GASBOY

PC Software for CFN

PC/CFN User's Guide

Computer Programs and Documentation

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Federal Communications Commission (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

Gasboy, Greensboro, is an ISO 9001:2000 registered facility.

Underwriters Laboratories (UL):

UL File#	Products listed with UL
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 Fire Department (NYFD):

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

National Conference of Weights and Measures (NCWM) - Certificate of Compliance (CoC):

Gasboy pumps and dispensers are evaluated by NCWM under the National Type Evaluation Program (NTEP). NCWM has issued the following CoC:

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			

Patents

Gasboy products are manufactured or sold under one or more of the following US patents:

Dispensers

5,257,720

Point of Sale/Back Office Equipment

D335,673

Additional US and foreign patents pending.

Trademarks

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Table of Contents

1 – Introduction

Purpose

The Gasboy Personal Computer (PC)/Commercial Fueling Network (CFN) User's Guide is meant to assist you in using the PC/CFN software. It contains the system specifications, installation instructions, information on getting started and definitions of key terms associated with PC/CFN and its usage. The User's Guide is not intended to be an operation manual for the software. For specific questions on functionality of the software, refer to the Help menu in your PC CFN software package.

Intended Users

Individuals who have purchased and are authorized to use Gasboy PC Software for CFN, including site personnel and Authorized Service Contractors (ASCs).

Related Reading

The following documents contain related information and may be helpful when using PC/CFN:

Document Number	Title	GOLD® Library
MDE-4928	CFN Site Controller II Installation Manual	Gasboy Fuel Management Products
MDE-4299	CFN Series Profit Point Installation Manual	Gasboy Fuel Management Products
MDE-4313	CFN III Manager's Manual for Windows NT - Version 3.3	Gasboy Fuel Management Products
MDE-4314	CFN III Configuration Manual for Windows NT - Version 3.3	Gasboy Fuel Management Products
MDE-4315	CFN III Manager's Manual for Windows NT - Version 3.4	Gasboy Fuel Management Products
MDE-4316	CFN III Configuration Manual for Windows NT - Version 3.4	Gasboy Fuel Management Products

Abbreviations and Acronyms

The following table contains a list of acronyms used in this guide.

Acronym	Definition
ASC	Authorized Service Contractor
CFN	Commercial Fueling Network
FCC	Federal Communications Commission
PC	Personal Computer
MB	Megabyte
NT®	New Technology
RAM	Random Access Memory
ROM	Read-only Memory
UL®	Underwriters Laboratories

2 – Installing and Uninstalling PC/CFN

System Specifications

Given below are the minimum specifications required for PC/CFN software installation. They may differ slightly from the specifications printed on your CD-ROM insert, because additional research has shown that these enhanced specifications will improve the performance of your PC software.

Fuel Management System

The fuel management systems for Gasboy is configured to work with the following:
- Gasboy CFN II
- Gasboy CFN III
- Gasboy Islander II

Personal Computer

The Personal Computer (PC) is configured to work with the following:
- Microsoft Windows 95 or 98, 2000 or Windows NT Workstation with service pack 4 or higher

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IMPORTANT INFORMATION

This software has been designed and tested to work with a PC using Windows® English (United States) regional settings, where the decimal point character is used as the decimal separator. Ensure that your system is set up properly before using this software. Gasboy cannot guarantee that the software will work correctly using other regional settings.

- Pentium or faster processor
- 32 MB RAM required, 64 MB recommended
- 100 MB hard disk space available
- 640 x 480, 800 x 600, 1024 x 768; 256-color or higher VGA display (See Note)
- Mouse
- CD-ROM
- Modem for dial-up connection to CFN II/III fuel management system or serial port and direct connect cable for direct connection to CFN II/III fuel management system
- Windows-compatible laser or inkjet printer, optional (See Note)

Note: If you encounter problems with this software, check if you have the latest video and printer drivers installed on your computer, before you contact technical support.

Installing PC/CFN

Instructions for installing PC/CFN using Microsoft Windows 95/98 or higher are provided here. If you are using Windows 2000 Professional or Windows NT, ensure that you follow the additional instructions given in "Special Instructions for Windows 2000 Professional or Windows NT Workstation Installation" on page 5.

To install PC/CFN, proceed as follows:

1 Turn on your computer, and start Microsoft Windows.

2 Insert the Gasboy PC/CFN software CD-ROM into your CD-ROM drive.

3 Click **Start>Run**.The Run Dialog Box appears.

4 Type **D:\Setup**.
*Note: On most computers, the CD-ROM drive is D. If your CD-ROM drive is not **D**, type the appropriate letter.*

5 Click **OK**.

6 Follow the on-screen instructions for installation.

Modem Notice (If Upgrading from a Prior PC Windows Version)

When you add, edit or delete modems in the modem database using Setup/Communications Parameters, the modem information is stored in a file called GBModem.ini. This file is located in the Program Files\Common Files\Gasboy directory on your PC. If, at any time, you choose to uninstall the PC/CFN software, the GBModem.ini file will be removed and any changes that have been made to the modem information will be lost. Before uninstalling PC/CFN, ensure that you save a copy of GBModem.ini (if you want to save your changes).

In version 3.1.0.7, three new Zoom modem configurations were added to PC/CFN. If you uninstalled a prior version of PC/CFN and saved the GBModem.ini file and have installed version 3.1.0.7, you have the following choices:
- If you did not make any changes to the modems in your previous package, simply install the new software and the new GBmodem.ini file will be installed.
- If you made changes to the modems and saved a copy of the GBModem.ini before uninstalling, and you are not using one of the new Zoom modems, install the software, copy the file that you saved into the Program Files\Common Files\Gasboy directory. This file will replace the new file that was installed with version 3.1.0.7.
- If you made changes to the modems and saved a copy of GBModem.ini before uninstalling and you also want to use one of the new Zoom modems, install the new version, then use an editor to open the saved GBModem.ini file and the GBModem.ini file in Program Files\Common Files\Gasboy directory. Use cut and paste to add any changes from the saved GBModem.ini file into the GBModem.ini file in the Program Files\Common Files\Gasboy directory.

