USER'S MANUAL

LBase PC Toolbox

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INTRODUCTION

This publication is provided primarily as a guide for individuals who have a programming background using LBase and a 9360 programmable keyboard.

The 9360 Programmer's Manual should be used in conjunction with this manual.

CONTENTS

INTRODUCTION

Welcome to the LBase PC Toolbox. The LBase PC Toolbox enables LBase programmers the ability to develop 9360 systems using an IBM PC (or 100% compatible). The Toolbox also provides an easy solution to backing up systems once they have been completed.

The Toolbox uses a 'System' design concept. That is, all editing done (programs, devices, literals, user data and tables) will be for a particular system. In most cases the 'system' will be for a particular customer. When all editing has been completed the system will be built into a file that can be downloaded to the 9360. As the file is built, the programs used are compiled in the same manner as on the 9360. Therefore, all compile errors can be omitted prior to downloading to the 9360.

Programs, table setups, device setups, user data, registers used and literals can be displayed on the screen or listed to a printer.

Program lines can be commented. These comments will be displayed and listed with the program but will not be downloaded to the 9360.

Editing programs, device and table setups is done in the same manner as the 9360. Literals can be edited while editing program lines. The program line editor checks syntax as the line is entered. In most cases, if a mistake is made, the editor will display what is needed.

The Toolbox can be used to backup user table data.

A terminal emulator mode is provided which can be used as the CONSOLE device on the 9360.

The toolbox can use either COM1 or COM2 ports at selectable baud rates and parity.

SYSTEM REQUIREMENTS

IBM PC/XT/AT/PS2 or 100% Compatible

PC/MS DOS Version 2.0 or higher

384K ram or more

One 3 1/2" or 5 1/4" Floppy drive and/or Hard drive

COM1 or COM2 serial port (see appendix A for connection)

INSTALLATION

FLOPPY DISK

The Toolbox can be run without a formal installation procedure. If your PC has been booted to the DOS level with A> as the prompt, the following commands can be used with the PC/EDT diskette in drive A.

```
A>LBASEC  (for use with color monitors)
          or
A>LBASEM  (for use with monochrome monitors)
```

HARD DISK

The following is a sample installation of the Toolbox onto a hard disk system. In this example is it assumed that the hard disk is drive C: and that the Toolbox disk is in drive A.

```
A>  C: ; Make the current drive C drive.

C>  CD\ ; Make the root directory the current directory.

C>  MD LBASE ; Create the subdirectory LBASE.

C>  CD \LBASE ; Make LBASE the current directory.

C>  COPY A:LBASEC.EXE ; Copies color version of the Toolbox.
                  or
C>  COPY A:LBASEM.EXE ; Copies monochrome version of the Toolbox.
```

The following PATH command should be added to your autoexec.bat file to cause DOS to look at the LBASE directory for files to execute.

If no PATH command exists in your autoexec.bat file add the following command.

```
PATH C:\LBASE
```

If a PATH command already exists, append the LBASE directory to the existing directories as follows:

```
PATH  C:\,C:\DOS  ;old path

PATH  C:\,C:\DOS,C:\LBASE
```

The following lines must be in the CONFIG.SYS file on the boot disk drive.

```
FILES=20
BUFFERS=20
```

OVERVIEW

As noted under the Introduction the LBase PC Toolbox uses a 'system' design concept. The first thing a user should do is to create a system name. This name can be up to 8 of the characters (A-Z, 0-9). The system name might be the customers name, a part number, or anything that will distinguish it from any other system. It is recommended that all development for a particular system be done in a unique directory. The Toolbox provides the ability to create and change directories.

Once the system name has been established, program, device, table and literal editing can be performed. Device editing will create the following two files <systemname>.DEV and <systemname>.DDX. Table editing will create the following two files <systemname>.TAB and <systemname>.TDX. Program editing will create the following two files <programname>.PRG and <programname>.PDX. Literal editing will create the following two files <systemname>.LIT and <systemname>.LDX. The first of each of these files is the data file and the second is an index file for the data file. It is important that these files only be created, modified or deleted under the LBase toolbox. Manipulation of these files via DOS or any other program can result in unpredictable data.

Once all programs have been written for a system, devices and tables have been setup, and literals have been defined the files are combined to form one file that can be downloaded to the 9360. This function is the BUILD function. The file that is created is called <systemname>.SYS. This file consists of literals, table and device setups, main program (selected by user during build), any programs called by main program and any other programs selected by the user. The .SYS file is the only file needed for backup of the system. Once the final version of the system is complete and a build has been done the rest of the files can be deleted. This is accomplished by using the delete programs, and delete system functions. If at a later time a system needs to be modified, the Unpack function (under Misc.) can be used to split the .SYS file into device, table, literal, and program files.

A .SYS file is created when a system is restored from the 9360. When the restore is complete the .SYS file is automatically split into device, table, literal, and program files. Programs restored from the 9360 will have no comments since the 9360 itself does not support comments. Therefore, if a program is edited on the PC with comments, downloaded to the 9360, modified using the 9360 editor, then restored to the PC all comments will be lost.

Another file created by the Toolbox is the <systemname>.DAT file. This file is created when the 'restore data' function is used. This function is used for backup of 9360 user table data. User Table data can be edited to modify, add or delete records.

RUNNING THE TOOLBOX

To run the LBase PC Toolbox the screen should be displaying the DOS prompt.

Type:

LBASEC (press ENTER) ..... for color version

or

LBASEM (press ENTER) ..... for monochrome version

The screen will display the log on message. Press anykey to continue.

The main menu screen will now be displayed as follows:

PC Toolbox - System in use: not defined

```
+-------------------------------------------------------------------------+
| System   Edit   Delete   Build   List  Transfer   Console   Misc   Quit |
+-------------------------------------------------------------------------+
```

There are nine options to choose from. To make a selection press the first letter of the option or use the right arrow and left arrow keys until the option wanted is highlighted then press <ENTER>. The Edit, Delete, Build and List options require a system name to be defined. If one of these options is selected and a system name has not been defined the following error message will be displayed.

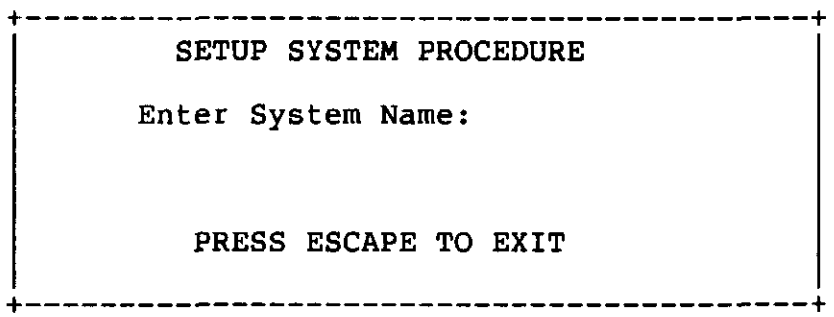
System Name has not been defined; Press anykey to continue

Selecting the Quit option will return the system to the DOS prompt.

