters at a time.

Ask for numeric responses to the IF -y and IF -!y commands (discussed in the *Advanced command files* chapter). A 0 means no, and a 1 means yes.

Note for Check Point only. If you try a user function and see "cannot do", check that you are logged off the system terminal.

Command Files at Sign On

You can set up a sequence of commands to be executed whenever a user signs on. The commands can differ, depending on whether you are signing on to the local or remote port. The command file is R:SIGNON?.CMD, where ? is 1 for local port sign on and 2 for remote port.

The SIGNON?.CMD file cannot be activated by a user at the console or by a cron file.

How to Save Output from a Command File

Output of a Single Command

For a single command, you can save the output to a file by using the > or >> options. The > option overwrites any existing file with the specified filename. The >> option appends data to the end of an existing file with the specified filename.

This example saves the output of the PRINT PUMP command to a file named PUMP.LST.

```
R*   P PU;>PUMP.LST ↵
R*
```

Output of Several Commands

You can have the output of several commands redirected to a file by using the ENABLE DUMP or E DU command and specifying a filename. This is mostly used in command files to have the output of the commands in the file redirected to a file. Use DISABLE DUMP or DI DU to terminate redirection.

```
R* TYPE PR_SALES.CMD ↵
ENABLE DUMP SALE_OUT
PRINT SALES
PRINT TOTALS
PRINT PRODUCT
R*
```

The ENABLE DUMP command normally overwrites the specified file if it exists. With the A option, the command appends to the specified file, if it already exists.

The >, >>, and < options work when ENABLE DUMP is in effect. They override output dumping.

The command file in the above example puts the output of the commands PRINT SALES, PRINT TOTALS, and PRINT PRODUCT in the file SALE_OUT.

How to Output to Log Printer

Refer to "CFN III" on page 7 for more information on output to the log printer.

How to Output to a Receipt Printer

The PRINT RECEIPT or P REC command lets you print text on a receipt printer. (Its name reflects the fact that it involves the receipt printer, not that it prints receipts.)

The simple use of the PRINT RECEIPT command is to test the receipt printer. However, it can also be used to print reports, and for this reason, you might want to use it in command files.

PRINT RECEIPT allows long receipts with widths up to the maximum of the receipt printer. This allows reports, as well as receipts, to be printed by a receipt printer. (Also, a full-carriage printer could be tied to a console through a parallel port.)

The address of the receipt printer either comes from the first data in the standard input, or it can be specified as a P1 option. (This avoids having to require the printer number to be put in the file that is being redirected to a receipt printer.) The printer address can be specified in four ways:
- If only a number is given, it is the address of the printer.
- If the address is only C, the output is sent to the printer associated with the console where the command file is being run.
- If the command is run from the local or remote port (in human mode) and C is specified, the output goes to the printer associated with console #1.
- If the address is C1 - C4 the output goes to the printer associated with the specified console number (which is set in console parameters).

When you send a file to a printer, you may want to put a heading line or to include printer-control codes that do not appear in the file. If so, put the heading or codes on the same line in the command file as the PRINT RECEIPT command; the extra characters will be sent to the printer before the file text. Any text sent to the printer is checked for ~ and ^ control codes, such as ^M for a new line.

Note: Sending a ^T to the console opens the cash drawer.

(See your printer and command terminal manuals for these control codes, as they may vary from device to device. If the control codes are given as hex numbers, insert a ~ before the hex number; if the codes are letters or characters, insert a ^ before the letter or character.)

Use the C option to print more than one line with PRINT RECEIPT. Unlike most Site Controller commands, in this case you do not indicate the end of the lines you want printed by responding to the last *Line to print?* prompt with only a carriage return. Instead, type only a period (.) and press RETURN. (This is so you can include blank lines in what is printed on the receipt printer, if you want.)

You can use PRINT RECEIPT to print the entire contents of a file on the receipt printer. The format is:

> PRINT RECEIPT;<*filename*

How to Add an Event to the Disk Journal

You can add an event to the journal log by using the command LOG EVENT (LO EV). This will mark an event in the journal log by placing an event line at the specified point.

There are several parameters available with this command:

et	Event type 0-99: Enter a number, 0 through 99. It will appear with as 100 - 199 in the journal.
amt	Amount in current monetary units: Do not use a decimal.
d	Descriptive text (up to 20 characters): If you have any spaces, enclose the description in quotes.
c#	Console number: Must be 2 or less characters.
cl#	Clerk number: Must be 2 or less characters.
sh#	Shift number: Must be 2 or less characters.
sq#	Shift sequence number: Must be 4 or less characters.

You must include one parameter, the "event type", the others are optional but a place holder must be included in the command if a parameter is skipped. For example, to assign an event type of 20, with an amount of $45.00, a clerk number of 13, and a shift sequence number of 335, the command would look like the example.

Notice that there are zeros representing the parameters that are not used because the last parameter was needed. Any fields not provided will default to their correct system values.

```
C*  LO EV 20 45 0 13 0 0 335↵
C*
```

Variables for Use in Command Files

System Variables

The following system variables can be used in command files. (These variables are also called "percent variables.") Note that these are case sensitive. That means they must be uppercase or lowercase, as shown here:

Name	Definition
%D	Date (MM/DD/YY format)
%T	Time (HH:MM AM/PM format)
%W	Day of week (Sun, Mon, Tue, Wed, Thu, Fri, Sat)
%Y	Date and time in YYMMDDHHMM format
%U	User number of user currently signed on
%P	Permission level of user currently signed on
%S	Current shift number (1, 2, or 3)
%Q	Shift sequence number: each shift change increments this number; wraps at 9999
%B#	Current drawer balance for drawer #
%I	Site ID of the site
%A	Number of input lines from command terminal waiting to be read (to test if user pressed ENTER)
%K	Position of console keyswitch: 0 = off 1 = on 4 = supervisor 8 = manager

Name	Definition
%E	Last error code from last command. A 00 means the command was completed successfully, greater than 00 usually means the command failed. (Note that FIND uses the error code in a special way.)
	00 = completed
	01 = transaction(s) in progress
	02 = not found (does not exist)
	03 = invalid data
	04 = card is valid
	05 = card is not valid
	06 = device is out of service
	07 = pump is in use
	08 = pump is not on
	09 = illegal command
	10 = completed, failed
	11 = file full
	12 = command is protected
	13 = site is stopped
	14 = invalid option
	15 = valid card, bit-mapped
	16 = valid card, limited
	17 = invalid card, bit-mapped
	18 = invalid card, limited
	19 = expecting NC, NW
	20 = string too long
	21 = print a heading before this record
	22 = some valid, some not
	23 = print a subtotal before this record
	24 = no price
	25 = cannot open file
	26 = site not stopped
	27 = cannot activate
%C	Where command is being executed from:
	1 = local command port (command terminal)
	2 = remote command port
	3 = cron
	4 = Check Point #1
	5 = Check Point #2
	6 = Check Point #3
	7 = Check Point #4
	8 = Profit Point #1
	9 = Profit Point #2
	10 = Profit Point #3
	11 = Profit Point #4
%R	Site run level:
	0 = running
	1 = blocking new transactions
	2 = stopped
	3 = emergency stopped
	4 = memory full
	5 = crashed
%Fd	Returns the amount of free space on the specified drive (where d is the drive)

Name	Definition
%M	Miscellaneous options where # stands for:

0 = returns the value (in cents) contained in a non-resettable totalizer that adds the absolute value of all sale-related items; that is, all sales add to the totalizer, regardless if they are reversals, returns, payouts, etc. (Must have JOURNAL.LOG enabled.)

1 = returns the initial drawer balance in SYS_PAR

2 = transaction number of first transaction in file

3 = transaction number of last transaction in file

4 = status of bank modem (0=down, 1=available, 3=connected)

5 = status of CFN modem (0=down, 1=available, 3=connected)

(for 6-8 see the discussion in the NEXT CLERK command about the unique shift #s for every console parameter in SYS_PAR)

6 = if the SYS_PAR parameter is enabled, returns a 1; if disabled, returns a zero

7C# = if the SYS_PAR parameter is enabled, returns the shift number of console #; if disabled, returns the system's shift number

8C# = if the SYS_PAR parameter is enabled, returns the shift serial number of console #; if disabled, returns the system's shift serial number

9 = returns CFN Remote port config 0=Dumb, 1=ANSI, 2=VT52

In two of the last three variables above, %M7C# and %M8C#, the # can be replaced by the console number, as described, or it can be replaced by a %a-%z user variable (discussed in this chapter and) to allow variable selection of the console number.

Command-line-argument Variables

These are the variables that can be used in command-line arguments:

Name	Definition
%0	Number of arguments on command line.
%1 - %9	Command line arguments one through nine.

You can use command-line arguments in command files. Command-line arguments are strings typed on the command line after the command and separated by spaces. The form is the same as is used by Windows NT or MS-DOS.

Where you want to use the argument in the file, put a percent sign (%) followed by the position number of the arguments on the command line. Arguments entered after a command are numbered from left to right, starting with 1. The first argument after the command is %1, the second argument is %2, and so on.

For example, you could create a command file called NEWSHIFT.CMD to be executed at shift changes. Under this example, an employee would later use the NEWSHIFT.CMD file by typing only its name, NEWSHIFT, without the extension. The employee would also add two arguments: first, the number of the just-completed shift and, second, the number of the new shift. The NEWSHIFT command would then perform a LOAD SHIFT upon the second argument (the number of the new shift) and a PRINT TOTALS upon the first argument (the number of the just-completed shift).

```
R*  TYPE NEWSHIFT.CMD ↵
* takes two arguments, the old and new shift numbers
stop
load shift %2
run
print totals;a %1
print drawer
R*
```

The command:

NEWSHIFT 2 3

typed at the prompt will load shift 3 and print the totals for the previous shift 2.

User Variables

Name	Definition
%a - %z	User string variables set by SET_VAR; up to 118 characters long.

The variables %a-%z can be used in your command files.

However, you should use them on a temporary basis because, if you write several command files, you will find it difficult to make sure that another file does not use the same variable for a different purpose. (User variables are discussed in "Advanced Command Files" on page 187 and later.)

The EXECUTE Command

The EXECUTE, or EXE, command causes the rest of the text on a command line to be executed immediately and in background. The output will not be displayed on the console or command window, nor will the process hold up normal console operations. Without EXECUTE, you cannot ring up sales until all the commands in a command file have been executed.

The syntax for EXECUTE is:

EXECUTE *command*

EXECUTE *filename*

where *command* is the name of a command and *filename* is the name of a command file.

EXECUTE is especially useful for shift-break command files where you do not want to hold up console operations while shift processing is underway.

A minus sign (-) is automatically prepended to the command, so the output is not sent to the printer.

As many commands as there are available entries in the cron table may be queued simultaneously.

Since cron and the console use the same command processor, commands queued with EXECUTE will not start until the console is logged off remote command mode.

Since EXECUTE runs commands in the background, make sure all your command files that

are run with EXECUTE do not contain any indefinite loops. Otherwise, you can lock up the program space. If you should fill the program space, use the REMOVE CRON;AI command to remove all running or pending executable or cron commands.

How to Exit from Command Files

The Site Controller command EXIT, if encountered in a command file, will cause the command file to terminate. This will not log the user off the data terminal or console. To terminate the command file and log off the user, use QUIT.

18 – Advanced Command Files

If you have had some computer programming experience, this chapter should be self-explanatory. If you have not had any computer programming experience, you might want to discuss this chapter with the person in your organization who has the most knowledge about computers.

How to Use the IF Command

The IF command allows conditional execution of the next one or more commands in a command file. IF uses several switches that allow you to specify conditions.

IF supports block-structured statements, and uses Pascal-type blocking. The format of an IF statement is:

```
IF condition [text]
    BEGIN
    command1
    command2
    command3
    . . . .
    END
ELSE
    BEGIN
    command1
    command2
    command3
    . . . .
END
```

If condition is true, the commands following IF will be executed. If condition is not true, the commands following the optional ELSE will be executed. The ELSE part is optional and may be omitted if not needed.

BEGIN and END, on lines by themselves, delimit the commands. They are not required if only one command line follows IF or ELSE.

IF statements can be nested.

Note: The indents are not required. Blank lines and tabs and spaces at the beginning of lines are ignored (but are a good way to keep track of subsections in your code).

The following conditions can be used with IF.

Switch	Meaning
-y	With a -y switch, text is echoed to the data terminal or console, and if the user enters a 1, Y, or y from the console or data terminal keyboard, the commands following the IF statement are executed. • If the user enters a 0, N, or n, the commands following the IF statement are skipped, and, if an ELSE follows, the commands following ELSE are executed. • If the user enters anything else, the text is printed again.
-!y	A -!y switch is similar to a -y switch, but works in reverse. Text is echoed to the data terminal or console, and if the user enters a 1, Y, or y from the console or data terminal keyboard, the commands following the IF statement are skipped. • If an ELSE follows, the commands following ELSE are executed. • If the user enters a 0, N, or n, the commands following the IF statement are executed. If the user enters anything else, the text is printed again.
arg1=arg2	With a = switch, the next two arguments are compared for literal equality. • If they are equal, the commands following the IF statement are executed. • If the arguments are not equal, the IF commands are skipped, and, if an ELSE follows, the commands following ELSE are executed.
arg1!=arg2	The != switch is similar to the = switch, but works in reverse. • If the next two arguments are equal, the commands following the IF statement are skipped, and, if an ELSE follows, the commands following ELSE are executed. • If the arguments are not equal, the commands following the IF statement are executed.
arg1<arg2	With the < switch, the next two arguments must be numbers. • If the first argument is less than the second argument, the commands following the IF statement are executed. • If the first argument is not less than the second argument, the IF commands are skipped, and if an ELSE follows, the commands following the ELSE are executed.
arg1<=arg2	With the <= switch, the next two arguments must be numbers. • If the first argument is less than or equal to the second argument, the commands following the IF statement are executed. • If the first argument is not less than or equal to the second argument, the IF commands are skipped, and if an ELSE follows, the commands following the ELSE are executed.
arg1>arg2	With the > switch, the next two arguments must be numbers. • If the first argument is greater than the second argument, the commands following the IF statement are executed. • f the first argument is not greater than the second argument, the IF commands are skipped, and if an ELSE follows, the commands following the ELSE are executed.
arg1>=arg2	With the >= switch, the next two arguments must be numbers. • If the first argument is greater than or equal to the second argument, the commands following the IF statement are executed. • f the first argument is not greater than or equal to the second argument, the IF commands are skipped, and if an ELSE follows, the commands following the ELSE are executed.
-e *filename*	With the -e switch the next argument is treated as a file name. • If the file exists, the commands following the IF statement are executed. • If it does not exist, the commands following the IF statement are skipped, and, if an ELSE follows, the commands following ELSE are executed. (Unless the command is executed upon a file in the current directory, **filename** must include the path.)

Switch	Meaning
-!e *filename*	With the -!e switch the next argument is treated as a file name. • If the file does not exist, the commands following the IF statement are executed. • If it exists, the commands following the IF statement are skipped, and, if an ELSE follows, the commands following ELSE are executed. (Unless the command is executed upon a file in the current directory, **filename** must include the path.)

When using the IF statement the next line must not wrap into the following line or the system will bypass the first command line and pick up the second line and only execute it. For example:

IF (condition)
    pause;a ~10~14Switch Drawers~0AInsert new drawer containing
    $%M1 '
    ~0APress ENTER to continue

The system will bypass the *pause;a ...* command line and only execute the *~0APress ENTER to continue* line.

It is possible to link the Boolean options together with *and* and *or.* An & (ampersand) is the AND operator and an | (pipe or vertical bar) is the OR operator.

The & and | functions are evaluated left to right:
  • & terminates when the first false result is obtained
  • | terminates when the first true result is obtained

Avoid using both & and | in the same IF statement because your result may not be what you expect.

The following example is for demonstration purposes. It does not do anything useful.

```
R*  TYPE TEST2.CMD ↵
if -y Are you sure?
        BEGIN
        pr da
        pr pu
        END
else
        BEGIN
        echo Not sure.
        if -y Are you really REALLY not sure?
            BEGIN
            echo Definitely not sure.
            exit
            END
        else
            echo Not sure if not sure.
        END

R* TEST2 ↵
Are you sure? y ↵
pr da
Sat 9/18/99 11:40AM, Trans=57, Seq=624 SCIIIv3.3
pr pu
P# T# Pr Pc Price         Totals        $Total     Rate        Limit      Slow
1  1  1  1  0.799         178.770       181.10     100/$        $30       0.500
   2  2  2  0.859         360.716       322.74
   3  3  3  0.919         740.360       741.94
2  1  1  1  0.799          84.110        66.44     100/$        $30       0.500
   3  2  3  0.919           2.140         3.13
   3  3  3  0.919         462.540       494.42
3  3  3  3  0.919         353.044       357.14     100/$        $30       0.500
4  4  4  4  1.069         336.634       349.97     100/$        $30       0.500
5  1  1  1  0.799        7019.954      6722.35     100/G       $500       0.500
6  2  2  2  0.859         503.411       548.22     100/G        $30       0.500
7  3  3  3  0.919         464.840       578.71     100/G        $30       0.500
8  4  4  4  1.069         778.470       804.44     100/G        $30       0.500
                         ========      =======
                         11284.99     11170.60

R* TEST2 ↵
Are you sure? n ↵
Not sure.
Are you really REALLY not sure? y ↵
Definitely not sure.

R*
```

How to Use Loops in Command Files

Two commands, LOOP and RETURN, support looping in command files. When the command LOOP is executed, the current position in the command file is recorded. If the command RETURN is executed, processing will resume at the location where the last LOOP was found. If a RETURN is executed and there was no LOOP, the command file is restarted. To get out of a loop, use IF to skip over the RETURN.

Note: You cannot perform "nested" loops.

The three forms of LOOP-RETURN are:
- do . . . while
- do . . . until
- while . . . do

The do . . . while form uses an IF with a positive statement and looks like this:

```
LOOP
    command1
    command2
    .
    .
    .
    commandn
    IF -[condition]
    RETURN
```

The do . . . until form uses an IF with a negative statement and looks like this:

```
LOOP
    command1
    command2
    .
    .
    .
    commandn
    IF -![condition]
    RETURN
```

The while . . . do form uses an IF with a positive statement and looks like this:

```
IF -[condition]
BEGIN
    LOOP
    command1
    command2
    .
    .
    .
    commandn
    IF -[condition]
    RETURN
END
```

How to Use Case Statements in Command Files

The command CASE, when used in a command file, allows the user to pick one command to execute from a list of several. The maximum number of cases in a CASE statement is 99.

There are two forms of case statement. The first is:

CASE [-d] -p *n1 n2*
   command1
   command2
   . . . .
   commandn1
   [default command]

In the first form, with the -p switch, the number of the case selected is passed from the command line. The n1 argument is the total number of cases. The n2 argument is the case to execute.

```
R*   TYPE TEST3.CMD ↵
case -p 3 %1
        shift1
        shift2
        shift3

R*
```

If the optional -d switch is used, the number of cases is one greater than the number indicated by n1. The last command, the default command, will be executed if none of the other cases matches.

The second form of the case statement is:

CASE [-d] -e *n1 text*
   command1
   command2
   . . . .
   commandn1
   [default command]

In the second form, with the -e switch, the number of the case selected is entered by the user from the data terminal or console. The n1 argument is the total number of cases. Text is displayed on the command terminal or console. The user then enters the number of the case to execute. If the user enters a number that is greater than n1, text is displayed again.

If the optional -d switch is used, the number of cases is one greater than the number indicated by n1. With the -d option, if the user enters a number that is greater than n1, the default command is executed, and text is not displayed again.

```
R*   TYPE TEST4.CMD ↵
case -e 3 Shift (1-3):
        shift1
        shift2
        shift3

R*
```

Prompt String

You can provide a prompt string for an IF or CASE command that follows a PAUSE command. This prompt will be displayed if the user enters a response that is not accepted by the program. You can use this second prompt to list the acceptable responses. Note that the second prompt will not be printed if the -d switch is used with CASE.

```
PAUSE;AI Do you want to see files on drive A:? (Y/N)
IF -y Type Y for yes, N for no:
  dir a:
```

How to Set User Variables in Command Files

The names %a through %z are *user variables*. (A percent sign followed by an uppercase letter is a *system variable*, discussed in the *Making your own commands* chapter.) They are set with the command SET_VAR or SET.