If you are using the patch to update your software to version 3.1.0.7, follow the patch instructions (C36109) for details on the GBModem.ini file.

Special Instructions for Windows 2000 Professional or Windows NT Workstation Installation

Instructions for installing PC/CFN using Microsoft Windows 2000 Professional or Windows NT are given below.

Operating System

To run the PC/CFN software on a Windows NT PC you must be running the Windows NT Workstation 4.0 (Service pack 4 or higher) operating system.

If you are not sure about which operating system your PC is using, proceed as follows:

1   Click **Start>Settings**>**Control Panel**. The Control Panel dialog box appears.

2   Double click the **System icon**. Your operating system version is displayed on the General tab of the System Properties program.

Login

To install the PC/CFN application on a Windows 2000 Professional or Windows NT PC, you must be logged-on to your PC as the NT ADMINISTRATOR user, or as a user who is a member of the ADMINISTRATOR user account. If you are not sure of how to log-on as one of these users, contact PC support person for details.

To run the PC/CFN application on a Windows 2000 Professional PC, you must be logged-on to your PC as a user who is a member of the Administrator or Power Users groups. To run the PC/CFN application on a Windows NT PC, you must be logged-on to your PC as a user who is a member of the Administrator, Power Users or Users group.

After doing this setup, perform the steps outlined in .

Using PC/CFN for the First Time

1   Install the PC/CFN software using instructions given in one of the following:
   • the inside jacket cover of the Gasboy Fuel Management Software CD-ROM
   •

2   Click **Start>Programs>PC/CFN folder**.

3   When the program is run for the first time, you should select either PC/Comm or PC/Fuel package. Click **Help** on this selection screen, if you are unsure of which package you want to use.

4   After you select the package type, you can choose to register the software (if you have purchased a license), or run it as a 30-day demo and register it later.

IMPORTANT INFORMATION
Before proceeding with the Setup Wizard, close all other applications. If other applications are active, while PC/CFN is saving critical data, registry keys or database entries can get corrupted.

After completing the registration, enter the PC/CFN Setup Wizard, which will guide you through the set up of your PC/CFN Fuel Management software.

Setting up PC/CFN Fuel Management Software

To set up PC/CFN Fuel Management software, proceed as follows:

1 On the Setup Wizard's Start tab, click **Start**.

2 Read all the information on the help screens before continuing.

3 Click **Next**.

4 When Page 2 of the Start tab appears, click **Print Setup Form**.This prints a copy of the PC/CFN Setup form.

   Note: If you do not print out this form now, you can print it at another time using an editor, such as Wordpad. This file is called setup.inf and can be found in the PC/CFN directory.

5 Exit from the Setup Wizard and fill out all applicable pages of this form before continuing. It will be helpful if you have the card or key layout from your fuel management system handy. It contains information about field names and sizes.

6 Click **Quit** to exit the PC/CFN Setup Wizard.

   Note: If you are uncertain about any information requested on the Setup form, contact your Gasboy representative to seek clarifications.

7 After you complete the Setup form, restart the PC/CFN package and proceed through the Setup Wizard using that information.

8 When you reach the Finish tab of the Setup Wizard, click **Print** to print a list of your setup information. Store this information along with your Setup form, in a secure place for future reference.

Uninstalling PC/CFN

To uninstall the PC/CFN, proceed as follows:

Windows 95/98

1 If PC/CFN for Windows is running, close the application.

2 To shut down the Interbase Guardian, proceed as follows:
  • position the mouse pointer over the Interbase Guardian icon present in the lower right corner of the Windows Taskbar. The Interbase Guardian icon appears as a green triangle positioned behind a tower styled PC.
  • Click the right mouse button, while pointing at the icon to display the pop-up menu.
  • Shut down the Interbase Guardian, by clicking the left mouse button while pointing at Interbase Shutdown. The Interbase Guardian icon should disappear.

3 To remove PC/CFN using Add/Remove Programs, proceed as follows:
  • Click **Start>Settings>Control Panel**.The Control Panel Window appears.
  • Double click on the **Add/Remove Programs** icon.
  • Select PC CFN from the list of available programs to remove and then click **Add/ Remove**.
  • Follow the on-screen instructions.

Windows 2000 Professional or Windows NT

Note: You must be logged-on to your PC as the NT Administrator, to uninstall PC/CFN.

1 If PC/CFN for Windows is running, close the application.

2 Stop the Interbase Guardian and Interbase Server Services.
  • For Windows NT: click **Start>Settings>Control Panel>Services**.
  • For Windows 2000 Professional: click **Start>Settings>Control Panel>Administrative Tools>Services**.

3 Select Interbase Guardian from the list, and click **Stop**. Follow the on-screen instructions.

4 To stop the Interbase Server, select **Interbase Server** from the list and then click **Stop**. Follow the on-screen instructions.