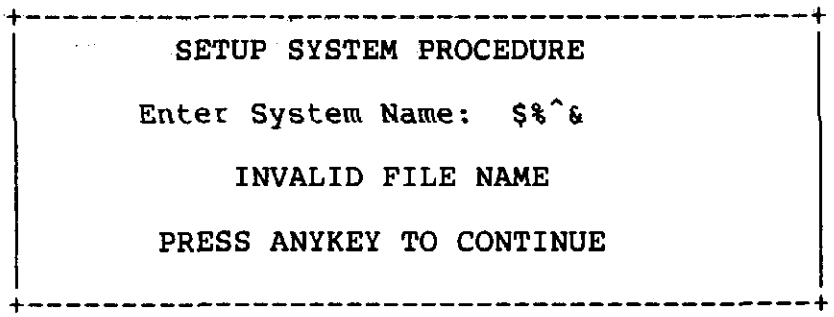
The following sections will describe each option and their associated suboptions in detail.

SYSTEM SETUP

This option allows the user to set up a system name. The following will be displayed:



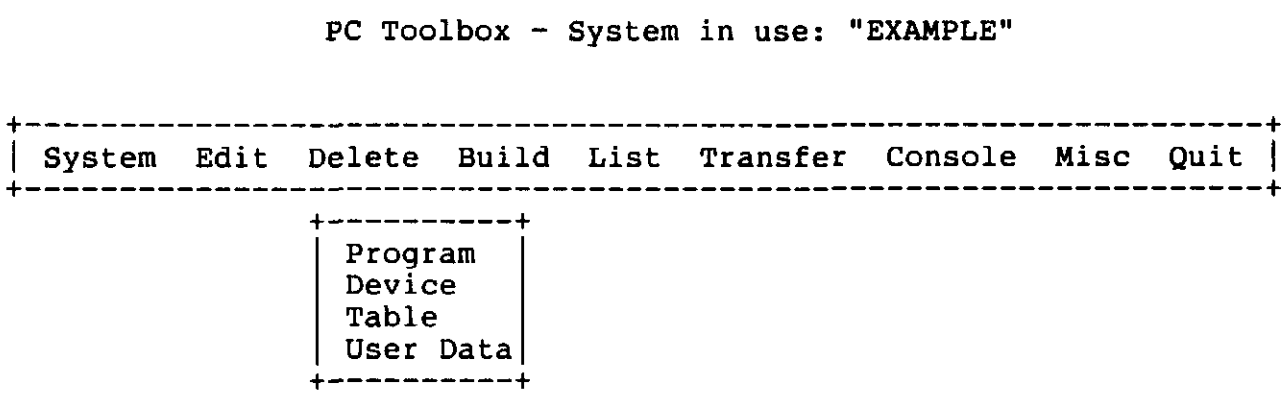
The system name can consist of up to eight (8) of the characters A-Z, or 0-9. If any other characters are used in the system name the following will be displayed:



Once the system name has been defined, all further editing, deleting, listing, and building will be done using this system.

EDIT

The Edit option allows the programmer to create and modify programs, user table data, literals, device and table setups. When this option is selected the screen will show the following:

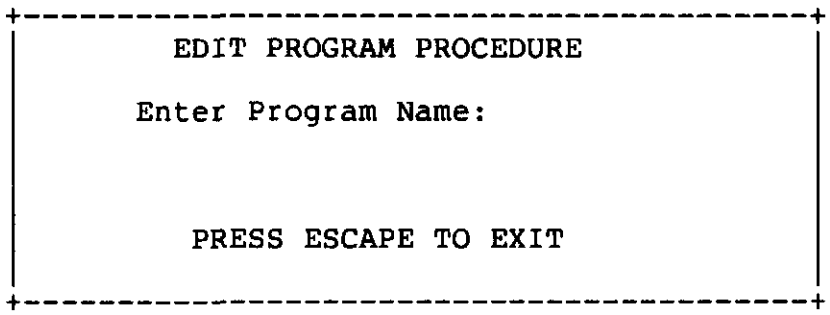


Four suboptions are available, Program, Device, Table, and User Data. To Select an option press the first letter of the option or use the arrow keys to Highlight the option and press <ENTER>. The following is a description of each option.

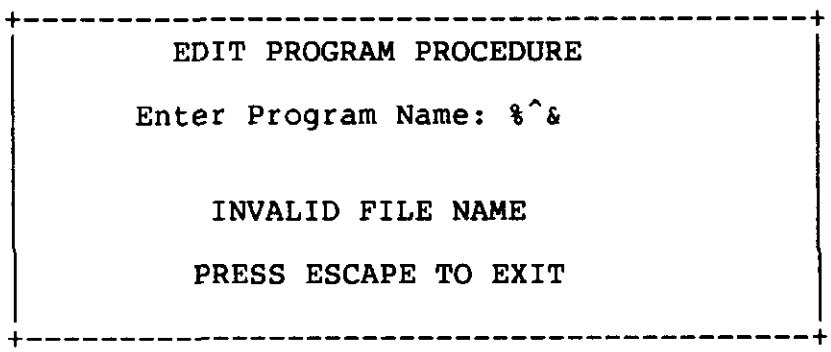
NOTE: The system in use is named "EXAMPLE".

EDIT PROGRAM

The edit program function is used for creating and modifying LBase programs. Literals for the system are also edited under this function. The user will be prompted for a program name as follows:



The program name entered will be the name used for the program when it is downloaded to the 9360. The program name can be up to five (5) of the characters A-Z, 0-9. If any other character is used the following will be displayed:



If the program name does not exist the two files <programname>.PRG and <programname>.PDX are created. If the program does exist the first 17 lines and first 17 literals are displayed as follows:

EDIT PROGRAM FOR SYSTEM "EXAMPLE"

```
Program Name: MAIN                         Literal Definitions
+-------------------------------+  +------------------------------------+
|  10 A T                       |  | J1=1                               |
|    ;Time and Date Entry       |  | J2=2                               |
|  20 A D                       |  | J3=3                               |
|  30 Z S0 S1 S2 S3             |  | J4=4                               |
|  40 Z S4 S6 S9 SA             |  | J5=5                               |
|  50 Z S5 N0 N1 N2             |  | J6=6                               |
|  60 Z N3 N4 NA                |  | J7=79                              |
|  70 A X0 N0,1                 |  | X0=SCALE 4-6?                      |
|  80 I FK=F2 J 10              |  | X1=TRACTOR ID?                     |
|  90 C RDSCL                   |  | X2=TRAILER ID?                     |
|    ;Read Scale                |  | X3=FILLER ID?                      |
|  100 I N1=J1 J 30             |  | X4=DRIVER ID?                      |
|  110 A X1 S0,4                |  | X5=PRODUCT ID?                     |
|  120 A X2 S1,5                |  | X6=PRINT Y/N?                      |
|  130 A X3 S2,2                |  | X7=LB                              |
|  140 A X4 S3,2                |  | X8=KG                              |
|  150 A X5 S4,1                |  | X9=Y                               |
+-------------------------------+  +------------------------------------+
```

The screen will show "Viewing program". This tells the user that the program window is active. The next page of program lines can be viewed by pressing the Page-Down key. The previous page of the program can be viewed by pressing the Page-Up key. The program lines can be scrolled up and down by using the UpArrow and DownArrow keys. To view literals press the Right-Arrow key. The screen will show "Viewing literals". Press the Left-Arrow key to return to viewing program lines.