The full syntax of SET_VAR is:

Options: [;I] |
{*variable* {= | @ } [string] |
variable {+ | - | * | / | % | ^} *number_value* |
variable $ filename [line [column[length]]] |
variable ~ string [column [length]] |
variable ? filename |
variable # string}
variable < format number

Argument	Function
none	list contents of all variables
;I	deletes all variables
variable = string	sets **variable** equal to value (literal text, % parameter number, or % variable name)
variable @ string	echoes **string** text as prompt, sets **variable** equal to line typed by user
variable {+ | - | * | / | % | ^} **number_value**	sets **variable** to the result of performing the given mathematical operation on the current value of **variable** and **number_value**; % = mod, ^ = exclusive or
variable $ filename [line [column [length]]]	sets **variable** to the substring at location **line column** in **filename**, for **length** characters

Argument	Function
variable ~ string [column [length]]	sets **variable** to **string**; if **string** is followed by a blank space and a number, **column**, that number is the offset into the **string**, from the left, before the remainder of **string** will be set to **variable**; (any blank spaces in the string itself must be enclosed in quotation marks.); the second number, **length**, if present, specifies how many characters after the offset will be included in **variable**
variable ? filename	sets **variable** to exact length in bytes of disk file named by **filename**
variable # string	sets **variable** to length in characters of **string**
variable < **format number**	allows a number to be formatted into a user variable using the same format options available for the p1 option in EHCO. This is useful for converting the internal format of numbers in command files (which do not have decimal points in them) into a form that can be used as input for commands that require decimal points in the correct place for different international formats. For example, if the current international format is USA: set x < @M 12345 would place '123.45 into variable 'x'.

The variables, which are stored on the RAM disk as strings, are implemented as the contents of the file R:CMD#.VAR, where # is a number one greater than the command processor number. SET_VAR will create this file as a hidden file, so it will not normally be seen.

Note that when you are *setting* a variable with the SET_VAR command, you do not preface it with a percent sign (%). However, when you use a variable, such as in an ECHO command (see the example that follows this section), you do preface the variable with a percent sign.

While user variables are stored as strings, they can be used as numbers. Strings may be up to 118 characters in length.

In SET_VAR,
- M stands for configured monetary units (in the United States, the default configuration is for two decimal places, xx.xx, for cents as hundredths of a dollar).
- Q stands for configured quantity units; the default configuration is for three decimal places, xx.xxx, for thousandths of a unit.
- @ denotes an entry made at a terminal.

SET_VAR has the forms shown in the following chart. Note that square brackets, [ ], mean that the contents enclosed within the pair of brackets are optional. A vertical bar, |, means *or*; it separates alternatives.

SET_VAR Form	Function
set_var	Lists contents of all variables
set_var;i	Deletes all variables
set_var x = hello world	Stores hello world in %x
set_var x + 5	Adds 5 to current contents of %x
set_var x - 1	Subtracts 1 from current contents of %x

SET_VAR Form	Function
set_var x * %b	Multiplies current contents of %x by %b
set_var x / 10	Divides current contents of %x by 10
set_var x %10	Stores the remainder of %x divided by 10 in %x
set_var x ? *filename*	Stores the length of the designated file in %x
set_var x # string	Stores the length of the designated string in %x
set_var x ^ %y	Stores the exclusive-or of %x and %y in %x
set_var x = M | Q xx.xx[x]	Stores the entered monetary (if M) or quantity (if Q) amount (xx.xx[x]) in %x
set_var x @[M | Q] promptstring	Echoes promptstring to command terminal, and waits for text (if @), a monetary amount (if @M), or a quantity (if @Q) to be entered at the terminal. That text or amount will then be stored in variable %x
set_var x := %y + 5	Stores the sum of %y + 5 in %x
set_var x ~ [M | Q*] "%y" [col [*length*]]	Stores in %x the string in %y. The string will be stored as text unless M or Q is entered to denote a monetary or quantity amount If *col* is specified, the string will begin *col* characters from the beginning of the line. If length is specified, the string will be *length* characters long.
set_var x $[M | Q] *file* [*line* | S# | Sy [*col* [*length*]]]	Stores in %x the specified line of the designated file. (The $ indicates the characters to be stored are coming from a file.) The line will be stored as text unless M or Q is entered to denote a monetary or quantity amount. If *line* or S# or S*y* is not specified, the first line of file will be used. The S in S# and S*y* indicates seek. S# is the offset from the beginning of the file. Sy takes the offset value currently stored in %y, reads the string at that offset into %x, then resets %y to the offset that is the beginning of the next line in file. If *col* is specified, the string will begin *col* characters from the beginning of the line. If *length* is specified, the string will be *length* characters long.
set_var x @M XXXX	Allows a number to be formatted into a user variable.

Commands to the Site Controller can be entered from four devices: the keyboard, a remote computer, the console, and cron files (which are discussed in).

The keyboard, remote, and console sources each have their own file of user variables, %a-%z. (Cron commands use the console's file of user variables.) These three sets of user variables are stored in hidden files on the RAM disk called CMD1.VAR, CMD2.VAR, and CMD3.VAR.

Therefore, it is important to realize that %a in a console command file is not the same variable accessed by, for instance, typing ECHO %a on the keyboard or from a remote computer.

ECHO with the p1 Option

If you use the SET_VAR command to store a number with decimal values in a percent variable, the ECHO command will display that number without a decimal point. For example, if you set x =M 1.23, and then enter the command echo %x, the display will show 123, not 1.23.

Use the p1 option to display numbers with decimal points, such as a dollar amount of $1.23 or a quantity amount of 1.234 gallons. Note that a number of digits can be represented using "<@#M>" where the number symbol represents the number of characters, including the decimal point and a space, between < and > .
In the first line of the example, note that there is a space before the equals sign (=), but not after.

```
R* SET x =M 1.23 ↵
R* SET ↵
x = "123"
R* ECHO %x ↵
123
R* ECHO;p1="Money=@M" %x ↵
Money=1.23
R*
```

New for internationalization, a number can be formatted into a user variable using the same format options available for the p1 option. This converts the internal format of numbers in command files (which do not have decimal points in them) in to a form that can be used as input for commands that require decimal points in the correct place for different international formats. For example, if the current international format is USA:
    set x < @M 12345
would place '123.45 into variable 'x'.

How to Use Branching and Subroutines

The command GOTO allows branching to arbitrary locations in a command file. The format of GOTO is:
    GOTO [-S*var*|-R*var*] *label*

The format of label is:
    *label: any comments here

The -S*var* parameter of GOTO sets the value of the one-character variable *var* to the address of the next line of the command file. The -R*var* tells GOTO to go to the location previously set by GOTO -S*var* for variable *var*.

The -S and -R parameters allow a limited form of subroutine. The call to the subroutine will have a -S and the return a -R. Note that these variables are the same ones that are set by SET_VAR.

Be careful to keep track of the variable names you have used, so you do not try to use the same variable for more than one thing.

The first character on the line of a label for GOTO must be an asterisk; the label must come right after the asterisk, with no spaces in between; a colon must come right after the label, also with no spaces. Since the label is implemented as a comment line, the normal command processor ignores it.

You can use GOTO to jump to anywhere in your command file, forward or backward. There is no limit to the number of labels and GOTOs you can use in a file. GOTO starts its search for the label at the beginning of the command file, so if you use subroutines, you should put them at the beginning of your command file to improve performance.

You can also use LOOP and RETURN. Here is an example of a subroutine you could use with LOOP and RETURN.

```
R* TYPE TEST6.CMD ↵
* short example of GOTO usage
* first go to main program
goto MAIN
* ----- CHECKPERM subroutine ----
* CHECKPERM is a subroutine to check user's permission level
* %P is current user's permission level
*CHECKPERM:
         if - %P 4
         BEGIN
         echo Permission denied; has level %P, needs level 4
         exit
         END
goto -Rb
* ---- main program starts here ----
*MAIN:
echo Main program starting
* check permission level
goto -Sb CHECKPERM
* program returns to here after doing CHECKPERM subroutine
echo Main program continuing
R*
```

Here is an example of a skeleton for a more complex program that uses subroutines.

```
R* TYPE TESTGOTO.CMD ↵
* uncomment this line for trace while debugging
* ================ TESTGOTO.CMD ===================
* Example of how to use goto for subroutines
*
* usage: TESTGOTO
*
* -------- jump to mainline ---------
goto MAIN
* ================ SUBROUTINES ===================
* ----- FIRST LEVEL A SUBROUTINES -----
* ------ your first subroutine -------
*SUBONE:
echo something
goto -Sb SUBSUB
echo something else
goto -Ra
* ------ your second subroutine -------
*SUBTWO:
echo do something new
goto -Sb SUBSUB
echo do something else new
goto -Ra
* ----- SECOND LEVEL B SUBROUTINES ----->
*SUBSUB:
echo do something again
goto -Rb
* ================ MAIN LINE ====================
*MAIN:
goto -Sa SUBONE
goto -Sa SUBTWO
* ============== END OF PROGRAM ==================
```

How to Search for a String in a File

Use the disk-based program FIND to find and print all occurrences of a specified string in one or more files. The format of FIND is:

FIND[;[A][I]] *pattern file*1 [*file2*] . . .

FIND prints all lines that include one or more occurrences of the specified pattern. If pattern contains spaces, it must be enclosed in double quote marks ("). With A option, FIND prints the name of the file and the line number of each occurrence of the pattern.

FIND maintains a counter with how many times the pattern was found. The value of this counter (up to 9999) is returned as the error code from FIND. The %E variable contains the error code from the last command executed. If a line has more than one occurrence of the pattern on it, the line will be printed only once, but the counter will reflect the correct number of total occurrences. With the I option, the counter will give the total number of lines the pattern was found on, rather than the total number of occurrences of the pattern.

```
R* TYPE TEST5.CMD ↵
* test for number of island
card readers down
PRINT DIAG;>SCRATCH 3
FIND;>NULL "went down"
SCRATCH
ECHO Island readers down =
%E
DEL SCRATCH
R*
```

Advanced Commands

The NEXT CLERK Command

The NEXT CLERK or NE CL command allows the disk journal to keep separate shifts for each console. Separate shift numbers (1-99) and separate shift serial numbers (1-999) can be kept for each console.

```
NEXT CLERK (NE CL)

R* NEXT CLERK ↵
Console number? 1 ↵
R
```

Before the command can be used, set the Unique shift #'s for every console parameter on page 9 of SYS_PAR to Yes. If this SYS_PAR parameter is set to No, when you try to run the command, a Command failed message appears.

When the NEXT CLERK command is run, there is no screen display, but the change in shift number for the designated console is noted in the disk journal.

If non-fuel sales have not been paid off on the designated console, the command will terminate with a Transaction(s) in progress message.

The CLOSE Command

The CLOSE command allows you to make a retroactive safe drop to the previous shift.

The command is used only in command files, never by itself on a command line at a terminal. There is no screen display with CLOSE.

The SCREEN Command

SCReen Allows command files to perform screen functions independent of the type of terminal connected. The command is SCReen with the following parameters.

SCREEN CLEAR	clears the screen
SCREEN EOLN	erases to end of line
SCREEN EOS	erases to end of screen
SCREEN ENHANCE	enhanced text (ANSI/VT100 only)
SCREEN NORMAL	normal text (ANSI/VT100 only)
SCREEN HOME	homes the cursor
SCREEN POSITION row col	moves cursor to location row col
Note: 0 0 is upper left hand corner

19 – Automatic Cron Commands

The SC III's cron (chronological) function allows you to have commands executed automatically at specified times or when certain events occur.

Like EXECUTE commands, cron commands run in background and do not delay normal sales operations.

Each cron entry loaded by LOAD CRON is numbered and has two parts:
- a string of characters representing the conditions for execution
- a command that will be executed every time the conditions become true. The Site Controller tests the conditions of each entry at least once per minute as part of its normal housekeeping activities.

An entry remains in effect until it is overwritten with LOAD CRON or erased with REMOVE CRON or LOAD CRON;I.

Commands executed by cron can be regular Site Controller system commands, disk-based commands (.BIN commands), or command files (.CMD commands). Most of the time, cron is used to execute user command files.

Almost any sequence of commands that can be executed interactively by a human user can be put into a command file to be executed automatically by cron. Commands that require data must have data supplied, either by including the data in the command file or by redirecting it from a separate file. Cron will search the normal command search path for command files.

The commands that can be executed by a cron entry follow the permission level of the user that loads the cron.

Note: If a cron or command file attempts to run a disk-based program and finds that the program space is busy, it will wait until the space is free. This is the opposite of the case where if you invoke a disk-based command directly at the prompt and the program space is busy, the command will be terminated with an error.

What Conditions can be Specified for cron

The first character of a cron entry determines what condition will cause that entry to be executed. The four types of cron entries are:
- timed entry
- restart entry
- boot entry
- transaction memory full

The most common type of cron entry is a ***timed entry***. A timed entry begins with an at sign (@). Timed entries will be executed whenever the system date and time matches the date and time specified in the entry.

A *restart entry* begins with an exclamation mark (!). It will be executed whenever the system suffers a general failure (crash). A restart entry could execute a command file that saves the diagnostics and history reports in a disk file for later examination, then restarts the system automatically. Cron should not have more than one restart entry. Shows in When column as RESTART.

A r*eboot entry* begins with caret (^). It will be executed whenever the system is rebooted. It works when the REBOOT command is executed and when the system is rebooted after a power failure. Like the restart entry, it can be used to execute a command file that saves diagnostic and status information in a disk file. Cron should not have more than one reboot entry. Shows in When column of P CR as REBOOT.

A *transaction-memory-full entry* begins with a percent sign (%). It will be executed at the same time as the message on transaction memory, *Transfile XX% full*, is logged. (The XX% at which the *Transfile full* message is logged is set in SYS_PAR.)

Transaction memory shows up as Memory in the When column of PRINT CRON output.

Timed cron Entry

A cron entry that begins with an at sign (@) is taken as a timed cron command. You can specify the day of the week, month, date, year, hour, and minute that you want the command executed. Days of the week are numbered from 01 starting with Sunday. The hour is specified in 24-hour time.

You must use leading zeros, if necessary, so each number is two digits. For example, Sunday is 01, not just 1, and June is 06, not 6.

The format of a timed cron entry is:
  @DWMMDDYYHHMM [-]*command*
- *DW* is the day of the week as a two-digit number (Sunday=01, Monday=02, Tuesday=03, etc.).
- *MM* is the month as a two-digit number (January=01, February=02, etc).
- *DD* is the day of the month as a two-digit number.
- *YY* is the last two digits of the year (97 for 1997).
- *HH* is the hour as a two-digit number, in 24-hour time.
- *MM* is the minute as a two-digit number.
- [-] The optional hyphen (-) before the command name suppresses output to the printer. This allows the command to execute while someone is logged on to the command terminal. CRON runs using command processor 33. If console is in command mode, CRON waits.
- *command* is the name of the Site Controller command or user command file to execute.

The time field is right justified, which means that it is read by the Site Controller from the right, not from the left. That is, if you do not care about one or more of the left-most time intervals, you do not have to specify them.

An ** also means you do not care about that time interval. For example, @01********00 means every hour on the hour on Sundays, @1200 means at 12:00 noon every day, and @01**0400 means at 4:00AM on the first of every month.

Restart cron Entry

A cron entry that begins with an exclamation mark (!) will be executed in the event of a system crash. The format of a restart cron entry is:
   ! [-]*command*

The exclamation mark is all that is needed to specify this condition. Remember to leave a space between the exclamation mark and the command. There should be only one restart cron entry. If there is more than one restart cron entry, only the first one will be executed.

The optional hyphen (-) before the command name suppresses output to the printer. This allows the command to execute while someone is logged on to the command terminal. Will display RESTART in the When column of P CR output.

Uses of the Restart cron Entry

System crashes are unlikely and should be reported to your field service representative. You can use restart cron to save diagnostic information after a crash. Then you can restart the site without taking the chance of losing information that could help your service technician diagnose the cause of the crash.

Below is an example of a restart command file to use with cron. This command-file example appends the diagnostic reports to the end of a file called CRASH.LOG, which can be inspected or printed later.

```
R* TYPE CRASH.CMD ↵
* to be executed by cron after a crash
disable history
log message -- Saving Crash Log --
* the following commands save diagnostic information
* in a disk file
enable dump;a CRASH.LOG
        print date
        print tip
        print diagnostics 1
        print history 80-
* the following command restores reconstructed
* tables from BACKUP.DTA
* use only if you keep current backups
* of system data
        restore reconstructed except sales transactions from BACKUP.DTA
        print monitor
* the following command restarts the site
* after a severe crash
* use RUN without options to restart site only
* if crash was not severe
run
        echo ------------
disable dump
log message -- Restarting Site --
enable history
R*
```

Since circumstances surrounding crashes and reboots vary, be careful in designing command files intended to execute after these events, so that the benefit of having operations resume automatically is balanced against the risk of not checking out the system before allowing customers to get fuel.

Severe crashes that are likely to have serious consequences require the command RUN;I to restart, while RUN will work after mild ones. You might wish to omit RESTORE from the above command file and change RUN;I to RUN so that the system will not restart automatically after severe crashes or if tables are reconstructed.

If you have cron restore reconstructed tables automatically after a crash, make sure a current and complete backup is present in the root directory on the default drive. You can use a cron command to automatically back up system data every day.

Reboot cron Entry

A cron entry that begins with a caret (^) will be executed when the Site Controller is rebooted. The caret is all that is needed to specify this condition. Remember to leave a space between the caret and the command. If there is more than one of this type of entry, only the first will be executed.

   ^ [-]*command*

The optional hyphen (-) before the command name suppresses output to the printer. This allows the command to execute while someone is logged on to the command terminal. Will display REBOOT in the When column of P CR output.

Below is an example of a command file for the reboot cron entry.

```
R* TYPE MYBOOT.CMD ↵
* to be executed by cron after a reboot
disable history
echo -- Saving Boot Log --
* the following commands save
* transaction-in-progress information
* in a disk file, then print the file
* on the log printer
enable dump MYBOOT.LOG
      echo ------
      print date
      print tip
disable dump
log file MYBOOT.LOG
R*
```

Transaction-memory cron Entry

A cron entry that begins with a percent sign (%) will be executed when the
Transfile XX% full message is logged. The format of a transaction-memory
cron entry is:

> % [-]*command*

The optional hyphen (-) before the command name suppresses output to the
printer. This allows the command to execute while someone is logged on to
command terminal.

The transaction-memory cron entry will display Memory in the When column
of PRINT CRON output. The point at which this cron executes is set in
configuration.

Where to Put Command Files for cron

Cron will search the normal command search path for command files and disk-
based commands. The command search path used depends on how the site is
configured.

Standard search path for an SC III

R:	the RAM drive
C:\SC3	SCIII root directory
C:\SC3\BIN	\BIN on hard drive

If you want to keep your command files for cron in a separate directory that is
not on the command search path, you can always use the full pathname to
execute the command. For example, you could keep your command files for
cron in /CRON. Another approach is to reconfigure the site.

How to Enter cron Commands

Use the command LOAD CRON or LO CR to enter cron commands. You may use the C option with LOAD CRON to load more than one entry with a single command.

```
LOAD CRON (LO CR)

R* LOAD CRON;C ↵
Command number? 1 ↵
Command? @0800 SHIFT1 ↵
Command number? 2 ↵
Command? @1201 PRINT PUMP;>PUMPLOG ↵
Command number? 3 ↵
Command? ! CRASH ↵
Command number? 4 ↵
Command? ^ MYBOOT ↵
R*
```

How to Keep cron Command Output from the Log

Unless it is redirected, the output from cron commands is printed on the log. To prevent output from printing on the log, put a hyphen (-) before the command. If you want to save the output of a cron command, you may redirect its output to a file by using the redirection options (> or >>) or by putting the commands in a command file and using ENABLE DUMP in the file. The cron entry in the example below executes a command file and prints nothing on the log.

```
R* LOAD CRON ↵
Command number? 5 ↵
Command? @1203 -PR_DATA ↵
```

How to Print a Listing of cron Entries

Use the command PRINT CRON or P CR to print a listing of cron entries. The listing shows the command number, when the command will be executed, and the name of the command.

```
PRINT CRON (P CR)

R* PRINT CRON ↵
# When             Command
1 *** **/**/**  8:00 SHIFT1
2 *** **/**/** 12:01 PRINT PUMP;>>PUMPLOG
3 RESTART            MYCRASH
4 REBOOT             MYBOOT
5 *** **/**/** 12:03 -PR_DATA
6 *** **/**/** 17:00 SHIFT2
7 *** **/**/**  1:00 SHIFT3
R*
```

Asterisks are substituted for time fields that were not specified. For example, if no day of the week were specified, only three asterisks would appear where Mon, Tue, etc., would otherwise be printed. Also, the listing will automatically separate the time fields by spaces or slashes.