5 Remove PC/CFN by proceeding as follows:
  • Double click on the Add/Remove Programs icon in Control Panel.
  • Select PC CFN from the list of available programs to remove, and click **Add/Remove**.
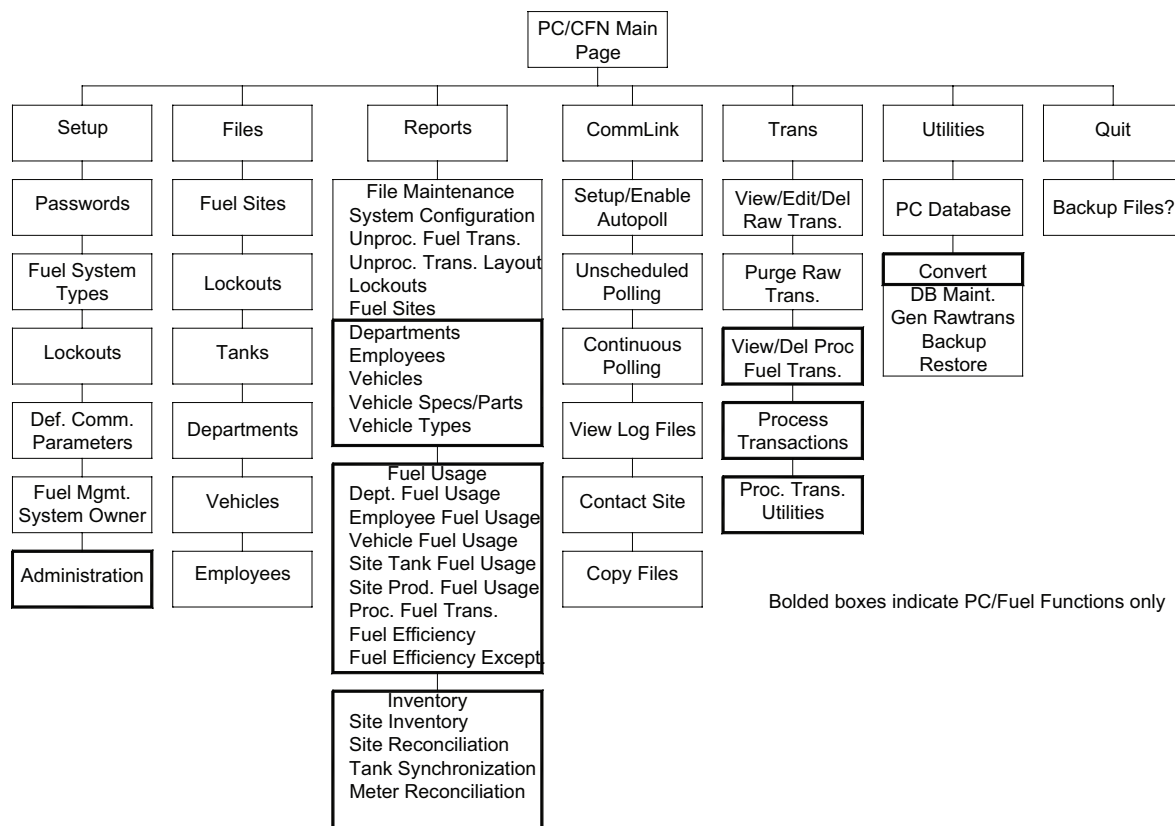 • Follow the on-screen instructions.

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3 – PC/CFN Basics

General

The things you need to know, and the procedures you need to follow differ depending on whether you are running the software as PC/Comm or PC/Fuel. This section contains a visual overview of the software, a generic glossary of terms, and a set of tasks for each software variation. Follow the procedure appropriate to your software selection.