To modify or add a program line enter the line number followed by the instruction. Once the instruction has been entered a comment can be added to the line by pressing the semicolon (;) key. A 30 character comment can now be entered. To store the line press <ENTER>.
The screen will be updated with the new line contents. (See the 9360 Programmers's Manual for program line syntax).

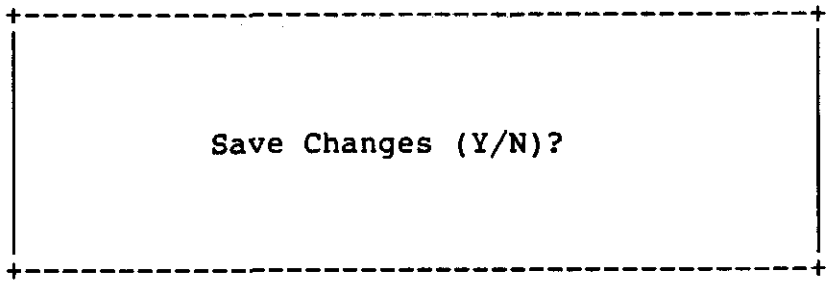
To add a comment to an existing program line enter 'C' followed by the line number. After the line number press the semicolon (;) key and then enter the comment. Press <ENTER> to have the comment added to the program line.

To delete a line of the program enter 'D' followed by the line number and then press <ENTER>. To delete a group of lines enter 'D', first line number, a dash (-), and then the second line number followed by <ENTER>. The first line number must exist for the delete operation to execute.

To modify, delete, or add a literal enter the name of the literal (i.e. X1). If the literal is already being used the contents will be shown after the literal name. To leave the literal as is press <ENTER>. To delete the literal press <BACKSPACE> followed by <ENTER>. The contents of the literal can be modified by entering the new contents followed by <ENTER>. If <ESCAPE> is pressed while editing a literal the new literal contents will not be stored. Control characters are entered in the same manner as in the CONSOLE mode on the 9360. (See Appendix B of the 9360 programmer's manual for a description on how to enter control characters.)

To renumber the program press <R> followed by <ENTER>. If there are less than 100 lines in the program it will be renumbered by increments of 10. If there are more than 99 lines but less than 200 the program will be renumbered by increments of 5. If there are more than 199 lines but less than 500 the program will be renumbered by increments of 2. If there are more than 500 lines in the program no renumbering will be done. (The 8K version of the 9360 may only have 400 program lines.)

To exit the edit function press <ESCAPE>. The screen will show the following:



To save all changes made to program lines and literals press <Y>. To leave the program lines and literals the way they were before editing press <N>. If there are no program lines in the program the two files <programname>.PRG and <programname>.PDX will be deleted.

EDIT DEVICE

The edit device function is used for creating and modifying device setups for system <systemname>. The user will be prompted for a device number as follows:

```
+-----------------------------------------+
|          EDIT DEVICE PROCEDURE          |
|                                         |
|      Enter Device Number (1-8):         |
|                                         |
|          PRESS ESCAPE TO EXIT           |
+-----------------------------------------+
```

Editing a device is performed in the same manner as on the 9360 programmable keyboard. (See 9360 Programmer's Manual for edit device procedures.) The user will be prompted for information on the device. The UpArrow key will return to the previous prompt. If <ESCAPE> is pressed during the prompting the old device setup will not be changed.

The only difference between editing a device using the 9360 and using the Toolbox is if a beginning sequence (BS) or ending sequence (ES) is specified. If a literal name is specified for either of these sequences the user will be prompted for the contents of the literal.

The following screen is an example of how device editing will look:

```
    EDIT DEVICE 1 FOR SYSTEM "EXAMPLE"
+-----------------------------------------+
|                                         |
| DEVCE TYPE:  I                          |
| XON/XOFF?   N                           |
| TERMINATION: ^M                         |
| EXTRA TERMINATOR?   N                   |
| HARDWARE SETUP:   232                   |
| CHANNEL (1,2,3,4):  1                   |
| BAUD RATE:   9600                       |
| PARITY:   N                             |
|                                         |
|                                         |
|                                         |
+-----------------------------------------+
```

EDIT TABLE

The edit table function is used for creating and modifying table setups for system <systemname>. The user will be prompted for a table number as follows:

```
+-----------------------------------------+
|          EDIT TABLE PROCEDURE           |
|                                         |
|       Enter Table Number (1-5):         |
|                                         |
|         PRESS ESCAPE TO EXIT            |
+-----------------------------------------+
```

Editing a table is performed in the same manner as on the 9360 programmable keyboard except that register definitions are all entered on the same line. (See 9360 Programmer's Manual for edit table procedures.) The user will first be prompted for table registers and then for number of records. The prompt will show how many records are available. If <ESCAPE> is pressed during the prompting the old table setup will not be changed.

The following screen is an example of how table editing will look:

EDIT TABLE 1 FOR SYSTEM "EXAMPLE"

```
+-----------------------------------------------------------+
|                                                           |
|   Old Regs = SA,4 SB,3 SC,2                               |
|   Regs?  SA,3 SD,5 SB,12 NB,1 SE,1                        |
|   Records: (302)  150                                     |
|                                                           |
|                                                           |
+-----------------------------------------------------------+
```

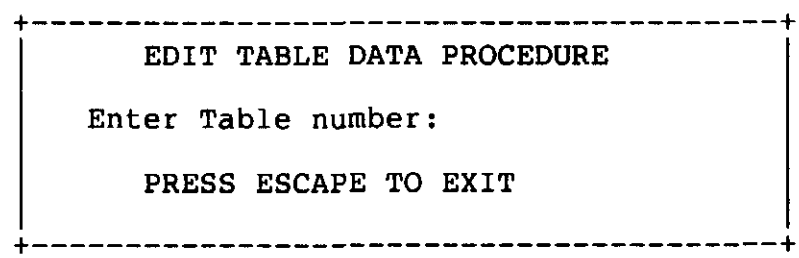
EDIT USER TABLE DATA

The edit user table data function is used for editing user data for system <systemname>. This function allows the user to add records, delete records, and modify records in a table. The edit function will use the ".DAT" file if it exists. If the ".DAT" file does not exist the edit function will use the system table setup file ".TAB" and create a ".DAT" file when complete. If neither a ".DAT" file or ".TAB" file exist, the error message "No table setup for this system" will be displayed. If both files exist and the table setup for the system is different than the table setup in the ".DAT" file the following error message will be displayed:

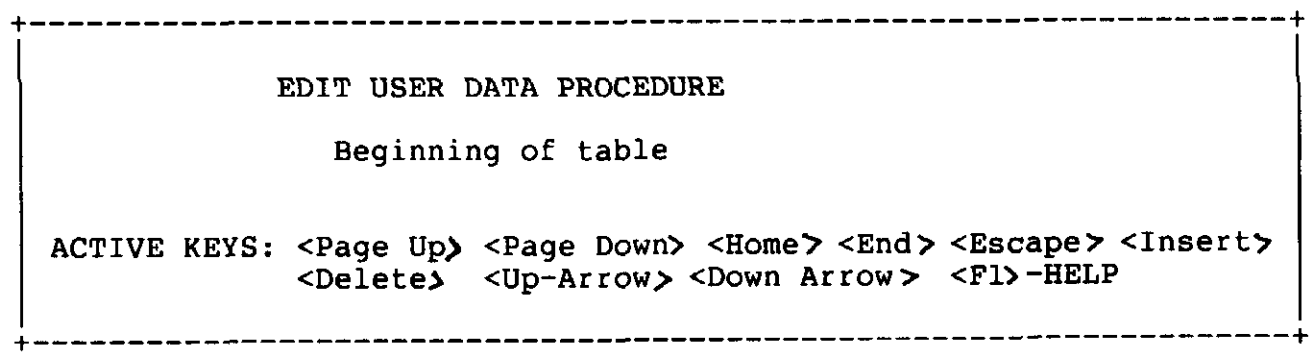
```
Table Data does not match table setup format.
Continuing will cause all data to be erased!
Are you sure you want to continue (Y/N)?
```

Pressing <N> will return the program to the main menu display.
Pressing <Y> will cause all user data to be cleared.

If a table setup exists then the user will be prompted for a table number as follows:



The user should enter the number of the table that records are to be modified, added, or deleted. If there is no setup for the table number entered the error message "No Setup for this Table" will be displayed. If there is a setup for this table the table editor will be installed and the following will be displayed:



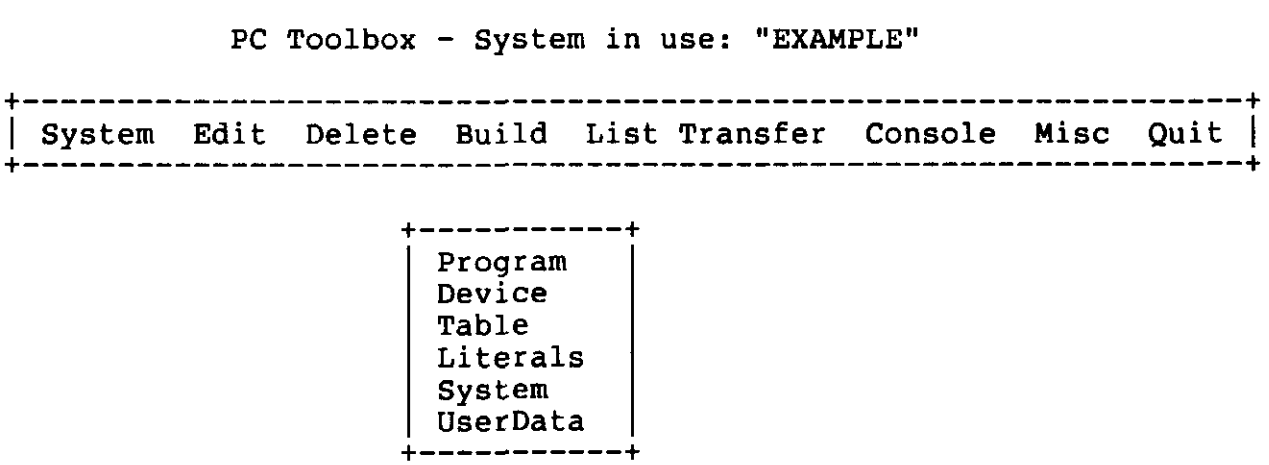
EDIT USER TABLE DATA (continued)

Upon entry into the editor the display shows "Beginning of Table". This is a pseudo record (record number 0) so that new records can be inserted at the beginning of a table if desired. The display also shows what keys are active at this time. The following is a description of these keys

<Page Up>	Shows the previous record in the table.
<Page Down>	Shows the next record in the table.
<Home>	Shows rung number 0 (Beginning of records).
<End>	Shows last record in the table and opens it for editing.
<Delete>	Deletes record currently being shown.
<F1>	Displays help screen.
<Insert>	Inserts a new record after the current record and opens it for editing. If already in insert mode, pressing insert deactivates the insert mode.
<Up-Arrow>	Opens the previous register in the current record for editing.
<Down-Arrow> <Enter>	Opens the next register in the current record for editing. If editing the last register in the record, and DOWNARROW or ENTER is pressed, a new record will be created if in insert mode. If not on insert mode, the next record will be displayed.
<Escape>	Exits the editor

DELETE

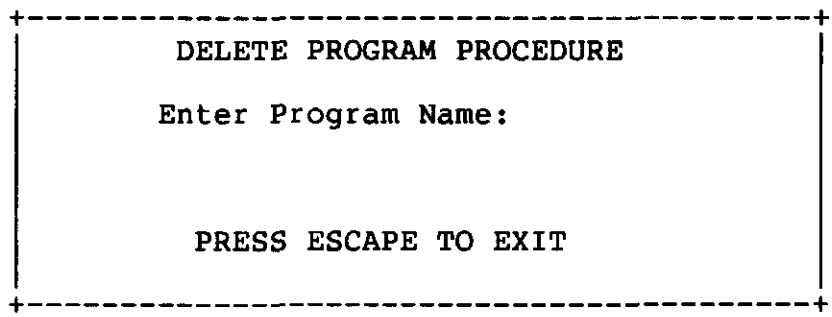
The Delete option allows the programmer to delete programs, literals, system files, and device and table setups. When this option is selected the screen will show the following:



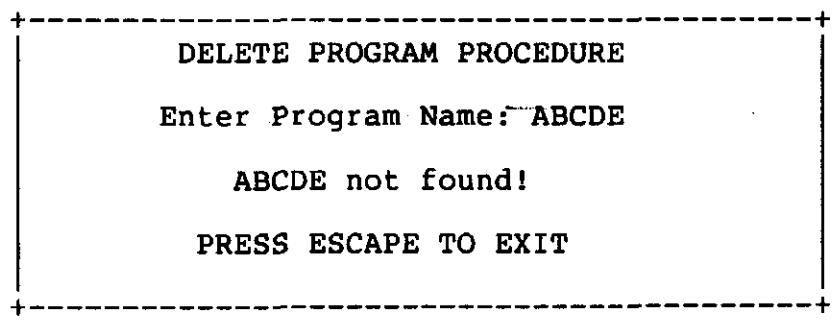
Six suboptions are available, Program, Device, Table, Literals, System and User data. To Select an option press the first letter of the option. The following is a description of each option.