How to Remove cron Commands

To remove a single CRON entry, use REMOVE CRON or REM CR and specify the entry number. You may use the C option with the REMOVE CRON command.

```
REMOVE CRON (REM CR)

R* REMOVE CRON;C ↵
Command number? 4 ↵
Command number? 6 ↵
Command number? ↵
R*
```

The REMOVE CRON command has two options:
- The A option attempts to terminate a currently running disk-based program. It also terminates any currently running cron command and any Site Controller commands running from a console.
- The I option deletes any pending EXECUTE commands.

Use the command LOAD CRON with the I option to clear all cron entries from the cron file.

```
R* LOAD CRON;I ↵
R*
```

20 – Communications

Remote Authorizations

Dial-out Phone Numbers

If your site uses a dial-out line for card-transaction authorization, you need to enter the remote phone number—and the backup phone number, if there is one—into the Site Controller. This if for CFN remote verification only. For bank networks, refer to the specific manual.

How to Enter Dial-out Phone Numbers

Use the command LOAD PHONE or LO PH to enter the remote phone number(s).

```
LOAD PHONE (LO PH)

R* LOAD PHONE ↵
Main (m) or Backup (b)? M ↵
Phone number? 367-6892 ↵
R*
```

1 Type: LOAD PHONE.

2 Main or Backup? *Enter an M or B*.

3 Phone number? *Enter the phone number*.

The main number is the number the Site Controller will call first; the backup number is the number the Site Controller will call if it does not connect to the main number.

Usually the main and backup numbers are the same. That way the Site Controller will try to dial the number again if it does not get through the first time.

You may specify other information about how the Site Controller is to dial the phone number:
- Use two commas in the phone number to insert a 2-second pause in dialing.
- Use a P before the phone number to specify pulse dialing, or use a T to specify tone dialing. If you do not specify P or T, tone dialing will be used. (If you have a PBX phone system, you may need to first use pulse to obtain a line out, then switch to tone, which is much faster, to dial the number of the remote host.)

• You may use hyphens and parentheses in the phone number, but they are not required. The Site Controller ignores the hyphens; they are for your convenience only.
• You may use the C option with the command LOAD PHONE to load both phone numbers. The phone numbers are set up to dial out through a PBX system. The modem will dial 9 (pulse), wait 2 seconds, then dial the number using tone.

```
R* LOAD PHONE;C M P9,,T543-9974,B,P9,,T543-3245
Phone number? ↵
R*
```

• A single comma separates the command arguments, and two commas enter a 2-second pause.

How to Print Dial-out Phone Numbers

Use the command PRINT PHONE or P PH to print the dial-out phone numbers that have been entered. The printout will show whether the phone numbers are for the following:
• the Main (or 1) number and the Backup (or 2) number

```
PRINT PHONE (P PH)

R* PRINT PHONE ↵

          Main              Backup
CFN    P9,T543-9974      P9,T543-3245
R*
```

• the bank host (Bank)—the 3 and 4 numbers
• the auxiliary phone number (Aux)—the 5 and 6 numbers.

How to Initiate a Call

Dial-out sites call the remote number automatically when they need to get authorization for a transaction. You can use the command CALL to manually initiate a call.

```
CALL

R*  CALL ↵
Dialing .... Connected.
R*
```

If the remote modem is down, or if the site is not configured to dial out, the terminal will print host unavailable when you try to execute CALL. If the connection is never established or is broken off, the terminal will print Failed.

Kermit

Kermit is a disk-based program for data transfer to another computer, either another SC III or a PC. A summary of the KERMIT command looks like this:

KERMIT disk-based program for file transfer to external computer. Note: press CTRL-SHIFT-6 to exit from connect mode.

Options: [baud][D][L#] {R | S *file1* [*file2*] ...}

baud	data transmission rate to use, in bytes-per-second
D	debug mode (used in development only)
L#	Site Controller RS-232 port number to use; where # is the port number. Note ports 7-10 are not accessible on the SC III via Kermit.
(without R or S)	connect mode; default is port number 1
R	receive-file(s) mode
S *file1* [*file2*] ...	send the specified file(s) to the connected computer

Kermit can be used for three things:
- To download files to the Site Controller.
- To upload files from the Site Controller.
- To connect from the local terminal through the Site Controller to the remote port. You can take advantage of this feature to test or use the modem that is connected to the Site Controller.

To download a file from another PC to the SC III, first call and connect to the Site Controller's modem using a PC communications package such as ProComm, CrossTalk, Telix, PC Kermit, Qmodem, etc.

Then do the following:

Site Shows	You Do
signon	password ENTER
R*	KERMIT R ENTER Do command on local PC to initiate upload transfer using Kermit protocol. Local PC communications program will usually give status while transfer takes place.

When done, the Site Controller gives its R* prompt.

To upload a file from the SC III, first call and connect to the Site Controller's modem using a PC communications package such as ProComm, CrossTalk, Telix, PC Kermit, Qmodem, etc. Then do the following:

Site Shows	You Do
signon	password
R*	KERMIT S [path/filename] ENTER • Do command on local PC to start download transfer using Kermit protocol. • Local PC communications program will usually give status while transfer takes place. • When done the Site Controller gives its R* prompt.

21 – Configuration Command Summary

Configuration commands affect operation of the system and should be used only by trained personnel or with the advice of technical services.

The configuration commands are fully documented in MDE-4314 CFN III Configuration Manual for Windows NT Version 3.3.

In the following summary forms of the configuration commands, square brackets, [...], mean that the contents enclosed within the pair of brackets are optional.

Disk-based Configuration Commands

Options for each command: [-P][-V] [*filename*]
-P for print current configuration
-V display in TTY form if port is configured as a CRT in the system
   parameters, or vice versa

CONSOLE	disk-based configuration program for a console
FUELPT	disk-based configuration program for fuel point readers
GATE	disk-based gate-reader configuration program.
PERM	disk-based command to change permission levels of system resident commands
PUMP	disk-based configuration program for pumps
READER	disk-based configuration program for island card reader
SYS_PAR	disk-based configuration program for system parameters; main configuration program for Site Controller
TABLE	disk-based configuration program for data table sizes
TRFMT	disk-based configuration program for local transaction format

22 – Preventive Maintenance

The SC III comes housed in a standard PC "mini-tower" case. For information on routine maintenance of equipment, please consult the supplied PC manuals.

How to Clean the Diskette Drive

Like the more familiar magnetic read and write heads in tape recorders and VCRs, diskette drive heads benefit from periodic cleaning. Just how often you need to clean the diskette drive heads at your site depends on how much you use the diskette drive(s). This will vary from site to site. Many sites will not use the diskette drive at all for day-to-day operation. Others may choose to store reports, such as shift-break reports, in diskette files. If your site has a hard-disk drive, then you probably will not use the diskette drive very often.

If you use a diskette drive three or four times a day, you should probably clean the heads every six months. In any case you should clean the diskette heads once a year whether or not the drives have been used. This removes any accumulated dust.

Special diskette drive cleaning kits are available from Gasboy and other vendors, and should be used to clean the diskette drive on the Site Controller. A kit is available for the 3.5-inch drive.

When Batteries Fail

If your Site Controller logs the message *Battery X failed*, it means that battery number X, used to back up RAM memory, has failed. There are two coin batteries that maintain the memory when AC power fails. A red light on the SC III memory PCB indicates that one of the batteries is bad. Close S2 position 2 and open position 1 to switch to battery 2. While any one battery should maintain the memory without AC power for a short period of time, you should replace a battery as soon as it goes bad.

Do not turn off power to the Site Controller if this message has occurred, or memory may be lost.

Island Card Reader

How to Clean the Magnetic Strip Reader

If your system reads magnetic cards in one or more island card readers or consoles, then you need to clean the magnetic strip reader units periodically. A magnetic strip reader that needs cleaning has a harder time reading cards, requiring several passes to read some cards.

How often magnetic strip readers need to be cleaned depends on how often they are used and also the type of environment. Generally, island card readers need to be cleaned about once a month, but island card readers with many diesel fuel transactions may need to be cleaned weekly.

A special cleaning card is used to clean magnetic strip card reader units. Magnetic strip cleaning cards are available from Gasboy (part number C08757). These cards are individually packed in foil wrappers containing an alcohol-based cleaning solution. After removing the card from the wrapper, pass it several times in the usual direction through the strip reader, then discard it.

How to Clean the Optical Card Reader

Optical card readers should be cleaned with a clean handkerchief wrapped around an optical card. Dampening the handkerchief with rubbing alcohol or glass cleaner may help. Hold the card by the end and insert it endwise in the reader, then move it gently from side to side. Be careful not to damage the card guides at the edges of the reader.

Optical card readers should be cleaned about every three months, or more frequently if you observe an increase in the number of reader errors.

Console

Magnetic Card Reader

Follow the procedure discussed above under Island Card Reader for cleaning the magnetic strip reader.

Keyboard

You need to clean the keyboard only if the key caps become noticeably grimy or if loose debris has collected in the key wells.

To clean the key caps, use a soft, lint-free cloth. Spay a small amount of general purpose wall cleaner (such as the products trademarked 409® or Fantastik®) on the cloth. Never spray anything directly on the keyboard. Turn the keyswitch to OFF and remove the key. Wipe the key caps with a circular motion until clean. Replace the key and you are ready to resume normal operation.

To clean debris from the key wells, use a vacuum cleaner with a drapery attachment. Use a plastic attachment only, not a metal one, to avoid scratching the case. First make sure all clear key covers are firmly seated by pressing down on each key. Then pass the vacuum attachment over the keys without actually touching them. Any loose matter that has fallen into the keyboard will be removed.

23 – Diagnostic Commands

System Diagnostics

How to Print System Diagnostics

Use the command PRINT DIAGNOSTICS or P DI to print the diagnostics. The terminal will print the status of each site device. If any errors have occurred since the diagnostics were last reset, it will also print the error codes and the number of times the error has occurred.

Diagnostics should be printed monthly, or whenever a problem occurs. The most common errors that you might observe are:
- No response (NOR) from a pump control unit, reader terminal, or console. This means that the device did not respond to a Site Controller poll or command.
- A card-read error (RDE) from a island card reader or console. This could be the result of an user error or a bad card, or could mean that a card reader is malfunctioning.
- A no-quantity transaction (NQN) from a pump. This could mean a pump is not registering fuel sold. After several no-quantity transactions, a pump will shut down.
- PIN errors are from the reader and console. They indicate a customer entered an incorrect PIN number.
- DIE means the device went down.

The diagnostic error codes are given later in this chapter. If any of these errors occur frequently, report the problem to your service representative.

```
                     PRINT DIAGNOSTICS (P DI)

R* PRINT DIAGNOSTICS ↵

           D I A G N O S T I C S
Diagnostics reset: Tue 5/20/99 4:52 PM

Site Controller (1001, 1) came up Mon 6/02/99 9:31 AM
  Reader terminal(s) down  POS terminal(s) down  Pump(s) down
  Fuel Point readers(s) down  SDI(s) down
Printer/PINpad #1 on loop 4 went down Wed 6/04/99 3:24 PM
     DIE  41
Island Card Reader #2 never came up
Island Card Reader #3 on loop 4 went down Fri 5/23/99 9:58 AM
  Printer down
     DIE   2
Island Card Reader #4 on loop 4 went down Fri 5/23/99 9:56 AM
  Printer down
     DIE   1
Printer/PINpad #5 never came up
Profitpoint #1 on loop 4 went down Wed 6/04/99 3:24 PM
     DIE  47
Checkpoint #2 on loop 2 went down Thu 5/29/99 12:06 PM
     DIE   2     NOR  14
     DIE   1
Fuel Point Reader #1 never came up
SDI #1  never came up
R*
```

You may use numerical options with the command PRINT DIAGNOSTICS to print the diagnostics for specified types of devices.

```
R* PRINT DIAGNOSTICS 3 ↵

           D I A G N O S T I C S

Island Card Reader # 1 on loop 1 came up Mon 5/12/99 12.18 PM
Printer/PINpad #3 on loop 3 came up Mon 5/12/99 12.18 PM
Printer/PINpad #10 on loop 3 came up Mon 5/12/99 12.18 PM
R*
```

The device type numbers are:
0 = when diagnostics were last reset
1 = site information
2 = PCUs
3 = readers
4 = consoles
5 = fuel point readers
6 = gate controllers
7 = tank gauges
8 = pumps
12 = SDI

How to Reset System Diagnostics

Use RESET DIAGNOSTICS or RE DI to set the diagnostic error totals to zero.
Reset the diagnostics monthly after you print the current diagnostics with
PRINT DIAGNOSTICS. This will maintain a current error diagnosis.

```
RESET DIAGNOSTICS (RE DI)

R* RESET DIAGNOSTICS ↵
R*
```

How to Reset System Diagnostics after Reconfiguration

RESET DIAGNOSTICS without any options just clears the counters for existing diagnostics records. RESET DIAGNOSTICS with the I option removes all the diagnostic records and re-creates records for the current configuration.

You can use RESET DIAGNOSTICS;I to delete the diagnostics records for the non-existent devices. This can be useful if you reconfigure the site to have fewer of some type of device. After you reconfigure the site, diagnostic records will still exist for the devices that have been removed.

Diagnostic Error Codes

You may use the A option with PRINT DIAGNOSTICS. The following error codes may appear in response to PRINT DIAGNOSTICS;A.

Pump Control Unit Error Codes

Errors in pump control unit-to-Site Controller messages:
    CRC — bad cyclical redundancy check (CRC)
    DIE — device went down
    NOR — no response
    NQN — no quantity

Errors in Site Controller-to-pump control unit messages:
    NB0 — invalid hose number or price level
    NB1 — pump in use
    NB2 — transaction data unavailable
    NB4 — not hexadecimal
    NB5 — invalid command
    NB6 — invalid pump number
    NB7 — overrun
    NB8 — buffer overflow
    NB9 — test
    NBA — bad cyclical redundancy check (CRC)
    NBD — power failure
    NBE — RAM contains transaction data

Island Card Reader or Gate Reader Error Codes

Errors in island card reader-to-Site Controller messages:
    CRC — bad cyclical redundancy check (CRC)
    DIE — device went down
    NOR — no response
    PIN — PIN errors
    RDE — read error

Errors in Site Controller-to-island card reader messages:

> NB3 — buffer in use
> NB4 — not hexadecimal
> NB5 — invalid command
> NB6 — undefined EE command number
> NB7 — overflow/framing error
> NB8 — input buffer overrun
> NB9 — alphanumeric display busy
> NBA — bad cyclical redundancy check (CRC)

Console Error Codes

Errors in console-to-Site Controller messages:

> CRC — bad cyclical redundancy check (CRC)
> DIE — device went down
> NOR — no response
> PIN — PIN errors
> RDE — card read error

Errors in Site Controller-to-console messages:

> NB3 — buffer busy
> NB5 — invalid command
> NB7 — receiver overrun
> NBA — bad cyclical redundancy check (CRC)

Fuel Point Reader Error Codes

Errors in FPR-to-Site Controller messages:

> CRC — bad cyclical redundancy check (CRC)
> DIE — device went down
> NOR — no response
> PIN — PIN errors

Errors in Site Controller-to-FPR messages:

> NB4 — not hexadecimal
> NB5 — invalid command
> NB7 — receiver overrun
> NB8 — input buffer overrun

Event History

The SC III keeps a file of the last one hundred significant events. Events kept in the history file include:

- any command execution, except disk-based programs (which are files with the .BIN extension).
- changes in switch detect on pumps.
- low level state changes for all transactions.
- other miscellaneous system events.

The event history is mainly useful for tracking down problems. Your service technician may have you print out the history file if you call with a problem.

How to Enable and Disable Event History

The history mechanism is initially enabled, and may be disabled and enabled by command. Use the command DISABLE HISTORY or DI HI to disable history recording.

```
DISABLE HISTORY (DI HI)

R* DISABLE HISTORY ↵
R*
```

Use the command ENABLE HISTORY or E HI to re-enable event history recording.

```
ENABLE HISTORY (E HI)

R* ENABLE HISTORY ↵
R*
```

Use the command EN HIS;I to clear the history file.

How to Print the Event History List

Use the command PRINT HISTORY or P HI to display the history list. You can use ranges with the command to print selected events.

```
PRINT HISTORY (P HI)

R* PRINT HISTORY ↵
 1 Cmd proc #1 User #0: load product   107
 2 Cmd proc #1 User #0: load tank      130
 3 Cmd proc #1 User #0: print product  149
 4 Cmd proc #1 User #0: print tank     107
R*
```

In the example, Cmd proc stands for Command processor. The command processor is where commands to the Site Controller are entered from. Command processor 1 is the keyboard; 2 is a remote computer terminal; and 3 is either the console or cron-command files.

When you use the A option with the PRINT HISTORY command, the history up to the present moment is printed, but the display does not then return to the prompt. Instead, PRINT HISTORY remains active and the command continues to print out historical entries as they occur until you press ^C.

System Status

How to Print System Monitor Messages

The Site Controller is constantly monitoring the status of its system.

Use the command PRINT MONITOR or P MO to display the most recent system monitor messages. This allows you to print the messages as a group, without any intervening transactions. This command is also handy to use when dialing the Site Controller from a remote location.

```
PRINT MONITOR (P MO)

R* PRINT MONITOR ↵
Pump Control Unit #1 came up Sat 15/25/99 12:01 PM
Pump Control Unit #12 came up Sat 15/25/99 12:01 PM
Island card reader #1 Case Open. Thu 9/15/99 5:09 PM
Island card reader #1 Case Closed Thu 9/15/99 5:11 PM
Pump Control Unit #1 came up Thu 9/15/99 5:23 PM
Tank #3 7476 Gal Delivery Thu 9/15/98 8:03 PM
Check Pt/Profit Pt #1 came up Thu 9/15/98 10:34 PM
Check Pt/Profit Pt  #1 EMERGENCY STOP Thu 9/15/99 10:45 PM
Check Pt/Profit Pt  #1 end emergency stop Thu 9/15/99 10:45 PM
R*
```

Use the A option with PRINT MONITOR to print the record number of each system monitor message. If the record numbers do not start at 000, they will wrap back to 000 and then continue on; do not worry about this, you will see all the messages sequentially.

```
PRINT MONITOR (P MO)

R* PRINT MONITOR;A ↵
007 Pump Control Unit #1 came up Sat 15/25/99 12:01 PM
008 Pump Control Unit #12 came up Sat 15/25/99 12:01 PM
009 Island card reader #1 Case Open. Thu 9/15/99 5:09 PM
000 Island card reader #1 Case Closed Thu 9/15/99 5:11 PM
001 Check Pt/Profit Pt #1 came up Thu 9/15/98 10:34 PM
002 Check Pt/Profit Pt  #1 EMERGENCY STOP Thu 9/15/99 10:45 PM
003 Check Pt/Profit Pt  #1 end emergency stop Thu 9/15/99 10:45 PM
R*
```

You can use ranges with PRINT MONITOR to print specified messages.
   PRINT MONITOR *-nn* prints the last *nn* messages.

```
R* PRINT MONITOR -3 ↵
Pump Control Unit #1 came up Thu 9/15/99 5:23 PM
Tank #3 7476 Gal Delivery Thu 9/15/99 8:03 PM
Check Pt/Profit Pt #1 came up Thu 9/15/99 10:34 PM
Check Pt/Profit Pt  #1 EMERGENCY STOP Thu 9/15/99 10:45 PM
Check Pt/Profit Pt  #1 end emergency stop Thu 9/15/99 10:45 PM
R*
```

PRINT MONITOR *@yymmddhhmm* prints all messages since date and time specified, in order by record number. If you enter a partial argument, the Site Controller uses the current date and time except for the data you enter to replace it. It uses the data you enter starting at the right-hand side of the argument.

```
R* PRINT MONITOR @9309172230 ↵
Check Pt/Profit Pt #1 came up Thu 9/15/99 10:34 PM
Check Pt/Profit Pt  #1 EMERGENCY STOP Thu 9/15/99 10:45 PM
Check Pt/Profit Pt  #1 end emergency stop Thu 9/15/99 10:45 PM
R*
```

For example, if you enter @1245, the Site Controller will use the current year, month, and day, but will use 12:45 for the time. If you enter @061245, the system will use the current year and month, but will use the 6th day of the month and 12:45 for the time.