A Visual Overview

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                                    ┌──────────────┐
                                    │ PC/CFN Main  │
                                    │    Page      │
                                    └──────────────┘
```

Setup	Files	Reports	CommLink	Trans	Utilities	Quit
Passwords	Fuel Sites	File Maintenance System Configuration Unproc. Fuel Trans. Unproc. Trans. Layout Lockouts Fuel Sites	Setup/Enable Autopoll	View/Edit/Del Raw Trans.	PC Database	Backup Files?
Fuel System Types	Lockouts	Departments Employees Vehicles Vehicle Specs/Parts Vehicle Types	Unscheduled Polling	Purge Raw Trans.	Convert DB Maint. Gen Rawtrans Backup Restore	
Lockouts	Tanks	Fuel Usage Dept. Fuel Usage Employee Fuel Usage Vehicle Fuel Usage Site Tank Fuel Usage Site Prod. Fuel Usage Proc. Fuel Trans. Fuel Efficiency Fuel Efficiency Except.	Continuous Polling	View/Del Proc Fuel Trans.		
Def. Comm. Parameters	Departments	Inventory Site Inventory Site Reconciliation Tank Synchronization Meter Reconciliation	View Log Files	Process Transactions		
Fuel Mgmt. System Owner	Vehicles		Contact Site	Proc. Trans. Utilities		
Administration	Employees		Copy Files			

Bolded boxes indicate PC/Fuel Functions only

Terms to Know

DB Maintenance

PC/CFN has a database maintenance utility that provides periodic maintenance of your database which minimizes problems, corrects problems that exist, and generally increases database performance. This happens in two ways: automatically or on demand.
- Automatic database maintenance occurs after polling (Comm package), or after processing (Fuel package).
- On demand maintenance is selected from the **Utilities>DB Maintenance**. (The rundbmaint.exe file that is run as a result of selecting this button, can also be run from Windows Explorer, or the Run prompt, in case you need to run maintenance without running the software.)

The database maintenance process is transparent to you as a user, but what occurs internally is, a verification check is performed. If no errors are detected, the maintenance process does not continue. If errors or problems are detected, the process continues to repair the database. Regardless, after nine verification steps, database maintenance is performed on the 10th occurrence.

Note: If your site encounters frequent problems, you may wish to have this frequency lowered to every 2nd occurrence or some other setting. Settings for the database can be adjusted in the dbmaint.ini file which resides in your Windows system directory. Contact Gasboy technical service before changing this file.

A log of maintenance activity is available in the file dbmaint.log, which is stored in the \maintenance directory of your PC/CFN application.

Extra Commands

Extra Commands can be up to ten fuel management system commands, that are executed upon polling. There are two types, namely global and site-specific:
- Global commands are entered on the Fuel System Types form and are executed at all sites included automatic polling.
- Site-specific commands are entered on the Fuel Sites form and are executed only at that site upon polling. Refer to your fuel management system manual, for appropriate commands. Commands do not require user input.

Fuel Site Transactions

Each time a user attempts to obtain fuel at a fuel site, a transaction is generated. Even if the user encounters errors while doing this a transaction may be generated. Transactions may also be generated for such events as a fuel delivery, or dipstick reading. Typically, transactions are accumulated at your fuel management system at the site. You use a PC package, such as PC/Fuel or PC/Comm to poll or collect the transactions from the fuel management system.Copy them onto the PC, and process them according to the procedures of your organization.

Polled raw transactions are written to the PC database and stored as part of the RAWTRANS or RAWTRANS.DAT file. Transactions that occurred outside of your fuel sites or transactions from sites that could not be successfully polled by the PC may be entered manually through the PC package.

In PC/Fuel, when processing occurs, valid raw transactions are written to the database and processed and moved to a processed transaction file and various database files are updated with totals, etc. depending on the type of transaction.

Transactions that contain errors are not processed and remain in RAWTRANS until you correct them using the View/Edit/Delete Raw Fuel Transactions option. They can be processed at the next processing time. When error transactions are present, an error listing gets printed at the end of transaction processing.

Inventory Synchronization

The Inventory Synchronization function allows you to reconcile your book value with what is actually in the tank (volume). Book value is the amount of fuel presently on hand calculated from dispenser transactions or totalizer readings. The book value may be different from the value that was entered because of any deliveries, any volume changes resulting from processed dipstick or totalizer transactions and fueling transactions. Before you can perform an inventory synchronization, you must have an initial inventory (volume) in the tank.

If you have unprocessed raw transactions in the transaction file, you will not be permitted to perform an inventory synch. You must exit from the tank information forms and process your transactions first.

Lockout

Lockout is the process of preventing access to the fuel site. Each fuel site should already have a lockout type and format in place. There are two lockout formats: Bit-mapped and Limited.

With Bit-mapped lockout, lockout is typically by Card Number, but can be by some other user-specified ID field. With Limited lockout, lockout is by Entire Account, which is comprised of all your ID fields.

The fields used for lockout on the PC software match whatever is configured at your fuel site. Within each lockout format, there are two ways to set up the lockout file, positive lockout or negative lockout. With a positive lockout file, all cards, vehicle records, or keys at the site are locked out and the PC sends only the active numbers. With a negative lockout file, all cards, vehicle records, or keys at the site are made active and the PC sends only those numbers which are locked out.

PC/CFN handles lockouts as follows:
- The PC contains a master lockout file which contains the lockouts for every site. This file, when initially set up, should match the files at each of your fuel sites.
- The PC may also contain a lockout update file for each fuel site.
- All lockout changes must be done on the PC (using Files, Lockout or the Employee or Vehicle form lockout fields). Locking out at the fuel site will result in non-matching lockout files which can render lockouts ineffective.
- As you make additions or deletions to your master lockout file, the lockout update files are updated. This only occurs when the Lockout option is enabled and, when editing the master lockout file, you respond Yes when asked if you wish to update the site lockout files.