DELETE PROGRAM

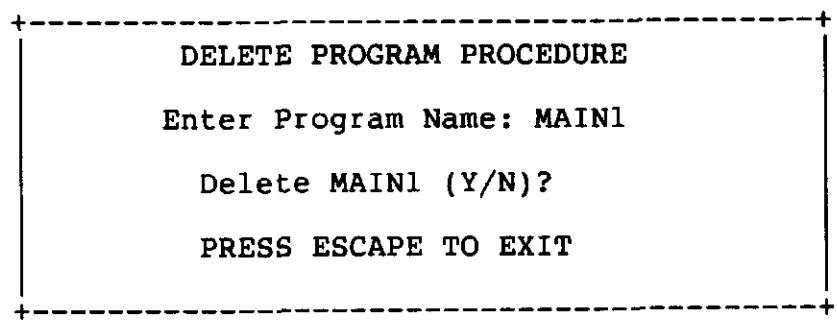
The delete program is used for deleting programs from disk. The screen will show the following:



If the program name is not found the screen will show the following:



If the program name is found the screen will show the following:

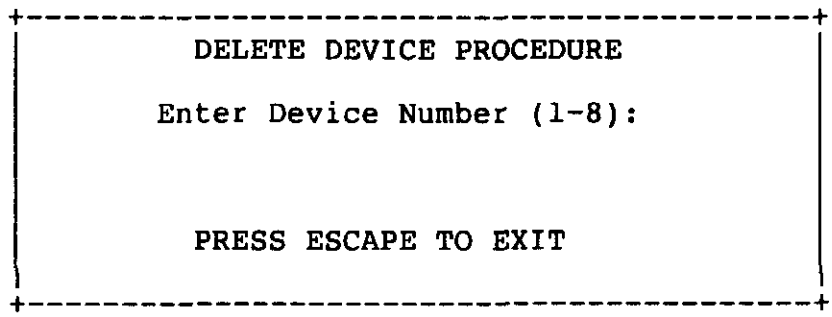


Press <N> to not have the program deleted. Press <Y> to have the program deleted. If 'Y' is pressed the program will be deleted and the screen will show the following:

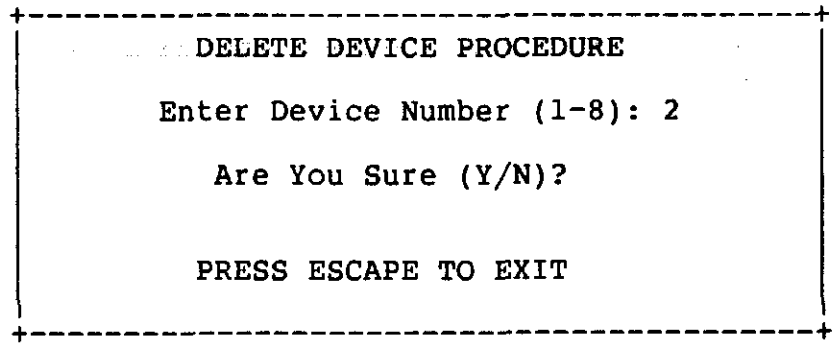
```
+-----------------------------------------+
|        DELETE PROGRAM PROCEDURE         |
|                                         |
|       Enter Program Name: MAIN1         |
|                                         |
|          Program MAIN1 deleted.         |
|                                         |
|         PRESS ANYKEY TO CONTINUE        |
|                                         |
+-----------------------------------------+
```

DELETE DEVICE

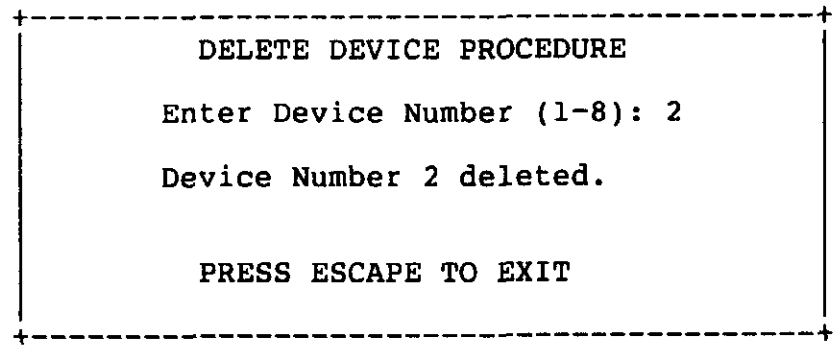
The delete device is used for deleting devices from the device setup file. The screen will show the following:



If the device number entered is found in the device setup the screen will show the following:

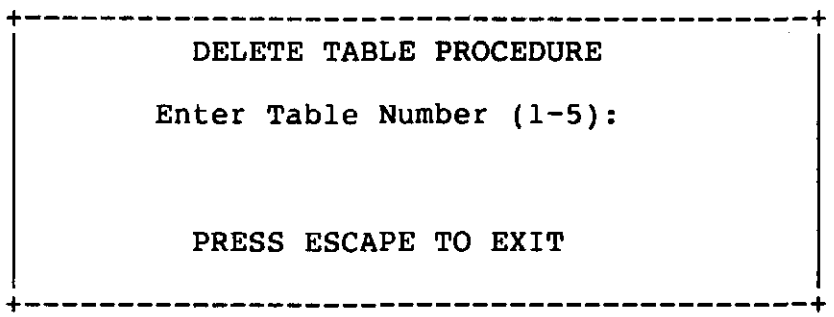


Press <N> to not have the device deleted. Press <Y> to have the device deleted. If 'Y' is pressed the device will be deleted and the screen will show the following:

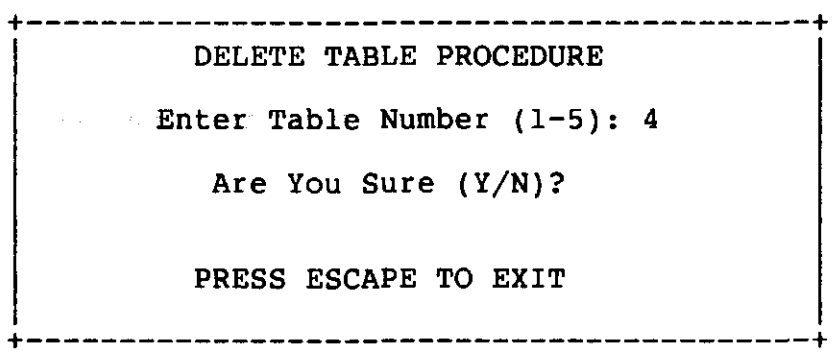


DELETE TABLE

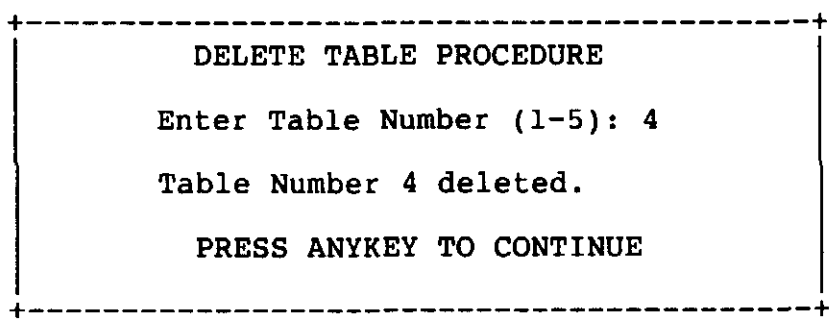
The delete table is used for deleting tables from the table setup file. The screen will show the following:



If the table number entered is found in the table setup the screen will show the following:

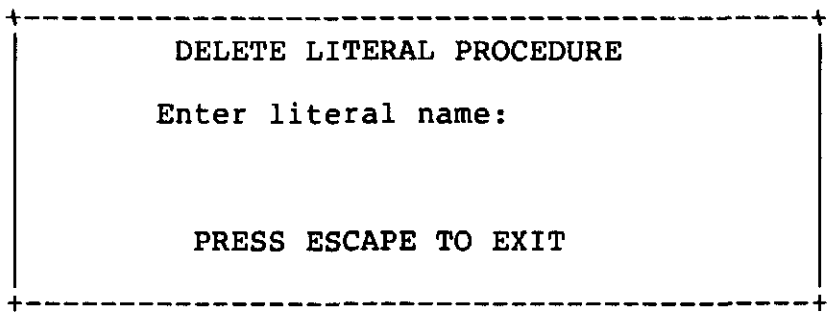


Press <N> to not have the table deleted. Press <Y> to have the table deleted. If 'Y' is pressed the table will be deleted and the screen will show the following:

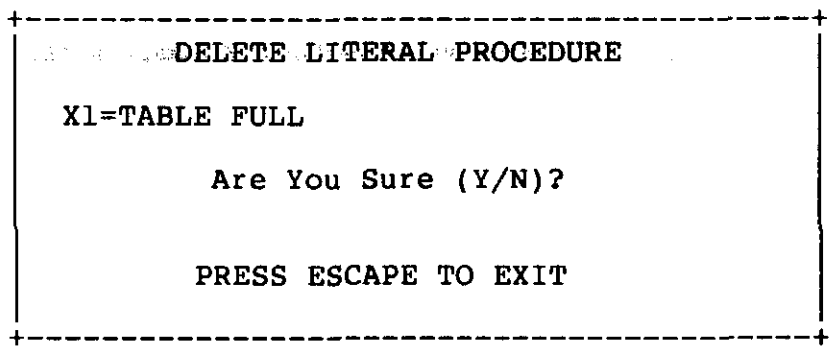


DELETE LITERALS

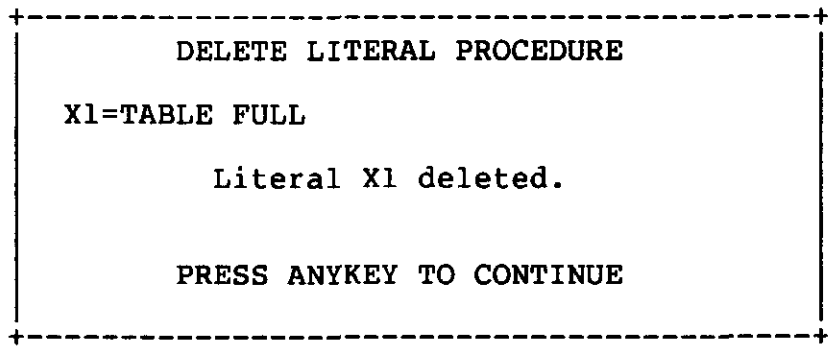
The delete literals is used for deleting literals from the literal file. This function can also be done when editing a program. The screen will show the following:



If the literal name is being used the literal contents will be displayed as follows:



Press <N> to not have the literal deleted. Press <Y> to have the literal deleted. If 'Y' is pressed the literal will be deleted and the screen will show the following:



DELETE SYSTEM

The delete system is used for deleting files with the name <systemname>. This function should normally be done when a build file has been created and no more edits are needed. This delete function works on the current system in use. Do not perform this function unless you fully understand the workings of the Toolbox.

The screen will show the following:

```
+-----------------------------------------+
|          DELETE SYSTEM PROCEDURE        |
|                                         |
|      Delete BUILD file also (Y/N)?      |
|                                         |
|                                         |
|          PRESS ESCAPE TO EXIT           |
|                                         |
+-----------------------------------------+
```

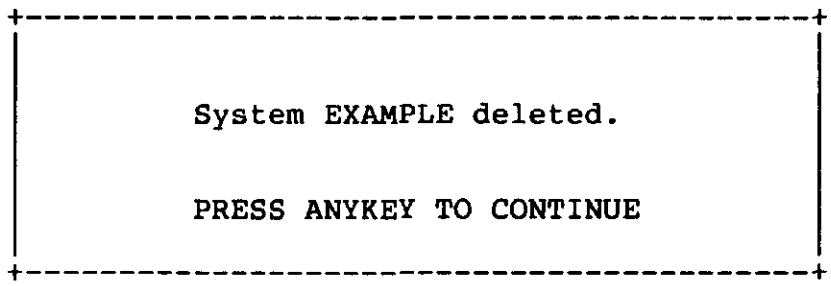
The user is prompted if the 'build' file is to be deleted also. Press <N> to not have the build file deleted. Press <Y> to have the build file deleted along with the other system related files. The build file is normally used for backup of the system. If it is deleted along with the other system files there will be NO BACKUP of the system unless you have copied it to another file. Do not perform this function unless you fully understand the workings of the Toolbox. One of the following will be displayed:

```
+-----------------------------------------+
|          DELETE SYSTEM PROCEDURE        |
|                                         |
|    Device and Table Setups, Literals    |
|           WILL BE DELETED !             |
|                                         |
|  Are You Sure you want to do this (Y/N)?|
|                                         |
|          PRESS ESCAPE TO EXIT           |
|                                         |
+-----------------------------------------+
```

or

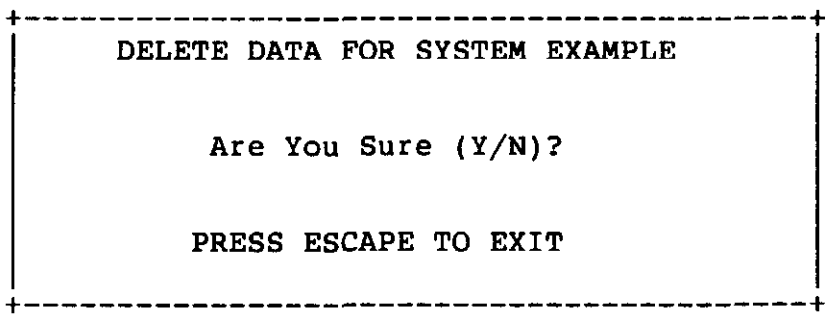
```
+-----------------------------------------+
|          DELETE SYSTEM PROCEDURE        |
|                                         |
|    Device and Table Setups, Literals    |
|    and build file  WILL BE DELETED !    |
|                                         |
|  Are You Sure you want to do this (Y/N)?|
|                                         |
|          PRESS ESCAPE TO EXIT           |
|                                         |
+-----------------------------------------+
```

Press <N> to not have the system files deleted. Press <Y> to have the system files deleted. If 'Y' is pressed the system files will be deleted and the screen will show the following:

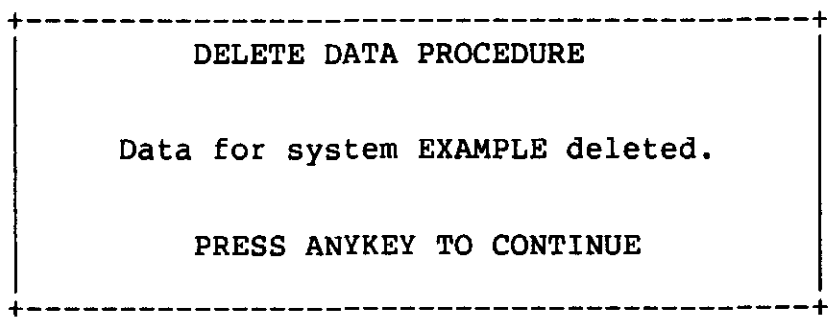


DELETE USER DATA

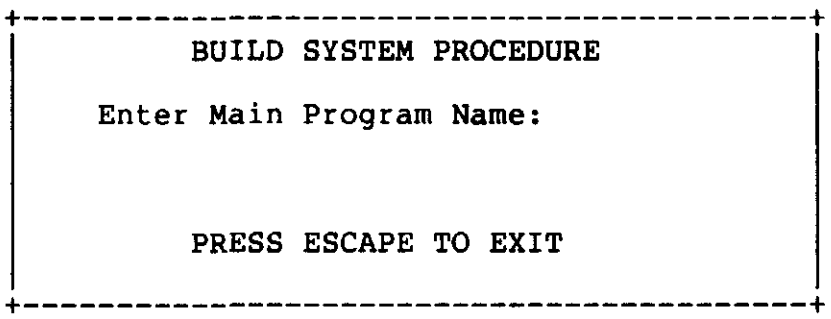
The delete user data function is used for deleting the data file associated with the current systemname.
The screen will show the following:



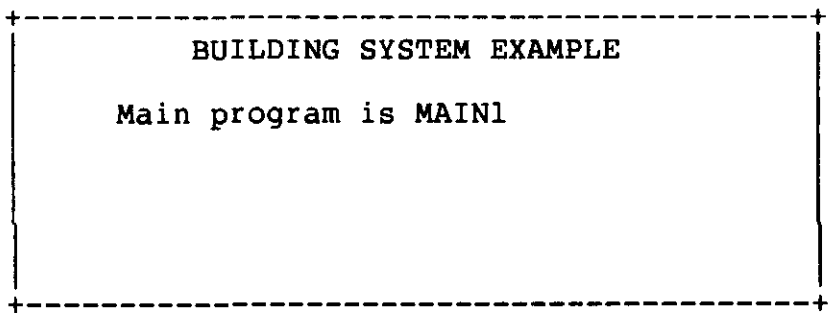
Press <N> to not have the data file deleted. Press <Y> to have the data file deleted. If 'Y' is pressed the file will be deleted and the screen will show the following:



The Build option allows the programmer to create a file of programs, literals, device setups, and table setups that can be downloaded to the 9360. When this option is selected the screen will show the following:

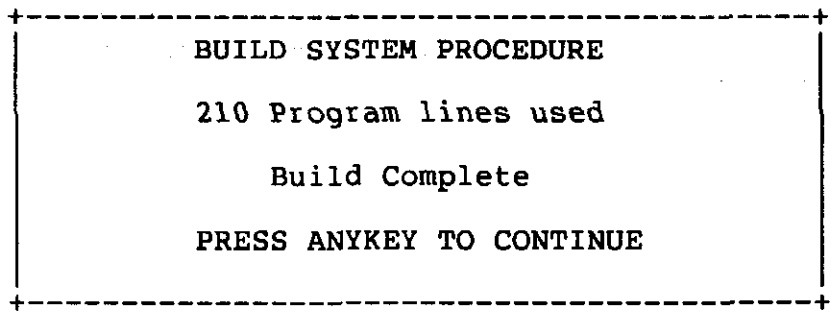


The user is prompted for the name of the main program of the system. This program would be the one executed at run time. If the program name entered is found, the display will show the following:



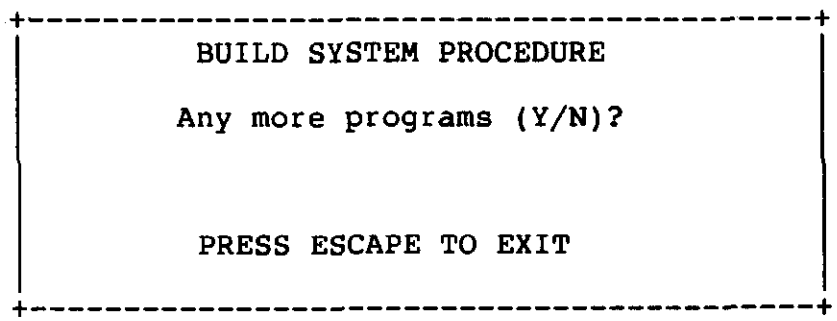
The main program will be compiled prior to being stored into the build file. If the main program calls other programs they also will be compiled and then stored into the build file. If a compile error occurs, the type of error will be displayed along with the program name and the line number the error occurred on. If an error occurs the build will not be completed.

If no compile errors occur the display will show the following:



The screen shows how many program lines the system is using so far. Only 400 program lines are allowed on the 8K 9360. Press anykey to continue.

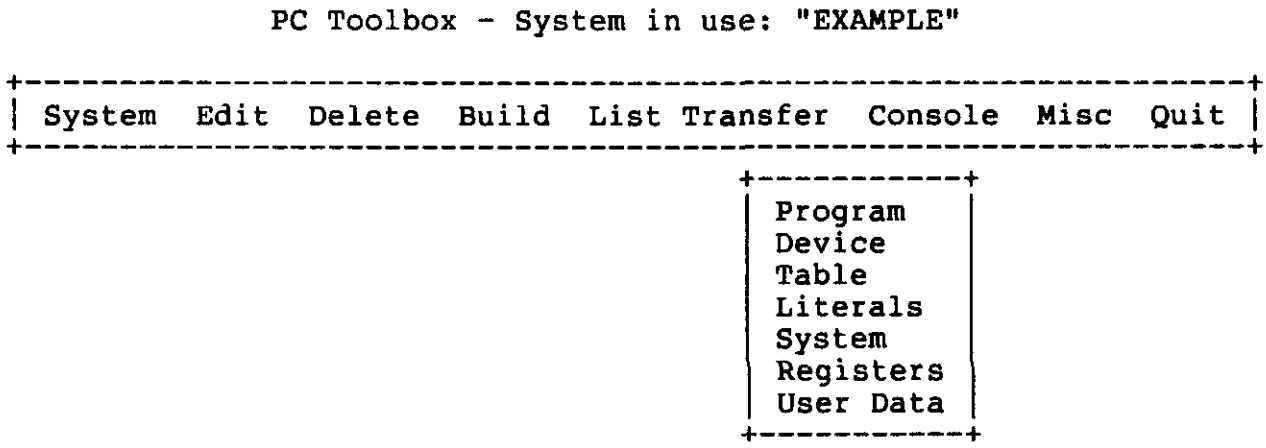
The screen will show:



If there are more programs for the system than the main program and its subroutines press <Y>. The user will be prompted for the program names. If all programs have been specified press <N>. The build function is now complete and the file is ready to be downloaded to the 9360.