You must specify the time in 24-hour time. For example, 10:00PM is 2200.

PRINT MONITOR ## prints messages starting with the record number following ##. You can use this type of range to print system monitor messages that have occurred since the last time you used the command.

```
R* PRINT MONITOR;A 1 ↵
002 Tank #3 7476 Gal Delivery Thu 9/15/99 8:03 PM
003 Check Pt/Profit Pt #1 came up Thu 9/15/99 10:34 PM
004 Check Pt/Profit Pt  #1 EMERGENCY STOP Thu 9/15/99 10:45 PM
005 Check Pt/Profit Pt  #1 end emergency stop Thu 9/15/99 10:45 PM
R*
```

How to Display Current System State

The disk-based program WOW displays the current state and history of the system. It must be run from a CRT terminal. To quit the program, press any character key.

The command WOW -h displays only the current state.

How to Display Buffers in Use

On a CRT display, the disk-based command BUFFERS shows a continually updated display of buffer usage by type. On a printer, the command prints only the buffers currently in use.

BUFFERS shows how many of each type of buffer are in use. This command may help spot Malloc: out of buffers errors. (Malloc stands for memory allocator.) Use ^C to terminate the command.

An example of the BUFFERS display is shown. It shows the number of free buffers (Free), the number of transaction-in-progress buffers in use (TIPs), and the number of polling buffers in use (Poll). Buffers in use are represented as pound signs (#) next to the type, in hexadecimal, of the buffer. Pound signs appear and disappear as buffers change type.

```
Free = 90 TIPs = 40 Poll = 5
02 #######
04 #######
```

The table below shows the types of buffers available.

Buffer Type	Code	Description
01	SITE_POLL	messages to host and loops
02	SCRATCH	temporary scratch buffer
03	WHEN	sent when time limit expires
04	TTY_BUF	tty input buffer
05	COMMAND	command from SCIII to loop device
06	RQST_DATA	data requested from device
07	TIP	transaction in progress buffer
09	LOG_MESS	message to be logged
0A	HOST_AUTH	host authorization message
0B	HOST_ABORT	host abortion message
0C	HOST_COMP	host completion message
0D	COMP_TRANS	completed transaction
0E	LOG_FILE	log this file
0F	PUMP_MESS	command to/from pump driver
10	KEY_REQ	key management request
11	TRANS_COMP	different completed transaction
12	HOST_UP	host is now up
13	ENABLE	tells driver to startup devices
14	LIFE_AND_DEATH	tells driver device came up/down
15	DISABLE	tells driver to kill a device
16	ABORT_TRANS	message to abort a transaction
17	DIS_DEV	device can now be disabled
18	ACTIVATE	message to activate pump
19	DEACTIVATE	message to deactivate pump
1A	IGNORE	response is to be ignored
1B	RBROAD	reader broadcast message
1C	DIAG_ERROR	log error in diagnostics
1D	RESET_DIAG	reset all diagnostics
1E	PUMP_STAT	get pump status update
1F	REACTIVATE	message to reactivate a pump
20	PUMP_PAUSED	message saying pump is paused
21	ABORT_VERF	abort a verification in progress
22	HAVE_VERF	we have verification
23	SETTLE	perform settlement with bank
24	P_ESTOP	command to E-stop a pump

Buffer Type	Code	Description
25	P_ECONT	command to E-continue a pump
26	ASK	ask if user wants receipt
27	RCPT_REC	standard receipt record
28	REC_DONE	end of receipt
29	NEED_HOST	call host
2A	GOT_CARRIER	got carrier on line
2B	LOST_CARRIER	lost carrier on line
2C	ACKNOWLEDGE	acknowledge transmission received
2D	ACK_MEMLOST	acknowledge memory lost
2E	RESPONSE	general response
2F	PRICE	load a single price
30	PRICE_LEV	load price levels
31	CON_UPREQ	console pump update request
32	CON_UPDATE	console pump update
33	GET_HOSE	get hose number off hook
34	BAD_HOSE	invalid hose off hook
35	IDLE_PRICE	clear pump display
36	TEST_PCU	test PCU state 0
37	TEST_PCU1	test PCU state 1
38	GOT_PIN	got PIN from PIN pad
39	ITEM_POD	a pod of items
3A	COR_VOL	temperature corrected volume
3B	DELIVERY	delivery request
3C	GAU_DONE	gauge acknowledgement
3D	ALARM	gauge alarm conditions
3E	RAW_VOL	uncorrected volume
3F	UPDATE	request update
40	GRADES	PAM grades
41	PAM_LEV	PAM price level
42	SET_PRIORITY	set user priority
43	GET_PDATA	unsolicited data update
44	PAM_REAC	PAM reactivate
45	GET_CAP	get tank capacity
46	HOST_DOWN	host has gone down
47	PAM_DEAC	deactivate if RQST_DATA unexpected
48	UPC	Price look-up

How to Examine Contents of Memory

The disk-based command DUMP displays the contents of various portions of memory. You can use it to inspect transactions in progress (TIPs), tables by name, or ranges of addresses in core.

DUMP TIP (DTIP) prints a human-readable status of transactions in progress. DUMP can take several forms, as shown below:
- DTIP *pumpnumber* [P]
  dumps the transaction in progress on the specified pump.
  If the P option is given, it will display data for the previous transaction.
- DTIP NF *consolenumber* [P]
  dumps the transaction in progress on the specified console.
  If the P option is given, it will display data for the previous transaction.
- DUMP CORE [*addressrange* [*page size*]]
  dumps the specified range of addresses from memory.
- DUMP *tablename* [*major range* [*minor range*]]
  dumps, from the specified table, record numbers included in the major range (or subrecords in the minor range).

Ranges of address may be specified using hexadecimal numbers separated by a hyphen (-) character. Record number ranges are given in decimal numbers separated by a hyphen.

How to Display Site Controller Status

The disk-based command STATUS provides various system information, depending upon what options are given it. Options may be combined as a string of letters.

STATUS takes one or more of the options shown below.

B   Backup: Backs up user data in a file of your choosing (enter the command as
           STATUS;>>**filename** B).

C   CPU: Calculates percentage of CPU being used at site. Program requests all available
           CPU for five seconds and reports how much it was not able to get.

H   Host: Reports last transaction number sent to a CFN host.

N   No-sale: Reports all non-zero no-sale counters.

O   Oldest: Returns oldest transaction number as its error code %E.

R   Reports. Prints reports on users (sign-ons). The reports give statistics on no-sales,
           item voids, sale voids, and how long that user was signed on during the requested
           period.
           The default report is for the previous shift. A character following the R indicates the
           period requested:
              C = Current shift
              D = Current day
              Y = Yesterday
              T = Cumulative totals
              1 = Previous shift
              2 = One before previous shift
              3 = Two before previous shift
              P = Cumulative totals at last day-change

S   Switch: Reports current DIP switch settings.

T   Transaction table: Reports how full the transaction table is and how many more
           transactions can be put in it. If site has crashed, tells which transactions have bad
           check sums.

U   Unpaid: Reports all non-zero unpaid totalizers.

V   Version: Reports operating system version.

!   Repeat: Causes specified reports to be repeated every 1 second (longer if report takes
           longer to generate). For user on CRT.

If no option string is given, STATUS just reports on switch, transaction table, and version.
You can halt the repeating STATUS command by pressing ^C.

How to Test a Pump Control Unit's Memory

Use the command TEST PCU or TE PC to test the RAM and ROM of a pump control unit.
The test checks the transaction and program memory. If the pump control unit does not pass
the test, an error message is printed. If it does pass the test, no message is displayed.

```
TEST PCU (TE PC)

R* TEST PCU ↵
PCU address? 1 ↵
```

How to Test a Receipt Printer

You can use the command PRINT RECEIPT or P REC to print any text on a console or island
card reader receipt printer. This is a handy way to test the receipt printer without having to
print a receipt.

```
PRINT RECEIPT (P REC)

R* PRINT RECEIPT ↵
Printer number? 1 ↵
Line to print? GASBOY CFN ↵
R*
```

(This command is discussed in more detail in "Making Your Own Commands" on page 173.) For receipt printers on island card readers, the printer number is the number of the island card reader. Line to print is the text you want printed on the receipt printer.

The SHOW Command

SHow: Designed to display communication between the site and devices. Displays communication for chosen devices when there is a change. The devices chosen must be up in order to be displayed. The syntax for the command is:

    SHow <device> [<device> ...]

A device is a device name followed by a space and either a device number or an asterisk (*) indicating all of that device. The valid devices are: REader, COnsole, GAte, TMs, FPr, SDI, PUmp Pcu, and LOOP.

Additionally, a device may be a single word if it is one of the following:

    ALL - Shows communication for all devices.
    RBroad - Shows reader broadcast messages.
    CBroad - Shows console broadcast messages.
    ROUTer - Shows router activity.

Communication will continue to be displayed until ^C (control key -C) is typed. Communication errors such as failure to respond or CRC errors are indicated. It should be noted that since this display function is being handled at a relatively high level within the software, partial responses from a device will appear to be a non-response.

24 – Enabling and Disabling Devices

Shut Down and Restart a Site

Often it is convenient to shut down the site so that transactions cannot be started when you are changing shifts, changing prices, or printing transaction or sales totals reports. On rare occasions it may be necessary to quickly shut down the site, terminating all transactions in progress.

How To Shut Down a Site

Use the command STOP to shut down the site before changing prices, performing maintenance, or synchronizing totals and transaction numbers for printout. The site will shut down after all transactions in progress are finished. Once you enter STOP, no new transactions will be started until you enter RUN. The terminal will display the normal prompt when the site has shut down.

If transactions have been started from the POS console, you must clear them before STOP will complete. Either complete the transactions, or terminate them by selecting the pump they are on and press the STOP key on the POS console twice. Postpay sales that have had fuel pumped on them must be paid off before STOP will complete.

```
STOP

P* STOP ↵
Verify (y/n)? y ↵
P*
```

STOP with the I option (STOP;I) will block new transactions, but will allow you to execute further commands without waiting for ongoing transactions to complete. The site will wait for ongoing transaction to complete, but you can continue with your command sequence. STOP;I is useful for command files for shift breaks and other functions where you do not want to be hung up for a long time waiting for transactions to complete.

Disable Pumps

As described below, you can stop the site by typing STOP;A at the terminal or by pressing **DISABLE PUMPS** on the Check Point or **ALL STOP** on the Profit Point.

⚠ WARNING

The STOP;A command, DISABLE PUMPS and ALL STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser.

This means that even if you activate these stops, fuel may continue to flow uncontrolled.

You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not only these cashier station "stops."

How To Do an Emergency Stop from the Terminal

You will probably never use this command unless a crisis arises. Use the command STOP;A to terminate all pump transactions in progress and shut down the site.

```
P* STOP;A ↵
Verify (y/n)? y ↵
P*
```

The terminal will display the normal prompt when all transactions are paid off and the site is shut down. Postpay transactions that were started from a console before the emergency stop was executed need to be paid off if fuel has been pumped on them.

How To Do an Emergency Stop from the Console

On the Check Point, press **DISABLE PUMPS**.

On the Profit Point, press **ALL STOP**.

How to Restart a Site

Use the command RUN to restart the site if it was shut down with the command STOP or STOP;A.

```
RUN

P* RUN ↵
Verify (y/n)? y ↵
P*
```

The RUN command will also restart the site from mild crashes, when no tables have been reconstructed.

How To Restart from a Console Emergency Stop

If the site was shut down by pressing the console's DISABLE PUMPS or ALL STOP key, the site can be restarted by simply pressing the DISABLE PUMPS or ALL STOP key again. Use the command RUN;A to restart the site if it was shut down by a console emergency stop and if the site will not restart from the console.

```
P* RUN;A ↵
Verify (y/n)? y ↵
P*
```

How To Restart a Site from a Serious Crash

> ### CAUTION
>
> Do not use the command RUN;I to restart the site after a crash without first consulting with your service representative. If the problem that caused the crash is not fixed before the Site Controller is restarted, damage could result.

Use the command RUN;I to restart the site after a crash. A crash can be caused by a system error, file error, or some other problem. RUN;I will restart the site even after a serious crash. The plain RUN command will restart the site after mild crashes.

```
P* RUN;I ↵
Verify (y/n)? y ↵
P*
```

How To Reboot the Site Controller

Use the command REBOOT to reboot the Site Controller. REBOOT with the A option causes the Site Controller to reboot from disk. That is how you load a new version of the software. It is a good idea to use the command STOP to shut down the site before you reboot.

```
REBOOT

P* STOP ↵
Verify (y/n)? y ↵
P* REBOOT ↵
Verify (y/n)? y ↵
P*
```

There are various types of reboots.

REBOOT

The plain REBOOT command reboots the Site Controller and reloads the configuration from the disk. The file FRAMOS.CFG must be in the root directory of the default drive.

Use this command to load a new configuration.

REBOOT;I

With the I option, REBOOT reboots the Site Controller but does not load a new configuration. Instead, the former configuration is used.

Use this command to reboot the Site Controller when the configuration file is not available.

REBOOT;A

With the A option, REBOOT reboots the Site Controller and loads the operating system off

disk. The files FRAMOS.BIN and FRAMOS.CFG must be in the root directory of the default drive.

Use this command to load a new version of the operating system, or to reload the operating system.

When running REBOOT;A, the Site Controller always attempts to execute AUTOEXEC.CMD immediately after booting. This allows commands to be executed even if there is no cron command file.

Site Devices

Use the disable commands to shut down a site device for maintenance or to restrict access to the device. Use the enable commands to return a device to operation after it has been disabled by command or through a system error. You can use the command PRINT DIAGNOSTICS to find out if a device is enabled or disabled.

The C option can be used with all disable and enable commands to disable or enable more than one device of the same type.

How To Disable and Enable a Pump

Use the command DISABLE PUMP or DI PU to shut down a pump.

```
DISABLE PUMP (DI PU)

P* DISABLE PUMP ↵
Pump number?  4 ↵
P*
```

Use the command ENABLE PUMP or E PU to return a pump to operation. ENABLE PUMP with the I option (ENABLE PUMP;I) clears the no-quantity counters for all pumps and enables all pumps. ENABLE PUMP with the A option (ENABLE PUMP;A) clears ownership and frees pump.

```
ENABLE PUMP (E PU)

P* ENABLE PUMP ↵
Pump number?  4 ↵
P*
```

How To Disable and Enable a Pump Control Unit

Use the command DISABLE PCU or DI PC to shut down a pump control unit (PCU).

```
DISABLE PCU (DI PC)

P* DISABLE PCU ↵
PCU number?  2 ↵
P*
```

Use the command ENABLE PCU or E PC to return a pump control unit to operation. ENABLE PCU with the I option (ENABLE PCU;I) enables all pump control units.

```
ENABLE PCU (E PC)

P* ENABLE PCU ↵
PCU number?  2 ↵
P*
```

How To Disable and Enable a Reader Terminal

Use the command DISABLE READER or DI RE to shut down an island card reader.

```
DISABLE READER (DI RE)

P* DISABLE READER ↵
Reader number?  1 ↵
P*
```

Use the command ENABLE READER or E RE to return a island card reader to operation. ENABLE READER with the I option (ENABLE READER;I) and enables all readers.

```
ENABLE READER (E RE)

P* ENABLE READER ↵
Reader number?  1 ↵
P*
```

How To Disable and Enable a Console

Use the command DISABLE CONSOLE or DI CO to disable a console.

```
DISABLE CONSOLE (DI CO)

P* DISABLE CONSOLE ↵
Console number?  1 ↵
P*
```

Use the command ENABLE CONSOLE or E CO to return a console to operation. ENABLE CONSOLE with the I option (ENABLE CONSOLE;I) and enables all consoles.

```
ENABLE CONSOLE (E CO)

P* ENABLE CONSOLE ↵
Console number?  1 ↵
P*
```

How To Disable and Enable a Tank Monitor System

Use the command DISABLE TMS or DI TMS to disable a tank monitor system (tank gauge or TMS).

```
DISABLE TMS (DI TMS)

P* DISABLE TMS ↵
TMS number?  1 ↵
P*
```

Use the command ENABLE TMS or E TMS to return a tank monitor system to operation. ENABLE TMS with the I option (ENABLE TMS;I) and enables all tank monitoring systems.

```
ENABLE TMS (E TMS)

P* ENABLE TMS ↵
TMS number?  1 ↵
P*
```

How To Disable and Enable a Gate Reader

Use the command DISABLE GATE or DI GA to disable a gate reader.

```
DISABLE GATE (DI GA)

P* DISABLE GATE ↵
Gate controller #?  1 ↵
P*
```

Use the command ENABLE GATE or E GA to return a gate reader to operation. ENABLE GATE with the I option (ENABLE GATE;I) and enables all gates.

```
ENABLE GATE (E GA)

P* ENABLE GATE ↵
Gate controller #?  1 ↵
P*
```

How To Disable and Enable a Fuel Point Reader

Use the command DISABLE FPR or DI FPR to disable a Fuel Point reader.

```
DISABLE FPR (DI FPR)

P* DISABLE FPR ↵
FPR number?  1 ↵
P*
```

Use the command ENABLE FPR or E FPR to return a fuel point reader to operation. ENABLE FPR with the I option (ENABLE FPR;I) enables all Fuel Point readers.

```
ENABLE FPR (E FPR)

P* ENABLE FPR ↵
FPR number?  1 ↵
P*
```

How To Disable and Enable SDIs

Use the command DISABLE SDI or DI SDI to disable an SDI.

```
DISABLE SDI (DI SDI)

P* DISABLE SDI ↵
SDI #?  1 ↵
P*
```

Use the command ENABLE SDI or E SDI to return an SDI to operation. ENABLE SDI with the I option (ENABLE SDI;I) enables all SDIs.

```
ENABLE SDI (E SDI)

P* ENABLE SDI ↵
SDI #?  1 ↵
P*
```

To force a download of an SDI, use the command DOWNLOAD SDI. You must include the SDI number on the same line as the command, you will not be prompted for it. You may specify more than one SDI on the command line without a "C" option. Log messages will report SDIs going up/down and being enabled/disabled.

```
DOWNLOAD SDI (DO SDI)

P* DOWNLOAD SDI 1 ↵

P*
```

Operating Pumps Manually

How To Activate a Pump from the Command Window

You can start and stop a pump from the command window. This is useful if you do not have a console and your island card reader is out of order, or you want to pump fuel without using a card.

To activate a pump from the command window for one transaction, use the command ACTIVATE PUMP or AC PU.

```
ACTIVATE PUMP (AC PU)

P*  ACTIVATE PUMP ↵
Pump number?  2 ↵
Pump is ready.
P*
```

The transaction is recorded as a cash transaction. If the pump you select is available, the terminal will print PUMP IS READY. ACTIVATE PUMP uses the fallback price or the price level selected by the pump's cash/credit buttons, if available.

You may use the C option with the command ACTIVATE PUMP.

If the P1 option is used with ACTIVATE PUMP, the P1 data will be used as the account number, and the account type will be club. No verification or checks will be performed on the

account data. You may include a D as a field separator, and follow it by discretionary data, such as the expiration date.