- When the Lockout Updates polling action is selected, the lockout update file is sent to the site, thus keeping the lockout file at the fuel site current with the PC's master lockout file.

The lockout update files on the PC are then cleared. If polling is unsuccessful, the lockout updates are not sent and remain on the PC until the next polling attempt (either at autopoll time, or at an unscheduled polling).

IMPORTANT INFORMATION
When setting up your fuel sites, lockout will only occur as described above, if the Lockout option is on. If the Lockout option is switched off, changes made to the master lockout file will not affect the site update files. This is not recommended.

Log Files

A polling log is a listing describing the outcome of a polling session. It contains messages for each site polled stating the date, time and number of transactions polled and the status of all polling actions. PC/CFN stores polling logs from the last seven polling sessions. These polling logs are named SESSION1.PLG through SESSION7.PLG. You can have the poll log from the current session print automatically by clicking on Send Polling Results to Printer on the Commlink, Setup/Enable Autopoll form or print polling logs later using the View Log Files option on the CommLink menu.

Each polling log contains date, time polling started, a list of error (status) codes, and the following:
  • **Site number** - number of the site polled.
  • **Description** - description of the site polled.
  • **Time polling started**
  • **Connect status** - contains OK if connection to site completed successfully or an error code if unsuccessful.
  • **Trans status** - contains OK if transaction polling completed successfully, an error code if unsuccessful, or dashes indicating that the action was not selected or was not executed.
  • **First Trans** - contains number of first transaction polled.
  • **Last Trans** - contains number of last transaction polled.
  • **Lockout Status** - contains OK if lockouts were sent successfully, an error code if unsuccessful, or dashes indicating that the action was not selected or was not executed.
  • **Lookup Status** - contains OK if lookup record updates completed successfully, an error code if unsuccessful, or dashes indicating that the action was not selected or was not executed.
  • **Cmds Status** - contains OK if site-specific or global commands completed successfully, an error code if unsuccessful, or dashes indicating that the action was not selected or was not executed.

Lookup Records

Lookup records are available when the Lookup program is used. The Lookup program is part of the Fleet options package of the Site Controller. The Lookup program lets you quickly set up accounts for customers using either codes (manually entered at the keypad), code cards, club cards, or bank cards. Under the Lookup program, you do not have to encode restrictions on the cards; restrictions and customer information are stored in a lookup record in the LOOKUP.DTA file on the site controller. PC/CFN allows you to upload or download an existing LOOKUP.DTA file.

Manifolded Tank

A manifolded tank is two tanks containing the same product joined together by a common pipe and used as a single source for dispensing fuel.

Polling (Autopolling, Unscheduled, Continuous)

Polling is the process by which the PC software contacts a fuel site and extracts the raw transactions from the fuel management system at the site. Other actions may also be performed at this time, such as updating lookup records, updating lockouts, and executing extra commands. There are three polling options available through the Gasboy PC software, namely autopolling, unscheduled polling, and continuous polling:

- Autopolling is the easiest and most automatic way to poll your sites on a regular basis. You can include all of your sites, or just selected sites. When you set up your Fuel Sites, each site that you wish to include in the autopolling process must have the Poll Flag field set to YES. You can set the PC software to autopoll every hour or set up to four times each day when the PC will automatically attempt to perform selected polling actions. You select the actions you wish to run for each polling time. If connection cannot be established with a site, PC/CFN continues polling other sites and then makes two more attempts to re-poll the site. If an error occurs during any polling action, the connection is terminated and no further actions are performed for that site. Upon completion, a polling log is generated.
- Unscheduled polling is a manual polling option that allows you to poll one or more sites at any time (on demand). Because autopolling is performed only on sites where the Poll Flag is set to YES, if you wish to poll other fuel sites (or even one typically scheduled for autopolling), you would use unscheduled polling. The available polling actions are identical to those you can select under autopolling.
- Continuous polling allows you to poll a single site continuously for transactions only; no other polling actions are allowed.

RAWTRANS

When transactions are polled from your fuel sites, they are stored directly to the database. Each time you generate a RAWTRANS file it serves as a snapshot of the raw transactions in the PC database at the time of generation. You decide when your file will be generated, which format you are using, which transactions to include and where the file will be stored on your PC by selecting settings on the Default Communication Parameters menu.

When Poll Transactions is selected as a polling action either for autopoll, unscheduled poll, or continuous poll, you can choose to have the file generated automatically at the end of polling. If you don't choose this, the only way to generate a raw transaction file is to use the Gen Retrains button on the Utilities form.

When you perform any operation affecting transactions, you alter transactions in the database but not in the RAWTRANS file that you have generated. If you use automatic file generation, you'll get an updated RAWTRANS file each time you poll or you can re-run the Gen RAWTRANS utility from the Utility form. NOTE: Raw transactions are not automatically purged from the PC database after the RAWTRANS file is generated.

Your raw fuel transaction file may be in one of three formats: standard Windows format (your file is named RAWTRANS.DAT) or one of two DOS-style formats, V4.992 and above, or below V4.992 (Your file is named RAWTRANS).

If you currently have a DOS PC/Comm or PC/Fuel version, you may want to select one of the DOS formats to match the RAWTRANS file currently in use. This will ensure that the file will be in the correct format for any other application you may be using. The DOS PC/Comm or PC/Fuel version that you are currently running is listed on the Gasboy banner screen as you enter the package. Standard windows format is viewable using the Reports menu, **RAWTRANS Layout** option. RAWTRANS data from PC software versions above 4.992 contains account field data followed by additional data. RAWTRANS data from PC software versions below 4.992 contains the account field data as the last field.

Transactions to Include allows you to specify what you want to include in the RAWTRANS file. **All Transactions** will include all raw (unprocessed) transactions currently in the PC database. Latest Polling Session will include those from the **latest polling session** only.

Tank Table

Tank tables are used to provide gallon equivalents for the inch measurements that are obtained from a stick reading. Because each tank size and shape are different, there is no set formula for determining this, so you must rely on tank dimensional data provided by the manufacturer to build a tank table. A tank table consists of data pairs, which enable the system to determine the product volume within the tank. These data pairs represent the level of the product (in inches) and the quantity (gallons) present at that level. For example, a reading of 19 inches might equate to 1424 gallons. In this case, that data pair would be 19 and 1424. When entering data into the table, for level 19 you would enter a quantity of 1424. The manufacturer or supplier of your tank can supply you with tank data, which you can enter manually or import from a data file. A tank table calculation program is available from the Steel Tank Institute web site (http://www.steeltank.com). This program generates an ASCII file which you can import into the PC software using Admin, Fuel Tank Tables, Import Tank Tables.

Overview of Tank Inventory Management

The PC/CFN software, when run as PC/Fuel, enables you to monitor your tank inventory. The quality of your output however, depends upon your input. The traditional method of tank inventory management involves manual sticking of your tanks to measure product, matching the reading up to a printed tank table or manually calculating inches to gallons, and recording it according to your site's record keeping procedures. Then later, you must perform reconciliations comparing book inventory to actual. PC/CFN makes this process easier by automating some of the tasks involved.

What Does Your Fueling Operation Look Like?

The first thing the PC software needs to know is what your fueling operation looks like? What size tanks do you have, how many do you have, what product is in each tank? You define this information using different forms. Use the Setup menu, Administration, Fuel Tank Tables form to define a name and tank table data for each tank type at each of your sites. If all your tanks are identical, you need only one tank table; if they are different, each unique tank must have its own table. A tank table contains an inches to gallons conversion for the tank (This conversion is used for dipstick readings entered in inches). Tank tables are typically available from the manufacturer or you can use a tank table calculation program (one is available on the Steel Tank Institute website: http://www.steeltank.com) to generate your own. This tank table can then be imported into the PC software (Administration, Fuel Tank Tables, Import Tank Table). Use the Files, Tanks form to define individual tank information. Some things you need to include are tank number, tank table assignment, capacity, reorder level, tilt offset (see Calculating Your Tank Tilt Offset later in this section) and whether the tank is manifolded. In addition, you must supply the product that is in the tank, the pumps that draw from that tank, and the initial inventory reading (stick reading).

How Will the Data be Input?

There are several ways that your fuel inventory can be monitored and you can select the way that best suits your application. You must decide how the information will get into the PC software. This tells the software how to typically expect data. This data is input for each site. Presently, you are not limited to the choice you make, for example, if you select stick reading at PC, you can still use dipstick transactions or vice versa. There are slight processing variations based on some of your choices, but mostly these choices are informational. Your input choices on the Files, Fuel Sites, Tank Inventory Configuration tab are:

Tank reading source: This tells the PC software whether your tank readings will come from a dipstick transaction or a manual entry on the Enter Stick Reading portion of the Tank Information tab. A dipstick transaction occurs when you take a dipstick reading and enter the data into the fuel management system using a dipstick card or key (or a manually entered dipstick transaction). The other choice allows you to take the dipstick reading and enter the data at the PC using the Files, Tanks, Enter Stick Reading form.

Fuel pumped source: This tells the PC software how to calculate your book inventory. The usual method is by processing fueling transactions and subtracting their quantity. Another method is by reading the accumulating totalizers on the pump and inputting those readings into the PC software either by a totalizer transaction or making a totalizer entry on the Files, Tanks, Enter Totalizer form. A totalizer transaction occurs when you take a totalizer reading

and enter the data into the fuel management system using a totalizer card or key (or a manually entered transaction).

Fuel delivery source: This tells the PC software whether to update book inventory based on a delivery entry at the PC on the Enter Delivery form or a delivery transaction. A delivery transaction occurs when a delivery is made at the site and the data is entered into the fuel management system using a delivery card or key (or a manually entered totalizer transaction).

Dipstick entry: This tells the PC software the unit of measure you are using for dipstick readings: inches or gallons. If you are entering dipstick readings in inches, you must enter a tank table to convert inches to gallons.

How is the Data Processed?

Once this information is entered, you can begin using the PC software to monitor your inventory. Some scenarios:

- Stick your tank and input the stick reading using the method of your choice. (If you input the reading using the Files, Tanks, Enter Stick Reading form, the volume for your stick reading will be shown immediately. If you use a dipstick transaction, the volume reading will not be adjusted until transactions are processed.)
- Transactions are processed. Different information within the PC database is updated based on the type of transactions processed.
- If your Fuel Pumped Source is set to use totalizers (on the Fuel Sites, Tank Inventory Configuration form) and your input is entered using the Files, Tanks, Enter Totalizer form or by a totalizer transaction at the site, book value is updated when transactions are processed. If your Fuel Pumped Source (on the Fuel Sites, Tank Inventory Configuration form) was configured for Normal Fuel transaction), totalizer transactions or entries on the Files, Tanks, Enter Totalizer form do not update the book inventory.