How To Deactivate a Pump from the Command Window

Use the command DEACTIVATE PUMP or DE PU to turn off a pump that is in use. You may use the C option with the command DEACTIVATE PUMP.

```
DEACTIVATE PUMP (DE PU)

P*  DEACTIVATE PUMP ↵
Pump number?  2 ↵
P*
```

How To Put a Pump into Full-service Mode

Use the command FULLSERV to place all of the pumps into full-service mode at once. To remove them from full-service, use the command SELFSERV.

```
P*  FULLSERV ↵
1-2-3-4-5-6-7-8-9-10-11-11-12-13-14-15-16
WARNING: All pumps now in
full-service mode. ↵
P*
```

Another way is to use the command ACTIVATE PUMP;A. When a pump is in full-service mode, the Site Controller activates it when the hose is taken off its hook.

```
P* ACTIVATE PUMP;A 1 ↵
P*
```

If the island card reader, FPR, and console are out of service, you can put the pumps into full-serve mode so they may still be accessed.

Transactions generated in full-serve mode have Fulsrv instead of an authorization code in the transaction printout. They use the fallback price (unless they are paid at the console) or the price selected by the cash/credit buttons on the pump, if available. (The printouts for the PRINT DIAGNOSTICS and PRINT PUMP commands show full serve for pumps that are in full-serve mode.)

Note: For full-serve mode to work, pumps must be wired for a console installation, even if there is no console.

```
P* PRINT PUMP ↵
P# T# Pr Pc          Price Totals          $Total  Rate        Limit Slow
 1 1  1  1           0.799 178.770         181.10  100/$       $30   0.500 Full srv
   2  2  2           0.859 360.716         322.74
   3  3  3           0.919 740.360         741.94
 2 1  1  1           0.799  84.110          66.44  100/$       $30   0.500
   3  2  3           0.919   2.140           3.13
 . . . . . . . . . . . . . . . . . . . . . .
P*
```

Use DEACTIVATE PUMP;A to take a pump out of full-serve mode.

```
P* DEACTIVATE PUMP;A ↵
Pump number? 1 ↵
P*
```

How To Bypass the Pump Control Unit

If the pump control unit is not working, you can bypass it and operate the pumps manually. To do this, turn the pump relay control switch to MAN. Then use the command ACTIVATE PUMP;A to put the affected pumps into full-service mode. This will allow the transaction information to be recorded.

Note: The PCU power must be on for this to work. ACTIVATE PUMP;A may cause transactions not to be recorded if the PCU hardware is damaged.
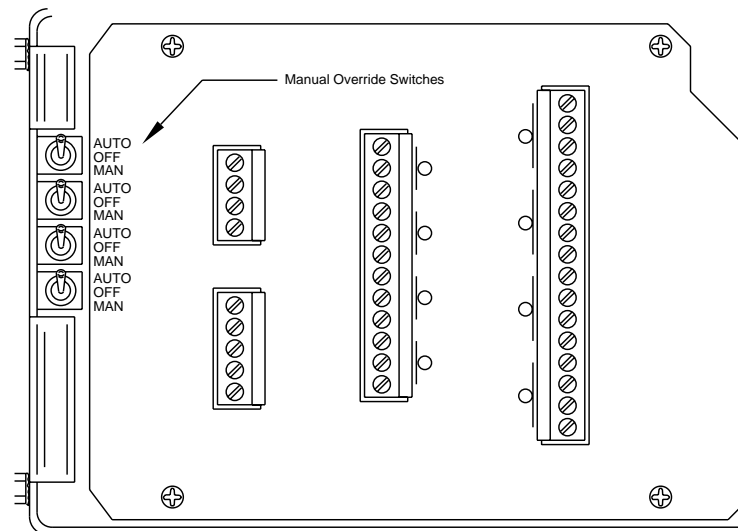
If this manual-override procedure does not work, chances are the power supply or the relays in the PCU are bad, and your only choice at this point is to replace them.

25 – Invoice Printing

Invoice printing is new feature available from Gasboy. While only one invoice style is currently supported, others can be made available. Contact your Gasboy Representative.

Requirements and Restrictions

Invoice printing has several requirements and restrictions:
- You must be using a Profit Point as your POS, running software version 2.2.
- Invoices can only be printed on a dedicated impact printer connected to the parallel printer port on the Profit Point.
- The Profit Point must have a dedicated key for the invoice printer. See the **Profit Point Reference Manual version 2.2** for setting up the dedicated key. The default key is "N".
- You must configure the CONSOLE.BIN program, submenu 3 to use invoice printers.
- Invoices can only be printed for the current transaction.
- Multiple sales are not supported at this time.
- Only CENTRAK form 881 is currently available.

Invoice Setup

Header and footer lines of text are set up for the invoice printer the same way as the receipt printer. Use these line number ranges:

1 - 9	Receipt header
11 - 19	Receipt footer
31 - 39	Invoice header
41 - 49	Invoice footer

The number of lines and characters is limited by the space available on the invoice form. Enter the invoice information by using the command LOad Heading. Refer to "Receipts, Messages, and Date" on page 29 for more information. Note: You may need to increase the Receipt Heading Table in TABLE config. See MDE-4314 CFN III Configuration Manual.

The Profit Point must be running software version 2.2b or above and must have a dedicated key, the default is "N", and set up with the Profit Point menu options.

Briefly:

1 Select option 4, Keyboard Configuration.

2 From the Keyboard configuration menu, select option 4 Function.

3 From the list, select option 14 - Print Form.

Refer to the *Profit Point Reference Manual*, version 2.2 for more information.

Printing an Invoice

Once your equipment has been set up by your Gasboy Representative and your invoice header and footer information has been entered, test your form feed of the printer and your system setup by running some sample invoices.

Enter your sales as regular sales of fuel or merchandise. Once the sale is completed, press the "N" key and your invoice will print.

The current form allows for 13 sale items on a page. If there are more items, another page will automatically feed with the word "Continued..." printing on the bottom replacing the footer lines. All pages will contain the same header and general layout with the final page containing the subtotal, discount, tax, total, and footer lines.

Sample Invoice

The following invoice is an sample for reference.

Duplicates

There is only one original document for a transaction and may be either a receipt or an invoice. Whichever is printed first is the original. Any additional printings are marked as "Duplicate."

If automatic receipt printing is enabled, any invoice will be a duplicate.

26 – SC III Optional Packages

Almost all of the Site Controller's functions are included in its standard package, but there are some features that are optional.

Several options are grouped together in the Fleet package:
- The Lookup program, which is the subject of its own chapter in this manual.
- The MPG system, which is discussed in the Fuel allocation and miles-per-gallon chapter in this manual.
- Supervisor cards — are coded to allow (and have the Site Controller accept) the manual entry of any valid card number, employee number, and vehicle number. This allows a supervisor to enter information for an employee with a lost or damaged card. For an ICR only.
- Fuel-drop cards — are swiped through an island card reader by a tank-truck driver who can then enter the number of the tank that received fuel and the number of gallons/liters received.
- Dipstick cards — are swiped at a reader by a site employee who has just used a tank dipstick and who then enters the tank number and gallons/liters in the tank, as seen on the dipstick.
- Fueler ID cards — are swiped at an island card reader by a site employee who is then responsible for all transactions at that island or on a particular pump.
- Chain-pumping feature — turns on all "pumps" in a cluster (including such "pumps" as a grease gun or air hose) when a master pump in the cluster is turned on. This feature is useful at sites that have fully equipped repair bays.
- Optical cards — can be read in an optical reader.

Other options are available individually, not as part of a package:
- Fuel Point system — which automatically reads vehicle identification, fuel authorization, and odometer information directly from a module installed on the vehicle.
- Tank gauge interface — supports Tank gauges that have the Veeder-Root protocol.
- Bank-card network router — allows the use of one of the routers described in the Credit and Debit Card Network manuals.
- Special card types — allow the use of cards that are authorized locally and that do not follow the standard Gasboy card format.
- Tokheim pump driver — allows the use of Tokheim pumps.
- Extra pump driver — allows the use of Wayne, Unidynamics, or LTS (propane) pumps.
- DPT string selection — allows the use of special CITGO network messages.
- Gate reader interface — allows the site to have a gate reader.
- Currency.
- SDI — allows the site to use various devices. SDI is the interface.
- Key Option — allows operators to use smart keys at an Islander II.

27 – Appendix A: SC III Ports and Switches

Front Panel Components

- Power Switch - controls the power to the SC III
- PC reset Switch - resets the PC but leaves the SC Comm operations running
- PC Power Indicator - indicates that power is being supplied to the controller
- Hard Disk Status Indicator - lights when the disk is being accessed

Serial/Parallel Ports

The RS232 ports on the SC can be used for any function that needs a RS232 port. The ports on the SC III are more limited. Com1-4 can be used for login, log printers, and command output may be directed to them. LPT1-2 can only be used as log printers or command output.

The SC III has one more RS422/485 channel available than the SCII. This has been assigned to be another island loop. Broadcast messages will be sent to both of these channels. The POS loop is the only loop that Profit Points can be connected to.

The following is a list of ports and their assignments:

Name	Channel	Location	Function
CON	0	PC CRT/Keyboard	Local port login
SC1	1	COMM CPU top DIN	RS232, use cable C05984 for terminal or C05995 for modem
SC2	2	COMM CPU 26 pin ribbon	RS232 all cont. lines
SC3	3	COMM MEM DB-9	Tokheim pumps
SC4	4	COMM MEM left DIN	RS232
SC5	5	COMM MEM middle DIN	RS232, use cable C05984 for terminal or C05995 for modem
SC6	6	COMM MEM right DIN	RS232, use cable C05984 for terminal or C05995 for modem
COM1	7	PC	RS232
COM2	8	PC	RS232
COM3	9	PC	RS232
COM4	10	PC	RS232
LPT1	11	PC	Parallel output
LPT2	12	PC	Parallel output
LOOP1	N/A	COMM CPU left handset	Island loop
LOOP2	N/A	COMM CPU right handset	Island loop

Name	Channel	Location	Function
LOOP3	N/A	COMM CPU top handset	POS loop

DIP Switch Settings

Memory Board DIP Switch SC-Memory I/O - S1

On the SC MEMORY I/O board top left DIP switch:

Position & Definition		Setting
1	Boot to monitor after reset Boot to OS after reset	open closed
2	Debug mode Normal	open closed
3	Do not talk to PC while in monitor Monitor I/O goes to PC also	open closed
4	Monitor I/O goes to SC port 1 No monitor I/O to SC port 1	open closed

Memory Board DIP Switch SC-Memory I/O - S2

On the SC MEMORY I/O board top right DIP switch:

Position & Definition		Setting
1	Battery 1	open=disabled closed=enabled
2	Battery 2 External	open=disabled closed=enabled
3	N/A	unused
4	N/A	unused

PC IRQ Switch, SC-COMM CPU - S1

On the SC-COMM CPU board on the card edge side, Switches 1-4, the PC address DIP sets where in the PC address space the Dual RAM will occur. The SC-Comm board currently assumes D0000.

Address	Switch			
	1	2	3	4
C0000	cl	cl	cl	cl
C3000	cl	cl	cl	op
C6000	cl	cl	op	cl
C7000	cl	cl	op	op
CC000	cl	op	cl	cl
CF000	cl	op	cl	op
D0000*	cl	op	op	cl
D3000	cl	op	op	op
D6000	op	cl	cl	cl
D9000	op	cl	cl	op
DC000	op	cl	op	cl
DF000	op	cl	op	op
E0000	op	op	cl	cl
E3000	op	op	cl	op
E6000	op	op	op	cl
E9000	op	op	op	op

Switches 5-8 enable the IRQ. Choose one of the four possible interrupt priorities. Only one may be selected and no other device on the PC can use that interrupt. SC3.EXE currently assumes level 10. Other choices are 15, 12, and 11.

5	Closed IRQ - 15	Default - open
6	Closed IRQ - 12	Default - open
7	Closed IRQ - 11	Default - open
8	Closed IRQ - 10	Default - closed

SC III Comm Board DIP Switch CPU - S2

SC III Comm Board DIP Switch CPU - S2, position 4, default signon.

Jumper Settings

SC-Comm CPU Board settings

Jumper	Description	Setting
K3	AC power fail sense	2-3 to enable 1-2 to disable *
K4	AC watch dog timer	1-2 to enable *
K5	SC-Comm CPU (testing only)	1-2 to reset
K6	RS-485 loop 1,	2-3 for 4 wire * 1-2 for 2 wire
K7	RS-485 loop 2,	2-3 for 4 wire 1-2 for 2 wire *
K8	Rx Clock from synchronous modem (DB-25-15)	1-2 to connect
K9	ETC output to synchronous modem (DB-25-24)	1-2 to connect
K10	Tx clock input from synchronous mocem (DB-25-17)	1-2 to connect
K11	EPROM type	2-3 for 27128 or 27256
K12	EPROM type	2-3 for 27128 or 27256

* = default

SC-Comm Memory I/O Board Settings

Jumper	Description	Setting
K1	Date/Time Clock Speed	1-2 for 4 wait state* 2-3 for 1 wait state
K2	Enable A19 to RAM	2-3 for 128Kx8* 1-2 for 512Kx8
K3	RAM size	2-3 for 128Kx8* 1-2 for 512Kx8
K4	External Battery	no connector = disabled*
K5	Tokheim Reset Output Port 2 Do not Install, not supported	1-2 for reset

* = default

28 – Appendix B: Modem Settings and Cables

Hayes® 1200 Modem Switch Settings

The following table gives the modem DIP switch settings for a Hayes 1200-baud modem connected to a line that is used for polling by a remote host. Use these settings on the modem itself—not on the Site Controller DIP switches—when you will be dialing the site from a remote computer or terminal to collect data or execute commands.

Use these settings when SYS_PAR is set to direct or dumb modem:

Modem Switch	Switch Setting	Description
1	up	DTR signal recognized
2		NA
3	up	Result codes are not sent
4	down	Commands are not echoed
5	up	Auto answer enabled
6	up	Carrier detect present when connection complete
7	up	Set for single line
8	up	AT command set not enabled
9*	up	Compatible with Bell 103/212A modems
10*	up	DTR hangs up modem

* Switches 9 and 10 on newer model DC Hayes modems.

The following table gives the modem DIP switch settings for a Hayes 1200-baud modem connected to a line that is used for dial-out transaction authorizations. Use these settings on the modem if your site dials out to get authorizations for transactions.

Use these settings when SYS_PAR is set to Hayes 1200:

Modem Switch	Switch Setting	Description
1	up	DTR signal recognized
2	down	Result codes are digits
3	down	Result codes are sent
4	down	Characters are not echoed
5	up	Auto answer enabled
6	up	Carrier detect present when connection complete
7	up	Set for single line

Modem Switch	Switch Setting	Description
8	down	AT command set enabled
9*	up	Compatible with Bell 103/212A modems
10*	up	DTR hangs up modem

* Switches 9 and 10 on newer model DC Hayes modems.

Hayes Modem DIN Cabling

Use cable C05995 for connecting to the SC-modem or C05994 for SC-terminal.

If connecting to the COM port of the PC, the RS-232 cable connecting the Site Controller to the modem is a straight cable as shown below. A straight cable with male DB-25 to male DB-25 is part number C04549.
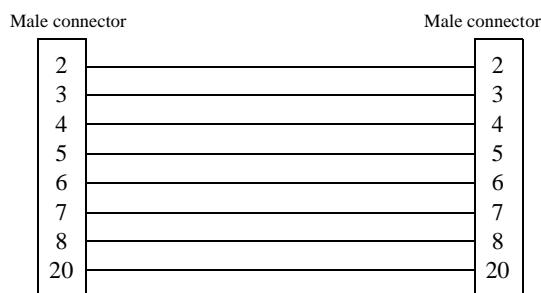
Null Modem Cross Cable

Sometimes you might want to connect a device other than a modem to the SC III's modem port. You first must find out whether that device is configured as a DTE (Data Terminal Equipment) or a DCE (Data Communications Equipment).

A DCE is a device that looks like a modem and the straight cable shown above should be used with it. If the device is a DTE—that is, it looks like a terminal—then the cable below should work. A null modem cross cable with male DB-25 to male DB-25 is part number C05039. A null modem cross cable with male DB-25 to female DB-9 is part number C05928.
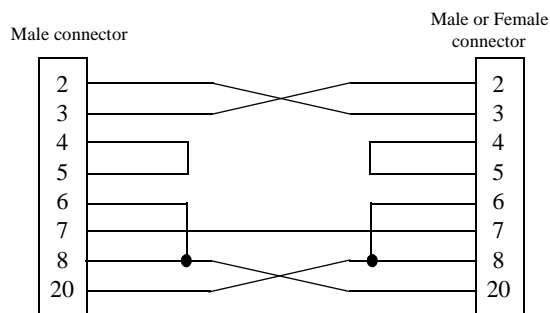
29 – Appendix C: Printed Receipt Regulations

The Federal Regulations on Electronic Funds Transfer Regulation E set standards for the documentation of electronic transfers, including the information that must appear on printed receipts.

The applicable sections of Regulation E are printed below.

Note: While these are the regulations that were in effect at the time this manual was written, Gasboy obviously cannot guarantee that these regulations have not since been amended or rewritten. Check with your company's lawyer.

EFT Regulation E

Section 205.9(a)—Documentation of Transfers

(a) Receipts at electronic terminals. At the time an electronic fund transfer is initiated at an electronic terminal by a consumer, the financial institution shall make available [1] to the consumer a written receipt of the transfer(s) that clearly sets forth the following information as applicable:

(1) The amount of transfer. A charge for the transfer may be included in this amount if the terminal is owned or operated by a person other than a financial institution holding the consumer's account, provided the amount of the charge is disclosed on the receipt and on a sign posted on or at the terminal.

(2) The calendar date the consumer initiated the transfer.

(3) The type of transfer and the type of the consumer's account(s)[2] to or from which the funds are transferred, such as "withdrawal from checking," "transfer from savings to checking," or "payment from savings." These descriptions may be used for transfers to or from accounts that are similar in function to checking accounts (such as share draft or negotiable order of withdrawal accounts) or to savings accounts (such as share accounts). Codes may be used only if they are explained elsewhere on the receipt.

(4) A number or code that uniquely identifies the consumer initiating the transfer, the consumer's account(s) or the access device used to initiate that transfer.

(5) The location (in a form prescribed by paragraph (b)(1)(iv) of this section) of

---

1. *A financial institution may arrange for a third party, such as a merchant, to make the receipt available.*
2. *If more than one account of the same type may be accessed by a single access device, the accounts must be uniquely identified unless the terminal is incapable of such identification and was purchased or ordered by the financial institution prior to February 6, 1980. In a point-of-sale transfer, the type of account need not be identified if the access device used may access only one account at point of sale*

---

the terminal at which the transfer was initiated or an identification (such as a code or terminal number).

(6) The name of any third party to or from whom funds are transferred; a code may be used only if it is explained elsewhere on the receipt. This requirement does not apply if the name is provided by the consumer in a form that the electronic terminal cannot duplicate on the receipt.

Section 205.9(b)(1)(iv)

(A) The address, including number and street (the number may be omitted if the street alone uniquely identifies the terminal location) or intersection, city, and state or foreign country;[1]

(B) A generally accepted name for a specific location (such as a branch of the financial institution, a shopping center, or an airport), city, and state[2] or foreign country, or

(C) The name of the entity at whose place of business the terminal is located or which owns or operates the terminal (such as the financial institution[3] or the seller of goods or services), city, and state[4] or foreign country.

1.The city and state may be omitted if all the terminals owned or operated by the financial institution providing the statement (or by the system in which it participates) are located in the same city. The state may be omitted if all the terminals owned or operated by the financial institution providing the statement (or by the system in which it participates) are located in that state. The state may also be omitted for transfers occurring at terminals within 50 miles of the financial institution's main office.

2.   See footnote 3.

3.If the financial institution providing the statement owns or operates terminals at more than one location, it shall describe the location of its electronic terminals by use of paragraphs (b)(1)(iv)(A) or (B) of this section.