- A fuel delivery is received. A delivery transaction is entered at the fuel management system or a fuel delivery is entered at the PC on the Files, Tanks, Enter Delivery form. Book inventory is updated when entries are posted or transactions are processed. Tank volume is not updated until the next dipstick reading/transaction is posted or processed.
- Reordering fuel. When the Reorder field of the Tank Data Summary on the Tank Information form shows reorder, you must place an order for fuel. Use your site's established procedures for placing a fuel order, then complete the Fuel Order Information tab (Files, Tanks, Fuel Order Information) to provide a reference for the order.

How Report Data is Accumulated

As transactions are processed and data is entered into the PC, report data is accumulated. The following reports provide data from your inventory management functions:

Site Inventory

This report details your fueling operation by providing a snapshot of tank status at the time the report is printed or displayed. It is useful in determining when reorder is necessary. It can be run as often as needed according to your site's procedures. It contains the following fields: site number and name, tank, product, type, capacity, ullage volume, reorder level, volume, level, water level, inventory date and time, fuel ordered, order placed by, and reorder status.

Site Reconciliation

This report shows a day-by-day breakdown of actual fuel vs. calculated book value and provides a means to spot potential discrepancies in the fueling operation. It is based on dipstick transactions or manual entry of dipstick readings. These readings should be taken following your site's established procedures. This report contains the following fields: site number and name, tank and product, date and time of each stick transaction/reading, the starting level, volume and water level, gallons pumped, gallons delivered, inventory balance, the ending level, volume and water level, the gallons over or under, and a calculated leak threshold.

Note: This report has been formatted to match the EPA Inventory control method for leak detection. It should be run once per day to conform to EPA procedures. Check your local and federal regulations to determine if this method is an acceptable form of leak detection for your sites.

Tank Synchronization

This report details each time a tank synchronization occurs. For accurate results, this report should be run after transaction processing and before purging transactions. It contains the following fields: site number and name, date, time, tank, book balance, fuel volume, variance, gallons pumped since last synchronization, leak tolerance, and tolerance results.

Meter Reconciliation

This report details a comparison of the actual pump/dispenser totalizer reading to the gallons pumped as recorded by processed fuel transactions. It should be run as needed according to your site's procedures. It contains the following fields: site number and name, pump, product, date and time of totalizer reading, totalizer reading, gallons pumped by totalizer and transaction and any variance.

Calculating Your Tank Tilt Offset

Due to installation or ground settling, the underground storage tank may be tilted. This could result in inaccurate inventory volume readings. You must measure for tank tilt so that an Offset can be entered for each tank on the Tank Information Form. Use the following figure and formula to determine your tank's offset (tilt) factor.
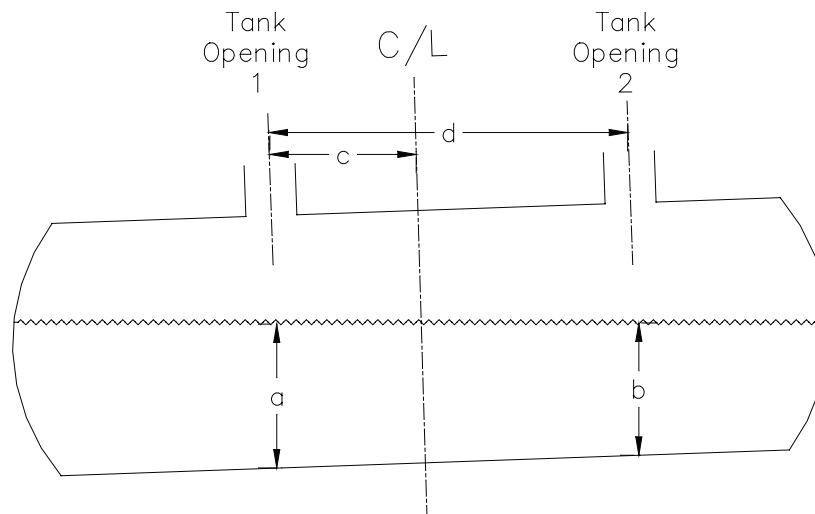
1 Using a dipstick, measure the product level at Tank Opening 1 (a)

2 Using a dipstick, measure the product level at Tank Opening 2 (b).

3 If a=b, the Offset is 0 and no further calculations are needed.

4 Measure the distance between Tank Opening 1 and the tank center line (c).

5 Measure the distance between Tank Opening 1 and Tank Opening 2 (d).

6 Calculate the offset using the following formula:

$$\text{OFFSET} = \frac{c}{d}(a\text{-}b)$$

If You are Running PC/COMM

1   Explore the package. Select the icons on the Main Page (Setup, Files, Reports, CommLink, Trans, and Utilities) and familiarize yourself with what each one does. Each Main Page icon brings up a menu containing functions that you can perform. Each menu item brings up a form that you can use to define your application or perform operations on your data. Each form has a Help button which displays Help screens pertaining to the form or topic displayed. If you get into an area of the package, from which you cannot proceed, click the Help button for more information.

2   Go to the Files/Fuel Sites form and verify that all your fuel site information is correct. If it is not, make any changes at this time.

3   If you intend to use autopolling, display the CommLink Setup/Enable Autopoll form and select your options.

4   Go to the Files/Lockouts form to enter any lockout information updates you wish to send to your sites.

5   Go to the CommLink/Contact Site form and make sure that you can successfully contact all your fuel sites.

6   Once you begin using your PC/CFN package on a regular basis we strongly recommend that you set up a schedule for performing regular backups of your PC/CFN data. Backups can be performed from the Utilities form and also when you exit the PC/CFN software.

If you are Running PC/FUEL

General

• Explore the package. Select the icons on the Main Page (Setup, Files, Reports, CommLink, Trans, and Utilities) and familiarize yourself with what each one does. Each Main Page icon brings up a menu containing functions that you can perform. Each menu brings up a form that you can use to define your application or perform operations on your data. Each form has a Help button which displays Help screens pertaining to the form or topic displayed. If you get into an area of the package where you feel that you do not know how to proceed, click the Help button for more information.

• If you did not convert data from an existing PC/Fuel DOS package, you will need to set up additional information about how you intend to use this package before proceeding further. This information should be entered on the named forms in the order listed in the following table:

Selection Sequence	Enter
Setup/Administration/ Product Types	Product types
Setup/Administration/ Vehicle Types	Vehicle types
Setup/Administration/ Vehicle Specifications	Vehicle specifications
Setup/Administration/ Vehicle Parts	Vehicle parts information
Setup/Administration/ Fuel Tank Tables	Tank table data for inches to gallons conversions when using dipstick transactions
Files/Tanks	Tank, pump, product assignments, and inventory for your fuel site tanks
Files/Department	Department information into the department file
Files/Vehicle	Identifying data about each vehicle in your system
Files/Employee	Identifying data about each employee that uses your system

- If you intend to use autopolling, display the CommLink Setup/Enable Autopoll form and select your options.
- Go to the CommLink/Contact Site form and make sure that you can successfully contact all your fuel sites.
- Follow regular daily, periodic and year-end procedures as suggested in the tables given in "Recommended Daily Sequence" on page 20.