4.   See footnote 3.

Gasboy Receipt

The core of the standard Gasboy receipt complies with the sections of Federal Regulations on Electronic Funds Transfer Regulation E that apply to the contents of the receipt of an automated fueling transaction. To comply with the spirit of the regulation, we recommend that the heading or footing of the receipt include the company name, street address, city, and state of the fueling location.

```
          AUTOMATED FUELING
             TRANSACTION

SMITTY'S STATION
10 MAIN STREET
SMITH, WA 90000

       6/10/95 2:56 PM
Site    Tran  Seq   Auth
644331  9040  3021  026956
From: CLUB
Card # 123123123
Pump #1 Regular
Gallons . . . . . . .10.360
Price/Gal . . . . . .$1.159
Fuel sale . . . . . $12.01
Soda    1@0.55       $0.55
Snack   1@0.95       $0.95
Subtotal . . . . . . $13.51
Sale tx   $.95 =     $0.05
Total . . . . . . . .$13.56


          THANK YOU
      PLEASE COME AGAIN
```

Custom receipt formats must comply with these regulations.

The example shows the core of the standard Gasboy receipt with a possible heading and footing format.

Note that the tax name is limited to only 7 characters.

30 – Appendix D: Status and Error Messages

This chapter is divided into three sections:
- Messages on the log printer or in diagnostics.
- Messages in the transaction printout.
- Messages in command mode.

Messages within each section are listed alphabetically. If the first word of the message may vary, it is listed at the beginning of the section.

Messages on the Log Printer

The following messages may appear on the log printer or terminal when it is in log printer mode, or may be printed in response to the command PRINT DIAGNOSTICS.

Name Table Reconstructed

Table name has been reconstructed because of an error. Some or all of the data in the specified table may be missing.

The SC III will reboot itself to crashed state.

Call your service representative and report the table name.

You may use the appropriate print command to inspect the data. However, if the Global table was reconstructed, the transaction data may still be there even though it does not print out.

Do not restart the SC III until you have talked to a service technician. Then use the command RUN;I to restart the SC III.

Switch the pumps to manual mode until the problem is fixed. Be sure to record pump totalizer readings before switching the pumps to manual, than again after the problem is solved and before switching back to automatic so fuel inventory can be balanced. Follow your normal procedure for manually writing proprietary-card transactions.

> *linename* DSR not present
> *linename* DSR regained
> *linename* CTS not present
> *linename* CTS regained

These messages report changes in the status of devices connected to the SC III via RS-232 ports. DSR stands for data set ready, and CTS stands for clear to send.

linename describes the function of the port on which the status change occurred. Possible functions are: CFN host port, Bank host port.

These messages indicate interruptions in communications, but are not in themselves serious.

In particular, a *DSR regained* message when a Hayes modem establishes a connection, followed by a *DSR not present* message when the modem hangs up, does not indicate a problem.

For local devices like Tokheim or special pump controllers, use PRINT DIAGNOSTICS to see if the corresponding device is down or is reporting a large number of errors.

[Pump #] Card #XXXXXXXXXXXX denial_reason WED 11/29/97 12:34 PM

The pump number does not appear if the pump has not yet been selected.

XXXXXXXXXXXX is the number read from card or VM or entered.

A customer has been denied access to the system.

Possible denial reasons are:
    Invalid PIN, abort
    Invalid PIN, retry
    Card is not valid
    Card has expired
    Down, try later
    Cannot verify card
    Exceeded allocation
    Exceeded daily limit
    Invalid fuel
    Invalid pump
    Pump disabled

Another possibility is that the customer was granted access, but then one of these conditions arose:
    Timed out
    Mem lost
    Power fail

If your site is connected to a remote host—either PC or a bank network—for card authorization, the remote host may provide a denial message.

For *Invalid PIN, Card is not valid*, and *Card has expired* errors on proprietary cards, refer the customer to your company's business office. (Be sure to follow company policy on what to tell customers about Card is not valid denials.)

No further action is required, unless all cards suddenly give the same denial error or a particular pump gives Down, try later repeatedly.

Bank Verification Came Up

Communication with the bank network has been re-established.

No action is necessary.

Bank verification went down

Communication with the bank network has been lost.

Check modem cable, connections, and switch settings, if any. Call network number from another computer to make sure host is available and that passwords work.

Battery FAILED

One of the two SC III back-up batteries has failed.

Do not turn off power to the SC III; data may be lost.

Call your service representative and report the problem.

Battery OK

A SC III back-up battery that had failed is now functioning properly.

Intermittent failure of a battery is a serious problem. Call your service representative.

Card Reader Terminal *#X* Came Up

The indicated island card reader is functioning normally.

No action is required.

Card Reader Terminal *#X* Disabled

The indicated island card reader has been disabled by the command DISABLE READER.

No action is required. Use the command ENABLE READER to return the card reader to operation when appropriate.

Card Reader Terminal #*X* Paper Low

The indicated island card reader receipt printer is low on paper.

Replace paper in the receipt printer.

Card Reader Terminal #*X* Out of Paper

The indicated island card reader receipt printer is out of paper.

Replace paper in the receipt printer.

Card Reader Terminal #*X* Paper Refilled

Paper has been replaced in the indicated island card reader receipt printer.

No action is required.

Card Reader Terminal #*X* Printer Down

The indicated island card reader receipt printer is not functioning.

If you cannot find and correct the problem, call your service representative.

If the island card reader in question is not equipped with a receipt printer, then ignore this message.

Card Reader Terminal #*X* Printer Jammed

The indicated island card reader receipt printer is not functioning.

If you cannot find and correct the problem, call your service representative.

Card Reader Terminal #*X* Printer Unjammed

The indicated island card reader receipt printer is now functioning.

Card Reader Terminal #*X* Printer Up

The indicated island card reader receipt printer is now functioning.

Card Reader Terminal #*X* Reader Jammed

A unit in the indicated island card reader is not functioning.

If you cannot find and correct the problem, call your service representative.

Card Reader Terminal #X Reader Unjammed

The indicated island card reader is functioning properly.

No action is required.

Card Reader Terminal #*X* Went Down

The indicated island card reader is not functioning.

Try to bring the unit up with the command ENABLE READER.

If that does not work, execute the command PRINT DIAGNOSTICS and report the results to your service representative.

CFN Verification Came Up

Communication to a remote SC III or PC used for card verification has been re-established.

No action is necessary.

CFN Verification Did Not Respond

The SC III did not get a response when it contacted the host for remote verification of a card transaction.

If this error occurs repeatedly, contact the system administrator.

CFN Verification Went Down

Remote communication has been lost.

Make sure the modem is plugged in and the baud rate is set correctly. If everything looks okay at your site, report the problem to the network administrator.

Check PT/Profit PT #*X* Came Up

The indicated console has been returned to operation.

No action is required.

Check PT/Profit Pt #*X* Disabled

The indicated console has been disabled by the command DISABLE CONSOLE.

No action is required. Return the console to operation with the command ENABLE CONSOLE if appropriate.

Check PT/Profit Pt #*X* Went Down

The indicated console is not functioning.

Try to return the console to operation with the command ENABLE CONSOLE.

If that does not work, check to make sure the console power cord is plugged in and that the RS-422/485 data cable (small 4-wire modular connector) is connected.

If the console still does not work, execute the command PRINT DIAGNOSTICS 4 and report the results to your service representative.

Data Corrupted in Table

Data in *table* table has become corrupted. The SC III will reconstruct the table and reboot itself in the crashed state.

See "Name Table Reconstructed" on page 1.

CARD: XXXXXXXXX DES Not Ready

Data encryption standard (DES) encryption unit in a card reader was not ready to process a bank card, probably because one of the two keys was not loaded.

Contact your bank network representative.

Diagnostics Table Too Small

Not enough available records in the diagnostic table.

The size of the diagnostic table is set in the SC III configuration.

If this message occurs at startup, you will need to configure for a larger diagnostic table size.

Disk Full

The RAM disk is full.

Delete unnecessary files from the disk.

EMERGENCY STOP

An emergency stop has been done from the console, or a STOP; a command was issued.

No action is required. Press the EMERGENCY STOP key on the console again when all is secure to end the emergency stop, or issue a RUN;A command from the terminal keyboard.

End EMERGENCY STOP

Emergency stop done from the console is no longer in effect.

No action is required.

Fuel Point Reader # on Loop # Went Down

A Fuel Point Reader has gone down.

Check reader.

Fuel Point Reader # Came Up

A Fuel Point Reader has come back online.

No action is requried.

Gate # on Loop # Went Down

A Gate has gone down.

Check gate.

Gate # Came Up

A Gate has come back online.

No action is requried.

Island EMERGENCY STOP

The EMERGENCY STOP button on the island has been pressed, or a communications problem has developed on the RS-422 loop to the island.

To end an island emergency stop, enter a RUN;A command from the terminal keyboard, or press the EMERGENCY STOP key on the console twice.

If the island button was not pressed (or does not exist), contact your service representative.

Island Reader Only

Displays when you try to use Fueler ID, Supervisor cards, Fuel Drop cards, Dipstick cards and Fueler cards at the Console. These can only be used at the Island Reader.

Loop Table Overflow

There can be 64 loop devices.

If there are more than 64 loop devices, this error occurs.

Loop devices are consoles, island card readers, pump control units, electronic pumps, MPDs, and so on.

If you do not have more than 64 loop devices and experience this error, contact your service representative.

Master Key Loaded

DES decryption master key is present.

No action is necessary.

Memory Available

Memory is available for new transaction records.

Memory Full

There is no room in memory for additional transactions.

The SC III will not accept new transactions.

If your site is connected to a host site, contact your system administrator.

If your site is not connected to a host site or polled by a remote computer, then print transactions in memory using the command PRINT TRANSACTIONS, or transfer them to your billing computer, according to your usual procedure.

After the transactions are securely recorded for billing or accounting purposes, use the command RESET TRANSACTION to make room in memory for additional transactions.

No Tokheim Handler

Logged after the boot message if the system has at least one Tokheim pump defined in the pump configuration, but no Tokheim handler. Tokheim handler is always assigned to port 3.

No Wayne Handler

Logged after the boot message if the system has at least one Wayne pump defined in the pump configuration, but no Wayne handler is assigned to any serial port in the serial-port-configuration section of the SYS_PAR configuration program (see MDE-4314 CFN III Configuration Manual).

Assign an available serial port to the special pump handler using SYS_PAR.

NT PC-SCIII Interface V#.# Started

Boot message that the SC#.EXE interface program has started.

PC Not Responding

The site is running but not getting a response from the PC through the SC3.EXE program. Check the PC. May see this on startup. Site should still open.

PC Responding

Site is communicating with the PC.

No action is necessary.

Product #*XX* Name Below Reorder Level

The product inventory of the indicated product is below the reorder level configured with the LOAD INVENTORY command.

Follow your company's procedures for reordering products.

Pump #*X* Disabled

The indicated pump has been disabled by the command DISABLE PUMP.

No action is required. Return the pump to operation with the command ENABLE PUMP when appropriate.

Pump #*X* Disabled, No Quantity

The indicated pump has been disabled because the SC III has received too many zero-quantity transactions from that pump.

A zero-quantity transaction is one in which the pump is activated but no fuel is pumped. The SC III will automatically disable any pump that exceeds a certain number (set in SYS_PAR) of zero-quantity transactions. This is a precaution against pump pulser (flow sensor) or pulser cable failure.

Check the pump no-quantity transaction (NQN) count in the diagnostics printout, using the command PRINT DIAGNOSTICS 8. If there are several NQNs, try to determine the cause or consult your service representative.

If a pulser unit or attached cables have failed, fuel can flow until the pump times out, but no gallons or dollars will be recorded.

To re-enable a pump that has been disabled because of too many zero-quantity transactions, after first identifying and correcting the cause, type the command ENABLE PUMP.

To reset the NQN counters for all pumps back to zero, give the command ENABLE PUMP;I. Wait until no fuel transactions are in progress.

Pump #*X* Disabled, No Price

The SC III has disabled the pump because no price or price code has been assigned for that pump.

Use PRINT PUMP to determine if a price code has been assigned to the pump. If one has, then use PRINT PRICE to see if a price has been assigned to that code for level 0 and for the level for each method of payment that is accepted. If a price is missing for that code or for some needed level, use LOAD PRICE to load it.

If no price code has been assigned to the hose, then use LOAD FUEL to assign a price code to the pump. (Some sites may choose to assign a product that has a price to the pump instead of a price code, if multi-level prices for cash, credit, etc., are not needed.)

Pump #*X* Enabled

The indicated pump is operating normally.

No action is required.

Pump Control Unit #*X* Came Up

The indicated pump control unit is now functioning properly.

No action is required.

Pump Control Unit #*X* Disabled

The indicated pump control unit has been disabled by the command DISABLE PCU.

No action is required. Use the command ENABLE PCU to return the pump control unit to operation, when appropriate.

Pump Control Unit *#X* Down, Bad Memory

The indicated pump control unit is not functioning because of a memory failure.

Call your service representative.

Pump Control Unit *#X* Found Unassigned Transaction

The SC III received unexpected information from the indicated pump control unit. This is recorded as an unpaid transaction.

You will need to determine whether the information recorded as an unassigned transaction really is a CFN sale that is not recorded anywhere else, or a duplicate of an already recorded sale, or a transaction that was accomplished and recorded manually.

First, locate the unassigned transaction(s) in the log printout. Watch for Unassigned in the ERROR column. Unassigned transactions look like proprietary-card transactions with no card or account number, but in fact may have used any method of payment.

Compare any unassigned transactions found to adjacent normal transactions with respect to time and quantity. Try to determine whether the unassigned transactions are duplicates of other normal transactions, or really represent new transactions.

This is a potentially serious error. Call your service representative.

Pump Control Unit *#X* Went Down

The indicated pump control unit is not functioning.

Try to return the unit to operation with the command ENABLE PCU.

If that does not work, execute the command PRINT DIAGNOSTICS and report the results to your service representative.

Remote Command: *command*

Applies only if the logging of remote commands is selected in configuration (system parameters).

The *command* command was executed by a remote user.

command can be any command listed in HELP.

Options and data typed by the remote user are not shown.

Remote Verification Did Not Respond

An attempt to verify a card on the remote host was unsuccessful.

Check modem, cable, and switch settings. Contact your service representative or communications network representative.

SC III Vx (*HHMM/MMDDYY*) Router:r_*name*, Handler:h_*name* Day *MM/DD/YY HH:MM AM/PM*

Boot message. Gives the version of the site and the date the version was created, what bank card router and handler are installed, and the current date and time.

Tank #*X* Below Reorder Level

The indicated tank is below the reorder level entered with LOAD TANK.

Tank #*X* Fuel Leak

Applies only to systems connected to tank level monitors.

The tank level monitor has detected a decrease in level while in tank testing mode that could indicate a leak.

Consult tank level monitor documentation for additional steps to take to confirm or refute this measurement.

Leaking underground tanks can create serious environmental and health hazards.

Tank #*X* Probe Error

Applies only to systems connected to tank level monitors.

The tank level monitor reports trouble with probe.

Consult tank level monitor documentation.

Tank #*X* Excess Water

The tank level monitor reports excess water in the indicated tank.

Use the tank stick and water-detecting paste to confirm measurement. If no water is found, consult the manual of the tank level monitor for possible causes of erroneous water readings.

Tank #*X* *YYY* Gal Delivery

The tank level monitor reports delivery of *YYY* gallons of product.

No action is necessary unless the delivery does not match scheduled deliveries.

Warm Boot

Appears on log printout when the SC III operating system has been reset.

Usually, no action is necessary. If the site was stopped before rebooting, you will need to type a RUN command.

Messages in the Transaction Printout

The following messages may be printed in the error/status column of the transaction printout.

error

The pump control unit sent an error code that the SC III did not recognize. Report the problem to your service representative.

Aborted

The transaction was terminated before it was completed.

Limit

A customer pumped the maximum amount of fuel authorized.

Mem Lost

The SC III could not get the information that it expected for this transaction from the pump control unit that the transaction was assigned to.

Pwr Fail

The transaction was terminated when a power failure occurred at the pump control unit.

Payout

The transaction was a pay out. The amount is positive, but is not included in the total of PRINT TRANSACTION.

Prod Out

Product is out of stock.

Pump Down

A pump is down.

Refund

The transaction was a refund. Dollar total is negative.

Return

Transaction was a return. Dollar total is negative.

Reversal

Transaction was reversed. Dollar and quantity total is negative. There should be a completed transaction that matches the reversal.

Timed Out

The customer did not pick up the hose in the allotted time; or the customer did not start pumping fuel in time after picking up the hose; or the customer stopped pumping and did not resume pumping in the allotted time.

Unassigned

The SC III did not expect this transaction from this pump. If pumps were reassigned during the transaction, this transaction will be accompanied by a transaction with the message MEM LOST. See the error message Pump control unit #X found unassigned transaction.

Withdrawal

Transaction was a withdrawal.

Messages in Command Mode

The following messages may be printed in response to commands entered by the user.

Already exists

You are trying to load a price code, product, or other data element that is already on file.

Look up the ;I option of the command to see if it is appropriate for what you want to do.

BAD MESS

This message stands for bad message. It indicates that a program error has occurred.

Call your service representative.

Can't activate

You tried to activate a pump with the command ACTIVATE PUMP, but the action was terminated because of an error—such as no price loaded—or because the pump was already in use.

Bad data input

You entered a string that contained invalid characters or data that was outside the acceptable range.

Check data and retype.

Can't open file

You tried to create a file on a non-existent directory or disk drive, or with an illegal name, or the disk is full.

Check the path, the file names, and the disk used with the command.

Cannot run program

You do not have a high enough permission level to execute the command you just entered.

Use the manager or supervisor key, if available, or get user with highter permission level to run the command.

Card is not valid

You tried to lock out a card with the command LOCK CARD, but it was already locked out or it was outside acceptable range.

You have limited lockout and tried to unlock an account number that matches a wildcard number that is locked out.

You used CHECK CARD and the card number you entered was found to be not valid.

Card is valid

You tried to unlock a card with the command UNLOCK CARD, but it was already unlocked.

You have limited lockout and tried to lock out an account number that matches a wildcard number that is unlocked.

You used CHECK CARD and the card number you entered was found to be valid.

Command failed

The command was unable to complete the requested action.

Device out of service

You tried to activate a pump with the command ACTIVATE PUMP, but the pump was not in service.

Does not exist

You tried to execute a command, such as an enable or disable command, for a device that does not exist.

You tried to execute a command for a product that does not exist.

Error loading program

Try to load the program again. If the message appears again, call your service representative.

Invalid option

You tried to use an option with a command that does not take that option.

Manager key required

Need user with higher permission level to sign on and run the command.

No more file space

There is no room in a file for information you are trying to add. For example, this message is printed if you try to add too many island card reader messages.

You are adding rows to a table that is full.

Delete some rows, or if necessary and if enough space is available, reconfigure the system with a larger table size.

Permission denied

Your permission level is not high enough to execute the command you just entered.

Insert the manager key in the console on this site, sign on as a user with a higher permission level, or have another user with a higher permission level sign on to execute the command.

Program checksum error

Try the command again.

If the message persists, use a backup copy of the program.

Pump deactivated

You deactivated a pump with the command DEACTIVATE PUMP.

Pump is not on

You tried to deactivate a pump that was not pumping.

Pump is ready

You activated a pump with the command ACTIVATE PUMP.

Site is stopped

Operations are suspended at the site.

No transactions are in progress.

Use RUN to resume operation.

Some valid, some not

You have limited lockout and used wildcard numbers with the command CHECK CARD, LOCK CARD, or UNLOCK CARD, but there was not an exact match.

String too long

This is a software error.

Contact your service representative.

Transactions in progress

You tried to execute a command that cannot be executed while a transaction is in progress.

Unknown command

You have tried to enter a command that does not exist; your mistake is possibly just a typographical error.

If you are trying to execute a command file or a disk-based command, the correct disk may not be inserted, (must use full path name for file on floppy or on hard disk not in Sc3 or SC3\BIN directories) or you may be in the wrong directory.

Use the DIRECTORY command to list the current directory.

31 – Appendix E: Files on the Hard Disk

The following table lists the files on the SC III. These files are installed on your hard disk.. The SC III software is distributed on 3.5-inch floppy diskettes, labeled Release Applications. If you have a network router, such as Buypass or VisaNet, for credit and debit card verification, the router software is included on Application disk.