Recommended Daily Sequence

The following table suggests a sequence of events that should be done on a daily basis. Your actual site procedures may differ.

Selection Sequence	Task
CommLink/View Log Files	Check the appropriate polling log file to make sure that all fuel sites which were setup to be autopolled were successfully polled
CommLink/ Unscheduled Polling	Perform manual polling of those fuel sites that were unsuccessfully autopolled or not polled at all.
CommLink/Contact Site	Perform fuel site maintenance (price updates, etc.)
CommLink View/Edit/ Del Raw Fuel Trans	Enter any transactions that occurred outside your fuel site network.
Utilities/Backup	Perform a Backup of your package data
Reports/Standard/ Unprocessed Fuel Transactions	View/print a list of the polled transactions.
CommLink View/Edit/ Del Raw Fuel Trans	Edit/correct any fuel transactions which have errors.
CommLink/Process Transactions	Process the polled raw transactions
CommLink View/Edit/ Del Raw Fuel Trans	Check the database for any transactions that were not processed. If any are present, correct the error before attempting to re-process these transactions.
Reports/Standard	View/print any reports of interest according to your site's established procedures.

Recommended Tank Inventory Management

The following tank inventory functions may be performed according to your site's established procedures:

Sticking the Tank - Recommended Interval, Once a Day

1   Ensure that no one is pumping. Block off island, if necessary.

2   Stick the tanks and record the level information. If you are entering data at the PC, be sure to note date/time and skip to Step 4.

3   Insert the dipstick card/key into the fuel management system and enter the data.

4   Resume fueling at the site.

5   Enter the data at the PC if not using dipstick card/key (Files, Tanks, Enter Stick Reading).

Delivery - Recommended Interval (as needed)

1   Delivery is made to the tank(s).

2   Delivery person provides a receipt with the volume delivered, date, and time. Skip to Step 4 if entering delivery information at the PC.

3   Insert the delivery card/key into the fuel management system and enter the data.

4   Enter delivery data at the PC (Files, Tanks, Enter Delivery)

Totalizer - Recommended Interval, Once a Day

1   Ensure that no one is pumping. Block off island if necessary.

2   Read the totalizers for each pump. If you are entering data at the PC, take a note of date/time.

3   Stick the tanks and record the level information. If you are entering data at the PC, take a note of date/time, and skip to Step 6.

4   Insert the totalizer card/key into the fuel management system and enter the data.

5   Insert the dipstick card/key into the fuel management system and enter the data.

6   Resume fueling at the site.

7   Enter the data at the PC if not using totalizer or dipstick card/key (Files, Tanks, Enter Totalizer and Files, Tanks, Enter Stick Reading).

Recommended Periodic Sequence

The following table suggests a recommended periodic sequence of operations for your PC/Fuel package. PC/Fuel data is stored and accumulated in the package database. This database will contain data from the day you start using your system. Many system owners may wish to retain only set amounts of transaction data, such as a month's worth or maybe a year's worth. Once you decide how much transaction data you wish to retain, you can establish a routine for purging transactions from the database. If you choose to retain transaction data for a month, you can purge transactions at the beginning of a new month. If you choose to retain transaction data for a year, you can wait until 13 months of transaction data have accumulated and at the end of each month thereafter, purge transaction data for the oldest month.

Selection Sequence	Task
Varies (see previous table)	Perform your daily sequence.
Reports/Standard/ selection	Print any or all of the available reports.
Utilities/Backup	Back up your package data.
Trans/Processed Trans Utilities	Purge the fuel reporting transaction file according to your established schedule.

Recommended Year-End Sequence

This section suggests a year-end processing sequence. Your actual year-end processing operation may differ.

The PC/Fuel package will retain year to date totals for your departments, vehicles and employees. Depending upon your needs, you may wish to clear these totals on a regular basis (for annual, semi-annual reporting, etc.) or may not want to clear them at all, thus retaining lifetime totals. To clear these totals, go to the Trans/Processed Transaction Utilities form and select Purge Accumulated Totals. Then select which year to date totals you wish to clear.

Once you begin using your PC/CFN package on a regular basis we highly recommend that you set up a schedule for performing regular backups of your PC/CFN data.

RAWTRANS Layout

Length	Starting Column	Type	CFN Tran Field	Description
1	1	N	✔	System Type
6	2	N	✔	Site ID Number
6	8	N	✔	Transaction Number
4	14	N	✔	CFN Sequence Number, from Site Controller
1	18	N	✔	CFN Status Code
8	19	N	✔	Total Price in Hundredths
1	27	N	✔	CFN Account to Charge
1	28	N	✔	Transaction Type
2	29	N	✔	Product Code
4	31	N	✔	Unit Price in Thousandths
8	35	N	✔	Quantity in Thousandths (See Note 1)
8	43	N		Hours in Tenths
8	51	N	✔	Odometer in Tenths (See Note 2)
2	59	N	✔	Pump Number (See Note 3)
8	61	N	✔	Date (YYYYMMDD)
4	69	N	✔	Time (HHMM)
2	73	N	✔	Error Code
6	75	A	✔	CFN Authorization Number
6	81	N		Series 1000 Card Number
6	87	N		Key 1/VM
6	93	N		Key 2
2	99	N	✔	Account Field Length

Length	Starting Column	Type	CFN Tran Field	Description
30	101	A	✓	User Defined ID Fields
20	131	N	✓	Manual Entry Number
1	151	A	✓	CFN Device Type
1	152	A	✓	CFN Device Drop
1	153	N	✓	CFN # of Digits After Quantity Decimal Point
1	154	N	✓	CFN Kind of Transaction
20	155	N	✓	CFN Issuer Field
4	175	A	✓	CFN Expiration Date
4	179	N	✓	CFN Physical Record Number
4	183	N		MPG in Tenths
4	187	N		Miles Traveled
5	191	N		TopKAT Vehicle Number
4	196	N		TopKAT Vehicle Department Number
4	200	N		TopKAT Manual Entry Department Number
1	204	N		TopKAT Pulse Rate
2	205	N		TopKAT Tank Number
6	207	N		TopKAT Cum. Vehicle Quantity in Tenths
6	213	N		TopKAT Cum. Manual Entry Quantity in Tenths
20	219	N		Future Expansion

Note: The RAWTRANS layout for PC/CFN will contain valid values only in the fields with the tick marks. The other fields (without the tick marks) will contain zeros.

Note: For a normal fuel transaction or a delivery transaction, Quantity in Thousandths is true. For a dipstick or a dipstick + water transaction, the decimal portion of the field is in 8ths. For a totalizer transaction, the totalizer reading is shown with the decimal portion of the field in tenths.

Note: For a normal fuel transaction, Odometer in Tenths is true. For a dipstick+water transaction, the decimal portion of the field containing water reading is in 8ths.

Note: For a normal fuel transaction or a totalizer transaction, the Pump Number field contains pump number. For a dipstick, dipstick+water, or totalizer transaction, this field contains tank number