Note: The distributed files change occasionally, so this appendix may not be completely up-to-date. However, most of the files on the diskettes are described here.

System Diskette

Root Directory: Operating System

FRAMOS.BIN	The SC III operating system program.
FRAMOS.CFG	The SC III configuration file (not shipped with updates).
CRASH.DOC	Warning message printed by CRASH.CMD in the event of an operating system crash. May be edited.

BIN Directory: Disk-based Commands And Command Files

Disk-based Command Files

BACKTRAN.BIN	Backs up transactions only.
CHKDSK.BIN	Checks and repairs disk directory.
CONSOLE.BIN	Console configuration program.
DUMP.BIN	Allows technician to print areas of memory.
FIND.BIN	Looks for string in text file.
FRED.BIN	Full screen text editor.
KERMIT.BIN	Send or receive file from another computer.
PRODMRG.BIN	Merge information for downloading to the Profit Point.
PUMP.BIN	Pump configuration program.
RESTORE.BIN	Restore backed-up system tables and transaction data.
STATUS.BIN	Display system status information.
SYS_PAR.BIN	System configuration program.

Miscellaneous Command Files

AUTOEXEC.CMD	Run automatically after cold boot. Loads standard crons and copies a few CMD files to the RAM disk.
CD.CMD	An alias for the command CHD.
CRASH.CMD	Command file run by cron in the event of a system crash.
POS.CMD	Send PRODMRG data to the Profit Point.
SYSBACK.CMD	Backup all tables except transactions to disk file.
TRANBACK.CMD	Backup transactions to disk file.

Applications Diskette

Root Directory

SYSBACK.DTA	Created by SYSBACK.CMD. Stores backup copy of system data.
TRANBACK.DTA	Created by TRANBACK.CMD. Stores backup copy of transactions.

BIN Directory

Disk-based Command Files

BACKTRAN.BIN	Backs up transactions only.
BLEND.BIN	If you have blenders, produces a report on blended product.
BUFFERS.BIN	Displays buffer usage.
CHKDSK.BIN	Checks and repairs disk directory.
EJ_AUTH.BIN	Sets authorization codes for E.J. Ward cards.
FUELPT.BIN	Fuel Point configuration program.
GATE.BIN	Gate controller configuration program.
OFFROAD.BIN	Discount for selling off-road fuel.
PERM.BIN	Set permission levels of system commands.
RCP.BIN	Copy directory and subdirectories.
RDEL.BIN	Deletes a directory and all subdirectories under it.

> **CAUTION**
>
> Be very sure you know what you are doing when you use this command!

READER.BIN	Island card reader configuration program.
RESTORE.BIN	Restore selected tables to memory from applications disk file.
SET_PERM.BIN	Set permission levels of disk-based commands.
TABLE.BIN	Table size configuration program.
TAX.BIN	Tax table lookup program.
TREE.BIN	Displays directory structure as a tree.
TRFMT.BIN	Transaction format configuration program.

WHERE.BIN	Prints the full pathname of the current directory.
WOW.BIN	Display transactions in progress, history, and pump data.

Miscellaneous BIN Files

FUELER.BIN	Program to set the fueler ID for a cluster with Fueler ID.
LOOKUP.BIN	Part of the Fleet Options package. The Lookup program lets you quickly set up accounts for customers.

Miscellaneous Command Files

CD.CMD	An alias for the command CHD.
CONFIG.CMD	Print configurations.
EASYFAX.CMD	Sample command file for sending faxes with EasyLink.
FULLSERV.CMD	Put all pumps in full service.
INSTALL.CMD	Hard drive installation.
MAKEPERM.CMD	Reset permission levels on disk-based command to default.
OFFROAD.DTA	Tax information for OFFROAD.BIN.
PURGEMEM.CMD	Save transactions to disk and purge memory.
PUTPRICE.CMD	Load pump prices.
REPEAT.CMD	Repeat specified command every second.
SELFSERV.CMD	Put pumps in self-service mode.
STARTUP.CMD	Sample site startup command file. May be edited for actual site.
SYSBACK.CMD	Backup all tables except transactions to disk file.
TIMESET.CMD	Call Boulder, Colorado, to set the timeclock.
TRANBACK.CMD	Backup transactions to disk file.
TRANEXPT.CMD	List exception events in transaction file.
TRANFULL.CMD	If loaded as a special '%' cron, will display a warning on the reader terminal and receipt printer #1 when transaction file reaches percentage full specified in system parameters.
TRANHOUR.CMD	Display bar graph of transactions by hour.

32 – Appendix F: Dialout Communications

In addition to accepting privately issued cards, the SC III can be configured to accept cards issued by financial institutions (FI). This appendix covers card-authorization networks supported by the CFN System.

The CFN system can handle many types of credit and debit cards. You must decide which cards (if any) fit the needs of your operation and set up the necessary business relationships to accept those cards profitably.

With privately issued cards you have a billing relationship directly with your customer. With cards issued by FIs, your billing relationship is with the financial network that governs the card and with the FI you select to do your transaction processing.

You must order your system with the particular network interface you want. Then, you need to set up an agreement with the bank or network for the system to be able to work. The bank or network representative will provide information on loading the system, such as phone numbers, merchant IDs, and type of cards accepted.

The following sections cover many aspects of the system which have to be set up according to the dictates of the network. Make sure that all aspects of the system have been set up correctly, because sometimes the response of the network to invalid parameters can be confusing to diagnose.

Be sure to check with your local fire marshal for approval to accept credit and debit cards when the site is unattended.

Types of Cards

Cards issued by FIs fall into two, occasionally overlapping, categories:
- Debit cards electronically move the customer's funds from a checking or savings account to pay for the sale. Debit cards are also used in automatic teller machines at banks and thrifts, and they are usually issued only by banks and savings & loan associations.
- Credit cards obligate the customer to pay the issuing financial institution (issuer) the amount of the sale. The FI that does your processing pays you, and the issuing financial institution pays your FI.

Familiar examples of credit cards are MasterCard, VISA, and American Express. MasterCard and VISA are issued by banks that are participating members in those credit organizations, while American Express (issued by American Express) and Discover (issued by Sears Financial Services) are issued by non-banks.

Credit cards may sometimes be used to initiate debit transactions, provided that the customer enters a personal identification number (PIN) at the time of sale. Less frequently, debit cards may bear VISA or MasterCard symbols so that they may be used as credit cards.

Credit Card Numbering

Credit cards are identified by the account number prefix (the first digit or digits) and the number of digits in the account number. For example, VISA credit card account numbers all start with 4, and they have either 13 or 16 digits.

However, electronic card readers cannot always distinguish a card's type (for example, credit card, phone card, library card, or video rental card) just by that card's magnetically encoded number. And some of these other special purpose cards, which you certainly do not want to accept for payment, may even have the same encoded numbers as valid credit cards. Confusion can even occur between different types of credit cards, such as Carte Blanche and Diner's Club.

Consult your bank or card network for current information about the account number prefix and length.

Handling Transactions

Accepting debit or credit cards in transactions usually consists of three parts: authorization (called verification by Gasboy), data capture, and settlement.

Authorization (verification)

Authorization is the process of checking to see whether the card is good for the requested sale amount before the customer receives the fuel or merchandise. Four verification options are available on the SC III:

No verification	This method is not recommended, due to the financial risk involved.) No checking - except for the mod 10 check digit, and then only if so configured - is done on the status of the card.
Local lockout	(This method is not recommended, due to the financial risk involved.) Credit and debit cards are verified in the same ways as privately issued cards, through the CFN III's lockout options (which are described in the **Card Lockout** chapter of the **System Administrator's Manual** for version 1.0 and in the **Proprietary Cards** section of this manual). Do not use local authorization for debit card transactions, since the bank that issued the card must be contacted to check the PIN that the customer entered. Only limited lockout is appropriate for local authorization of credit cards. (Bit-mapping is used only for private-issue cards; you cannot have both limited and bit-mapped lockout.) You must set up the local lockout file to include information about the ranges of card numbers you want to accept. You can also specify certain card numbers as valid or invalid.

Remote verification via dial-up	Usually the site is configured to place a telephone call to a local number. The site signs on to the communications network using an account name and password provided by the card network and then requests authorization for the requested sale amount. If there is a sufficient account balance (for debit cards) or line of credit (for credit cards) to cover the sale, the transaction is approved and the balance is adjusted. The authorizer assigns the transaction an approval number, which is your proof that the transaction was approved. If the card is not valid or if it does not have funds or a line of credit to cover the transaction amount, the sale is denied. If you do remote verifications via dial-out, you will need a phone modem dedicated to this purpose (in addition to the modem you use for polling, if any).
Remote verification via leased line	This type of authorization is the same as remote verification by dial-up, except that the transaction is sent over a dedicated communications line to the network node. You can configure the SC III to do both local and remote verification. In that case, the cards will be verified locally only if the remote verification cannot be completed after several tries. This may happen if the network is down or busy.

Data Capture

As the sale is completed, the SC III records data about the sale: time, date, product, price, quantity, and amount. It stores this information in a file for later transmission to the financial network at settlement.

The SC III cannot capture any data embossed on the card, nor can it obtain the customer's name and address from the transaction information. Your attendant will have to collect this information if you want it for your records.

For sales approved inside, you should get a signature on a receipt.

Settlement

For most networks, the SC III must contact the financial network at least once a day to reconcile the credit and debit card transactions it has captured and stored. The network may generate a settlement report containing total dollars for the batch of transactions and transmit this report to the SC III. The report may be used for reconciliation with the totals on the SC III. For the total to balance, settlement must occur at shift break or the end-of-day break.

The form of the settlement report is defined by the network and varies from one network to another. Refer to the specific Debit/Credit manual for details about your network's settlement report.

Card Networks Certifying CFN

You can connect to any one of the financial networks that have certified the CFN.

The following table summarizes the networks that have certified the CFN and the card types accepted.

Card Types Accepted	Network Interface																	
	ADS-Citgo	AMOCO/Datacard	ADS-FINA	ADS-Zion	Buypass	Comdata	EDS/CCIS	FDR	Gascard	PaymenTech	Gasboy Dial	NaBANCO	NDC	Sinclair	SPS/Phillips	T-Chek	UFDA	VisaNet
American Express	●	●	●	●	●			●	●	●	●	●	●	●	●			●
Carte Blanche					●					●	●		●		●			●
Diner's Club		●			●			●		●	●		●		●			●
Discover	●	●	●	●	●			●	●	●	●	●	●	●	●			●
MasterCard	●	●	●	●	●			●	●	●	●	●	●	●	●			●
VISA	●	●	●	●	●			●	●	●	●	●	●	●	●			●
Debit Cards	●				●													
Amoco		●																
Buypass Fleet					●													
CCIS							●											
Country Energy					●													
Citgo	●				●													
Coastal					●													
Comdata						●											●	
Country Mark													●					
Diamond Shamrock					●													
EDS																	●	
FINA			●															
Fleet One											●							
Fuelman									●									
Gascard									●		●			●				
Gulf					●													
HESS															●			
IAES	●				●						●							
International Auto/VISA		●																
JCB										●			●					
MasterCard Fleet		●									●							
NTS Trans/Instant cash																	●	
PH&H	●	●			●					●	●				●			
Phillips															●			
Sinclair Retail/Access/Fleet											●			●				
Southern States													●					
SPS Fleetshare											●				●			
T-Chek											●					●		

Tesoro					●													
Texaco					●													
Transicard		●																
VISA Fleet	●				●						●							
Voyager	●	●									●			●				
WEX	●	●	●		●					●	●		●	●				

Credit card networks that have certified the CFN are VisaNet and FDR (First Data Resource). Credit cards issued by member banks have the network logo printed on them.

As used in this appendix, proprietary cards refer to cards issued by a financial network; this does not include credit cards. Club cards are issued by Gasboy sites themselves.

Most card networks require that you display card logos to inform the customer that those cards are accepted at your site.

Uppercase Error Messages

All error messages from the networks are in uppercase—capital—letters. When you see such a message, you should contact your network's help desk, not a Gasboy service representative.

Modems

When the SC III dials out to a network for card authorization a sequence of modem events occurs during the dial session. This section is a quick primer on how the SC III interacts with a dial-up modem and how to debug problems with network connections.

The modem example given here is a Hayes 2400 Smartmodem. Most Hayes compatible modems have similar features. Figure 32-1 shows the indicator lights on the modem. These are used to diagnose problems in communications.

Figure 32-1: Indicator Lights on Hayes 2400 Smartmodem

HS	AA	CD	OH	RD	SD	TR	MR

After the SC III has initialized the modem, only the TR (Data Terminal Ready) and MR (Modem Ready) lights should be on steadily if the modem cable has no bad connections at this point.

An on light is shown in lowercase letters. Figure 32-2 shows how the modem looks when the site first reboots and before the network handler task initializes the modem.

Figure 32-2: Indicator Lights on Modem - aa, tr, mr On

HS	aa	CD	OH	RD	SD	tr	mr

When the SC III initializes the modem, the SD (Send Data) and RD (Read Data) lights should flicker. These indicate when data is being sent or received by the site.

After the modem is initialized, the lights should look as in Figure 32-3. Every few seconds, the RD and SD lights should flicker. If this is not happening, the network software may not have been initialized and the network handler is stopped until this step is done. Refer to the specific Debit/Credit manual for setup information for your router.

If the AA (Auto-Answer) light is on, the modem has not been initialized for network communications. Also, check the port setup. The host modem might be connected to the remote Site Controller port.

Figure 32-3: Indicator Lights on Modem - hs, tr, mr On

hs	AA	CD	OH	RD	SD	tr	mr

When the network software is set up and running, the RD and SD lights flicker every few seconds. When an authorization is attempted, if the speaker is on you should hear tones indicating the modem has been given a number to dial. The OH (Off-Hook) light should go on (Figure 32-4).

Figure 32-4: Indicator Lights on Modem - hs, oh, tr, mr On

hs	AA	CD	oh	RD	SD	tr	mr

If a good connection is made, the CD (Carrier Detect) light will go on.

Most networks have a setup time called Carrier Wait Timeout. If this is set too short, the site will hang up before carrier is detected, which should take less than 20 seconds. Twenty seconds is the default setting. If the CD light as shown in Figure 32-5 does not come on, set this parameter to a larger value and try it again. The modem may be slow in matching the carrier signal with the host on the other end. If you listen to the modem, you will hear a digital tone; when the tone shifts, the modem is attempting to sync up with the host. If a carrier signal is detected by both, the light goes on.

New modems with 14400 and 28000 baud speeds may take several seconds as they "down shift," trying to match the host modems which typically run at 1200 and 2400 baud. This is why GASBOY recommends a Hayes 2400 baud modem, even a used one. The connections will be faster.

Figure 32-5: Indicator Lights on Modem - hs, cd, oh, tr, mr On

hs	AA	cd	oh	RD	SD	tr	mr
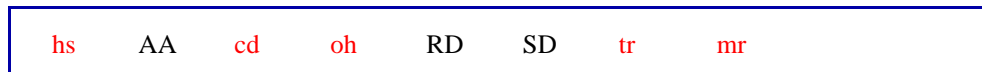
At this point the SC III waits for a signal from the host computer. You should see the RD and SD lights flicker as data is sent back and forth. At the end of the call, the SC III hangs up the modem. OH should go off and the modem should look again as in .

Troubleshooting - Quick Diagnostic Checks

No Indicators Lit on the Modem

1 Check power to the modem. At the least, the MR light should be on.

2 Check the cable and the cable connectors.

Only the MR Light is On

Check the cable and the cable connectors.

No Tones Produced When You Swipe a Card

1 Check the phone numbers.

2 Make sure that the system parameters on page 4 and 5 of SYS_PAR have Remote Authorization set to Credit.

3 Try cycling power to reset the modem.

No Connection

1 Do you need to dial 9 first? Add a 9 and a comma (9,) to the front of the phone number or check to see what the outside line command is.

2 Another method is to run Kermit on the site.
   If the host port is 4, type
       kermit **1200 l4** (note: that is L4, not fourteen)
       then type **AT** and press **ENTER**. You should get 0 or OK back.
       Now type ATDT **1**555**1212**, substituting the host number for the 555 number shown.
   After the modem dials, type
       AH0 (note: that is a zero)
       to hang up the line. If the modem dials out, recheck the phone number, and make sure the network is set up properly.
       Enter **SHIFT CTRL 6** and press **ENTER** to leave Kermit.

Bad Connections with a 950 Number

There should be a backup 800 number. Put it in as the main phone number and see if a better connection with the host results.

33 – Appendix G: Trademark Information

The following are non-Gasboy trademarks used in this document.
- 409® is a registered trademark of the Clorox Company.
- American Express® is a registered trademark of American Express Co.
- Amoco® is a registered trademark of Amoco Oil Company.
- Amerada Hess℠ is a service mark of Amerada Hess Corporation.
- Buypass℠ is a service mark of Buypass Inco Corporation.
- Carte Blanche℠ is a service mark of Diners Club International Ltd.
- Citgo® is a registered trademark of Citgo Petroleum Corporation.
- Coastal® is a registered trademark of The Coastal Corporation.
- Comdata™ is a trademark of Comdata Network, Inc.
- Country Energy℠ is a service mark of CHS Inc.
- Diamond Shamrock℠ is a service mark of Diamond Shamrock Refining and Marketing Company.
- Diners Club℠ is a service mark of CitiCorp Diners Club Inc.
- Discover℠ is a service mark of Novus Credit Services Inc.
- Fantastik® is a registered trademark of Dow Consumer Products Inc.
- FINA® is a registered trademark of FinaMark, Inc.
- Fuelman℠ is a service mark of FleetCor Technologies, Inc.
- Gulf® is a registered trademark of Chevron U.S.A. Inc.
- Hayes® is a registered trademark of Zoom Telephonics, Inc.
- JCB℠ is a service mark of JCB Co., Ltd.
- MasterCard® is a registered trademark of MasterCard International Incorporated.
- MPD® is a registered trademark of Gilbarco Inc.
- MS-DOS® is a registered trademark of Microsoft Corporation.
- Phillips 66℠ is a service mark of Phillips Petroleum Company.
- ProComm Plus® is a registered trademark of DataStorm Technologies, Inc.
- Quick Fuel℠ is a service mark of Jacobus Energy, Inc.
- Sinclair® is a registered trademark of Sinclair Oil Corporation.
- Star® is a registered trademark of Star Micronics America, Inc.
- Tesoro℠ is a service mark of Tesoro Petroleum Corporation.
- Texaco® is a registered trademark of Chevron U.S.A. Inc.
- Tokheim® is a registered trademark of Tokheim Holding B.V. Corporation.
- Visa® is a registered trademark of Visa International Service Association.
- Wayne® is a registered trademark of Dresser Equipment Group, Inc.
- Windows NT® is a registered trademark of Microsoft Corporation.
- Wright Express℠ is a service mark of Wright Express LLC.

34 – Glossary

^	Indicates that you are to hold down the CONTROL key while pressing and releasing another specified key.
↵	Indicates that you are to press the RETURN key.
ACCOUNT NUMBER	Account number in CFN documentation refers to the entire customer-information field of a proprietary card or the account-number field of a bank card. For proprietary cards, the account-number field is usually divided into subfields that may include a card number, vehicle number, employee number, customer account number, or other fields. Although it may seem confusing to call the entire field the account number when it can contain a subfield called account number, this terminology conforms with the Track II Standard as defined by the American Banking Association. See also CARD NUMBER.
ACCOUNT NUMBER LOCKOUT	See LIMITED LOCKOUT.
ACTIVATE	A pump must be activated before a customer can pump fuel. A console user can active a pump by selecting the pump with the pump number key, accepting payment (for prepaid sales only), and pressing the START key. A customer can activate a pump from the island card reader by entering a valid card and keying in the required information, including the pump number. The Site Controller command ACTIVATE PUMP also activates a pump for one transaction. A pump in full-serve mode is always active. ACTIVATE is also used to activate a gate using the command ACTIVATE GATE.
ALLOCATION, FUEL	Quantities or dollar amounts of fuel can be allocated to totalizers for each allocation number. When a card with an allocation number pumps fuel, the totalizer for that allocation number is decremented. When the totalizer is zero, cards with that allocation number cannot access fuel.
ALPHANUMERIC	Consisting of characters of the alphabet and numbers. An alphanumeric display can display letters and numbers, and usually other characters such as punctuation.
APPLICATION	A computer program designed to solve a specific problem. PC Sitecontrol is an application program.
ASCII	Pronounced askee. An acronym for American Standard Code for Information Interchange. A standard 8-bit code used by the CFN System and many other computers. An ASCII character is a character encoded in ASCII. An ASCII file is a file made of ASCII characters.
APPROVED	A transaction is approved when the customer's card has been authorized for use at that site (if it is a prepaid card sale), a pump has been reserved, and all other conditions have been met so pumping can start.
AUTHORIZATION	Authorization refers to bank or club-card transactions. The steps required for card authorization depend on the type of card used and the system configuration. Authorization may include checking the local lockout file, the card expiration date, and the customer's PIN, and getting approval from a bank network.

BACKUP	An extra copy of information stored on a disk as a precaution against damaging the original. It is a good idea to make a backup copy of your transaction records. On the SC III, you can back up transaction and other data to a floppy disk.
BATCH	To group a set of commands and data to be executed together. On the Site Controller, you can create BATCH FILES (files with .CMD extensions) for the Site Controller to execute. When you enter commands as a batch file, all the commands are executed before you see a new prompt.
BATCH FILE	A file that contains commands and their data, which can be executed as a group. Same as COMMAND FILE.
BAUD	A measure of the rate data is transmitted, expressed in bits per second.
BIT	An abbreviation for binary digit, the smallest unit of information in a computer. A bit can have a value of either 0 or 1.
BIT-MAPPED LOCKOUT	Uses less memory but is less flexible than LIMITED LOCKOUT. Bit-mapped lockout can be used with privately issued cards. The number used for lockout can be up to eight digits long. Same as CARD NUMBER LOCKOUT.
BOOT	To start or restart the operating system of a Site Controller restoring power after a power failure.
BROWSER	Short for Web browser, a software application used to locate and display Web pages. Graphical browsers can display graphics as well as text. In addition, most modern browsers can present multimedia information, including sound and video. Text browers display only text, no images.
BUFFER	A temporary data-storage location for information.
BUG	An error in a program.
BYTE	The storage space needed for one character of information. In the CFN System, a byte is 8 bits.
CABLE	A group of plastic-encased wires with a connector on each end, used to connect one electronic device to another.
CARD NUMBER	For CFN System proprietary cards, the subfield of the account number used for bit-mapped lockout.
CARD NUMBER LOCKOUT	See BIT-MAPPED LOCKOUT.
CATHODE RAY TUBE	A vacuum tube resembling a television screen, used as a display device. Also refers to a terminal with a CRT display.
CD-ROM	A compact disk, read-only memory. A form of storage characterized by high capacity (roughly 600 megabytes) and the use of laser optics rather than magnetic means for reading data.
CENTRAL PROCESSING UNIT (CPU)	The computer's "brain," comprising all the necessary circuits for handling information or instructions.
CFN3	The software application running on the Site Controller III unit. The application includes commands, windows, and icons.
CFN III	The point of sale system consisting of Site Controller, Islander, Profit Point, Distribution Boxes, and peripherals. See also SITE CONTROLLER and SYSTEM.
CHARACTER	Any letter, digit, punctuation mark, or symbol (usually represented by a unique binary code consisting of 8 bits). See also CONTROL CHARACTER.
CLUB CARD	Same as PROPRIETARY CARD.
COMMAND	A direct instruction to the CFN Site Controller or console that is carried out immediately.

COMMAND FILE	A command file contains a list of Site Controller commands and data for the commands. Command files for the SC III have the extension CMD. When you type the name of the command file (without the extension), all the commands in it are executed.
COMMAND MODE	When the data terminal is in command mode, it will accept user commands.
CONFIGURATION	The configuration for a CFN site refers to the hardware and software options that were selected for that site.
CONTROL CHARACTER	Character obtained by holding down the key marked CONTROL or ^ while pressing another key on the keyboard.
CPU	See CENTRAL PROCESSING UNIT (CPU).
CRASH	When the Site Controller cannot complete or restart a program as the result of a hardware or software malfunction.
CRON	A user-defined command file or command that is to be executed at a specific time or event. Cron is short for chronological.
CRT	See CATHODE RAY TUBE.
CURRENT SALE	The console can keep track of two sales for each pump. The current sale for a pump is the sale that is displayed when you first press a Pn key. See also PREVIOUS SALE.
CURSOR	A visible mark or character (sometimes flashing) on a CRT monitor indicating where the next character you type will appear.
DATA	Information in the form of characters or words.
DATABASE	A large, organized collection of information that can be retrieved by the Site Controller or other computer. The transaction information is a database.
DEFAULT	The actions the CFN System automatically takes or the configurations it initially uses, unless and until you tell it otherwise.
DEPARTMENT KEY	The product keys on the console can be used for departments, such as deli, grocery, or miscellaneous non-taxable.
DIP SWITCH	Stands for dual in-line package switch. DIP switches are mounted on the printed circuit boards of some CFN System components. DIP switch settings can be changed to configure some functions.
DIRECTORY	Files on an SC III hard disk, RAM disk or floppy disk can be organized in directories. Directories have been compared to drawers in a file cabinet, but an SC III directory can have other directories (subdirectories) under it.
DISK	A flat circular device with a magnetic surface upon which Site Controller II programs and data are stored. Though the disk itself is circular, it is enclosed in a square casing, so you cannot see its circular shape.
DISK-BASED COMMAND	A disk-based command is an SC III command that is on a hard or floppy disk instead of being part of the SC's operating system. Disk-based commands work just like other, system-based, SC III commands, but the command must be on the SC III's hard disk (if there is one) or a floppy disk with the command on it must be in the SC III's disk drive to execute the command.
DISK DRIVE	A device for reading and writing magnetic data on a floppy or hard disk. The SC III may have one or two floppy disk drives. SC IIIs also have a hard disk drive.
DISKETTE	See FLOPPY DISKETTE.
DISK FILE	A file saved on disk. It may contain text, data, batch commands, or executable programs.
DOCUMENTATION	The manuals; the printed descriptions and instructions for the CFN System hardware and software.

DOT-MATRIX PRINTER	A printer in which each character is formed from a pattern of dots made by moving pins. The standard printers for the Site Controller I, II and III are dot-matrix printers.
DOWN	The condition of a CFN System or system component that is shut off or not working.
DOWNLOAD	To transfer data from another computer to your Site Controller.
EDIT	To make changes in an established file. The SC III has editors— programs that allow you to edit files.
ELECTRONIC MAIL	Computer messages sent from one user to another. You can send mail from one SC III to another, and have it print on the log printer, if desired. Also known as E-mail or e-mail.
ENTER KEY	The key on the console that you press to complete a numeric entry. On some computer keyboards, the key is called RETURN instead of ENTER.
EXECUTE	To carry out or perform an operation. When you type the name of a command at the prompt and press ENTER, you are telling the Site Controller to execute that command.
FALLBACK PRICE	One price level (usually level 0) is designated as the fallback price level. The fallback price level is used if prices for other price levels have not been entered, or if another price level has not been selected for the sale yet. The fallback price is the price loaded for the fallback price level.
FIELD	One piece of information from a record. For example, the transaction number and the account number are fields in the transaction record. See RECORD.
FILE	Related information treated as a unit and stored in memory for the Site Controller I, or on a disk for the SC III. On the Site Controller I, data for pumps, tanks, totals, and so on is stored in special files. On the SC III, these are called TABLEs. See also USER FILE, COMMAND FILE, and DISK FILE.
FILL	A sale is approved for a fill if an amount is not specified before authorization is requested. The amount of a fill depends on the various limits in effect for that sale.
FLOPPY DISKETTE	A circular plastic storage medium that is soft, flexible, and permanently enclosed in a square, rigid, plastic protective sleeve. Information is stored and retrieved on the smooth magnetic surface of the disk by a head similar to those used in tape recorders. SC III uses 3.5-inch floppy disks.
FUEL POINT READER (FPR)	Optional program and hardware for automated fleet fueling. Prevents unauthorized dispensing while automatically recording vehicle information.
GRAPHICAL USER INTERFACE	A program interface that takes advantage of the computer's graphics capabilities to make the program easier to use.
GUI	See GRAPHICAL USER INTERFACE. Pronounced **goo-ee**.
HARD DISK	A disk that is similar to a floppy disk, but rigid and built into its computer. All SC IIIs have hard disks.
HARDWARE	The physical equipment that makes up a computer system.
HOST	The computer that your Site Controller may be connected to. The host can be at a remote location with the connection over a direct connect or dial-up phone line, or the host can be at the same location as the Site Controller with the connection made by only a cable.

HTML	Short for Hypertext Markup Language, the authoring language used to create documents on the World Wide Web. Gasboy's On-line documentation uses HTML.
ID NUMBER	See USER ID.
INPUT	Data for a Site Controller command.
INTELLIGENT MODEM	A modem that, among other things, is able to dial and answer your phone. Hayes Smartmodem, used with the CFN System for dial-out and dial-in, is an intelligent modem.
INTERACTIVE	When you enter commands interactively, you type each command in response to the prompt, the Site Controller executes the command, and then gives you a new prompt. See BATCH.
INTERFACE	Anything connecting two or more electronic devices together.
INTERNET	A global web connecting more than a million computers.
INTERNET SERVICE PROVIDER (ISP)	A company that provides access to the Internet. For a monthly fee, the service provider gives you a software package, username, password and access phone number. Equipped with a modem, you can then log on to the Internet and browse the World Wide Web, and send and receive e-mail.
K	Abbreviation for kilo, meaning one thousand.
KEYBOARD	An input device that generates a character when you depress a key.
KEYSWITCH	A switch that looks like a lock and that requires a key to operate. CFN devices, such as Site Controller IIs and consoles, have keyswitches that can be used to change the operating modes of the devices. For example, the manager keyswitch on Site Controller IIs allows them to be put into manager mode. SC III has no keyswitch.
LCD	Liquid crystal display. One system for displaying characters and background on a computer screen. The island reader terminal uses an LCD.
LED	Light-emitting diode. LEDs are used as indicators on CFN devices. Some displays use LEDs; for example, the Site Controller status lights are LEDs.
LIMITED LOCKOUT	Flexible type of card lockout. Uses more memory than BIT-MAPPED LOCKOUT. Can be used with bank cards and privately issued cards. The number used for lockout can be up to 19 digits. Same as ACCOUNT NUMBER LOCKOUT.
LOAD	To enter data or cause data or programs to be read into memory.
LOCAL	A local command means the Site Controller is accessed directly, through its data terminal or console. Local verification means transactions are authorized by the Site Controller initiating them, without going through a CFN network or a host system. See REMOTE.
LOG OFF	See SIGN OFF.
LOG ON	See SIGN ON.
LOG-PRINTING MODE	When the data terminal is in log-printing mode, it prints transaction data when transactions are completed, and system errors as they occur.
M	An abbreviation for mega, meaning million.
MPD	Multi-product dispenser. In CFN documentation, one set of hoses (one side) of a multi-product dispenser.
MPG	Miles per gallon.

MEMORY	A device, or series of devices, within a Site Controller capable of storing information on a temporary or permanent basis. FLOPPY DISKS and RAM are types of memory.
MENU	A program that displays a list of options for selection by the user. Each selection leads down a different branch of the program, which may contain more menus for further choices.
METHOD OF PAYMENT	How a transaction is paid. Methods of payment the CFN System allows include cash, credit cards, debit cards, and proprietary cards.
MODEM	An abbreviation for modulator-demodulator. A modem is a device that can send data to or from a computer over telephone lines.
NETWORK	A group of interconnected terminals or computer systems that exchange data electronically, usually through telecommunications devices (such as modems). An SC III connected to other CFN sites and bank networks makes up a network.
NON-FUEL PRODUCT	Any product that is not assigned to a pump. Motor oil, antifreeze, and grocery items are non-fuel products, also called merchandise. The Site Controller II and SC III allow non-fuel products; the Site Controller I does not.
ONLINE	The state of being connected (usually via telephone lines) to a computer.
OPERATING SYSTEM	A program, usually built into the computer, that controls the operation of the computer. The Site Controller II and SC III operating system is FRAMOS.
OUTPUT	Results produced by a Site Controller command and usually printed on the terminal.
PARALLEL	Means more than one event happening at a time or occurring simultaneously. Printers and other devices are said to be either parallel or serial. Parallel means the device is capable of receiving more than one bit at a time (that is, it receives several bits in parallel). Most modern printers are parallel.
PARALLEL PORT	A parallel interface for connecting an external device such as a printer. Most personal computers have both a parallel port and at least one serial port. On PCs, the parallel port uses a 25-pin connector (type DB-25) and is used almost exclusively to connect printers.
PATHNAME	The path that leads to a file, including the drive name, directory, and any applicable subdirectories, where the file is located.
P*n* KEY	In CFN documentation, this symbol represents one of the pump-select keys on a console.
PCU	Pump control unit. A device that controls one or more pumps.
PIN	Personal identification number. A PIN is required at some sites for bank cards or proprietary cards. If a PIN is required to use a card, the customer must enter a correct PIN on the console PIN pad or the island card reader keypad.
PORT	A place where the connection is made between the Site Controller and other devices. What you plug a CABLE into.
POSTPAY	To pay for a sale after fuel is pumped. The console can start postpay sales if the site is configured to allow postpay sales. See also PREPAY.
PPP	Short for Point-to-Point Protocol, an Internet standards for transmitting Internet Protocol (IP) packets over serial lines (phone lines). Internet information is packaged into IP packets, a method for enclosing data into small, transmittable units (wrapped up on one end, unbundled on the other). A service provider might offer SLIP, PPP, or both. Your computer must use connection software (usually provided by the service provider) that matches the protocol of the server's connection software. PPP is a more recent and robust protocol than SLIP.

PREPAY	To pay for a sale before fuel is pumped. Sales started from the island card reader are always prepaid. Sales started from the console can be prepay or postpay sales. See also POSTPAY.
PRESET	A preset sale is one where a specific dollar amount or volume is requested before pumping starts. Both prepay and postpay sales can have preset amounts.
PREVIOUS SALE	The console can keep track of two sales for each pump. The previous sale for a pump is the sale that is displayed when you first press the PREV key. See also CURRENT SALE.
PRINTED CIRCUIT BOARD	A computer board that an electronic circuit has been printed or etched on.
PRINTER	An output device that prints data from the Site Controller.
PRINTOUT	A printed copy of the information produced by the Site Controller.
PROGRAM	A set of prepared instructions that a computer such as the Site Controller carries out in sequence to provide a solution to a problem.
PROGRAMMABLE READ ONLY MEMORY	A type of read-only memory (ROM) chip that can be programmed.
PROM	See PROGRAMMABLE READ ONLY MEMORY.
PROMPT	The character the Site Controller uses to indicate that it is waiting for your response. The prompt for the Site Controller II is the current drive letter (A, B, C, or D) followed by an asterisk. The prompt for the SC III is R. Commands that require you to enter additional information display prompts to tell you what information to enter. The console and island card reader also display prompts when additional information must be entered.
PROPRIETARY CARD	A magnetic strip or optical card issued for use with a specific CFN system. Proprietary cards must conform to the CFN proprietary card format.
PUMP	In CFN System documentation, one hose on a single or dual dispenser or pump, or one set of hoses on a multi-product dispenser.
RAM	See RANDOM ACCESS MEMORY.
RANDOM ACCESS MEMORY	The temporary storage device for programs and data for a computer's central processing unit. CFN System devices use battery-backed-up RAM, so the contents of the memory are preserved even during a power failure.
READ ONLY MEMORY	Computer memory that stores information permanently and that cannot be altered by normal operation of the computer.
RECORD	A collection of related information treated as a unit. For example, all the information about a completed transaction makes one transaction record.
REMOTE	A remote command means the Site Controller is accessed through its remote port by a remote host. Remote verification means transactions are authorized by a host system.
RETURN KEY	The key that on a typewriter would actually return the carriage. On the Site Controller data terminal it signals the end of a line or the entry of a command. Also known on some terminals as the ENTER key.
ROM	See READ ONLY MEMORY.
RS-232	An industry-standard serial interface used to attach devices such as modems, printers, to your Site Controller. A type of cable.
RS-422/485	An industry-standard serial interface used to attach reader terminals, pump control units, and other CFN System devices to the Site Controller. A type of cable. The 422 is a single device, the 485 a multiple device.

RUN	When the Site Controller is running, it is allowing transactions. You can also run—that is, execute—a program or command file.
SCSI	Abbreviation of small computer system interface. Pronounced scuzzy, SCSI is a parallel interface standard used by Macintosh computers, some PCs, and many UNIX systems for attaching peripheral devices to computers. SCSI interfaces provide for faster data transmission rates (up to 40 megabytes per second) than standard serial and parallel ports. In addition, you can attach many devices to a single SCSI port, so that SCSI is really an I/O bus rather than simply an interface.
SERIAL	An interface that transmits information bit-by-bit, rather than in whole bytes like a parallel interface.
SERIAL PORT	A port, or interface, that can be used for serial communication, in which only1 bit is transmitted at a time. Most serial ports on personal computers conform to the RS-232C or RS-422 standards. A serial port is a general-purpose interface that can be used for almost any type of device, including modems, mice, and printers (although most printers are connected to a parallel port).
SIGN OFF	To exit command-entry mode on the Site Controller. After you sign off, the Site Controller will not allow you to enter commands until you sign on again.
SIGN ON	To enter command-entry mode. When you are signed on, the Site Controller will allow you to enter commands. To sign on you must enter a user ID number (for the Site Controller II and III) and a password.
SITE	A complete CFN System installed at a location. Also, the business location that uses a CFN System, such as a gasoline station or a convenience store with fuel pumps.
SITE CONTROLLER	The PC that controls the CFN system. Site Controller is sometimes abbreviated according to its version, such as SC I, SC II, and SC III. The SC III has a CFN3 logo on the front of the tower. See CFN III and SYSTEM.
SLIP	Short for Serial Line Internet Protocol, an Internet standard for transmitting Internet Protocol (IP) packets over serial lines (phone lines). Internet information is packaged into IP packets, a method for enclosing data into small, transmittable units (wrapped up on one end, unbundled on the other). A service provider might offer SLIP, PPP, or both. Your computer must use connection software (usually provided by the service provider) that matches the protocol of the server's connection software. PPP is a more recent and robust protocol than SLIP.
STRING	A set of consecutive alphabetic and/or numeric characters.
SYSTEM	An organized collection of hardware and software that works together. The CFN System is made up of a Site Controller I, II or III and the devices connected to it.
SYSTEM-BASED COMMAND	A command that is included within the SC III's operating system. This means that if you load the operating system into the SC III's memory from a floppy disk, you can subsequently remove the floppy disk containing the operating system from the floppy disk drive and still be able to use all system-based commands. In comparison, a disk-based command requires that the disk containing it be in the disk drive or you cannot use that command.
SYNTAX ERROR	An error in the way you entered a command or its options, if any.
TABLE	A collection of data organized for quick reference. The Site Controllers II and III store data for pumps, products, tanks, and so forth in tables. These are called files on the Site Controller I.
TELECOMMUNICATIONS	The communication from one computer to another over distances, usually through a telephone line and modems.

TERMINAL	A peripheral device used for input and output, usually including a keyboard and a screen monitor or printer.
TEXT	Words (as opposed to graphics, programming commands, or formulas).
UPLOAD	To enter data from your computer into another computer. For example, you could upload transaction data from a Site Controller to another computer.
USER	A person who makes use of a CFN System.
USER FILE	Files that you or other users create. On Site Controllers II and III, user files are saved on disk. On the Site Controller I, user files are saved in memory.
USER ID	A number that when combined with a password, will allow you access to a Site Controller II, III or console. Each user ID is assigned a permission level.
WORLD WIDE WEB	A system of Internet servers that support specially formatted documents. The documents are formatted in a language called HyperText Mark-up Language (HTML) that supports links to other documents, as well as graphics, audio, and video files. This means you can jump from one document to another simply by clicking on hot spots. Not all Internet servers are part of the World Wide Web.

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