LIST

The list option allows the user to view and print hard copies of programs, device setups, table setups, literals and user table data. This option also allows the user to obtain a printout of an entire system and/or the registers used in the system. All hard copies are obtain thru the parallel printer port, LPT1. When the list option is selected the screen will show the following:



Seven suboptions are available, Program, Device, Table, Literals, System Registers and User Data.
To Select a suboption press the first letter of the option.
The following is a description of each option.

LIST PROGRAM

The user will be prompted for a program name as follows:

```
+-----------------------------------------+
|         LIST PROGRAM PROCEDURE          |
|                                         |
|         Enter Program Name:             |
|                                         |
|                                         |
|          PRESS ESCAPE TO EXIT           |
|                                         |
+-----------------------------------------+
```

If the program name is found the following will be displayed:

```
+-----------------------------------------+
|         LIST PROGRAM PROCEDURE          |
|                                         |
|         Enter Program Name: MAIN        |
|                                         |
|      Direct output to Printer (Y/N)?    |
|                                         |
|          PRESS ESCAPE TO EXIT           |
|                                         |
+-----------------------------------------+
```

Press <N> to view the program on the screen. Press <Y> to obtain a hard copy of the program. If <N> is pressed the first 17 program lines and the first 17 literals are displayed as follows:

PROGRAM LISTING FOR SYSTEM "EXAMPLE"

Program Name: MAIN

```
  10 A T
    ;Time and Date Entry
  20 A D
  30 Z S0 S1 S2 S3
  40 Z S4 S6 S9 SA
  50 Z S5 N0 N1 N2
  60 Z N3 N4 NA
  70 A X0 N0,1
  80 I FK=F2 J 10
  90 C RDSCL
    ;Read Scale
 100 I N1=J1 J 30
 110 A X1 S0,4
 120 A X2 S1,5
 130 A X3 S2,2
 140 A X4 S3,2
 150 A X5 S4,1
```

Literal Definitions

```
J1=1
J2=2
J3=3
J4=4
J5=5
J6=6
J7=79
X0=SCALE 4-6?
X1=TRACTOR ID?
X2=TRAILER ID?
X3=FILLER ID?
X4=DRIVER ID?
X5=PRODUCT ID?
X6=PRINT Y/N?
X7=LB
X8=KG
X9=Y
```

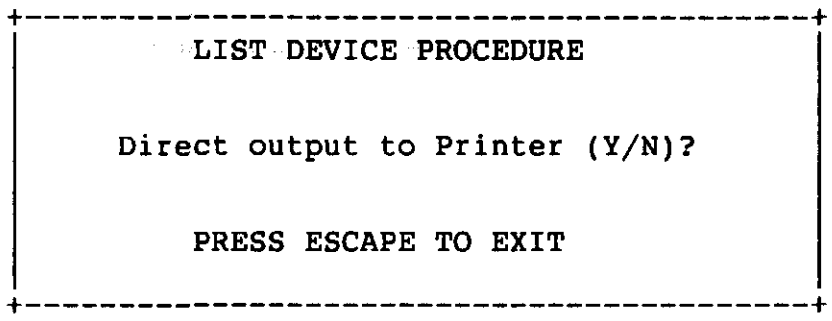
The screen will show "Viewing program". This tells the user that the program window is active. The next page of program lines can be viewed by pressing the Page-Down key. The previous page of the program can be viewed by pressing the Page-Up key. The program lines can be scrolled up and down by using the UpArrow and DownArrow keys. To view literals press the right-arrow key. The screen will show "Viewing literals". Press the left-arrow key to return to viewing program lines. Press <ESCAPE> to exit.

If 'Y' is pressed the program listing will be sent to the parallel port 'LPT1'. Line Comments are printed to the right of the program line. If a program line uses literals the literal name and contents are printed on the next line. If a program line uses a literal that does not exist the literal name followed by 'NOT FOUND' will be printed on the next line.

NOTE: Literal contents will begin with a '<' and end with a '>' so that literals containing only spaces can be identified.

LIST DEVICE

If this option is selected the screen will show the following:



Press <N> to view the device setups on the screen. Press <Y> to obtain a hard copy of the device setups. If <N> is pressed the first 2 devices are displayed as follows:

DEVICE SETUPS FOR SYSTEM "EXAMPLE"

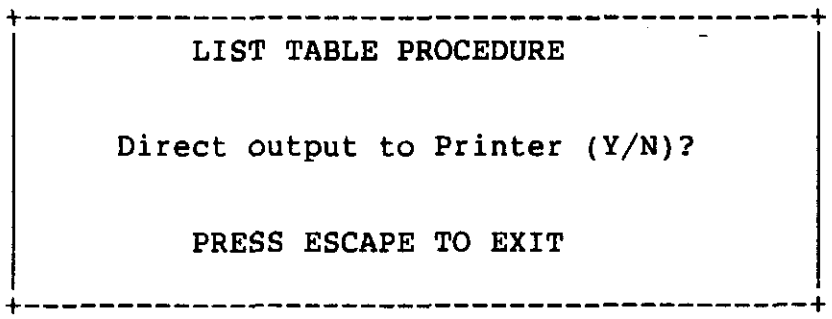
DEVICE NUMBER: 1	DEVICE NUMBER: 2
DEVICE TYPE: S	DEVICE TYPE: O
SCALE TYPE: T	XON/XOFF: N
REMOTE FUNCTIONS: N	DEVICE RESPONSE: N
CHANNEL: 4	SPECIAL PROTOCOL: N
HARDWARE SETUP: 232	CHANNEL: 4
BAUD RATE: 4800	HARDWARE SETUP: 232
PARITY: E	BAUD RATE: 1200
	PARITY: N

Press Page-Down to see the next two device setups (if any). Press Page-Up to see the previous two device setups (if any). Press Escape to exit.

If 'Y' is pressed the device setups will be sent to the parallel port 'LPT1'.

LIST TABLE

If this option is selected the screen will show the following:



Press <N> to view the table setups on the screen. Press <Y> to obtain a hard copy of the table setups. If <N> is pressed the table setups are displayed as follows:

TABLE SETUPS FOR SYSTEM "EXAMPLE"

```
TABLE NUMBER: 1    TABLE NUMBER: 3
RECORD SIZE: 19    RECORD SIZE: 15
RECORDS: 100       RECORDS: 50
 S1,5 S2,3 N1,4         SZ,8 NA,7
 N2,7


TABLE NUMBER: 2
RECORD SIZE: 12
RECORDS: 200
 SA,6 SB,1 N1,5
```

Press Escape to exit.

If 'Y' is pressed the table setups will be sent to the parallel port 'LPT1'.

LIST LITERALS

If this option is selected the following will be displayed:

```
+-----------------------------------------+
|        LIST LITERALS PROCEDURE          |
|                                         |
|     Direct output to Printer (Y/N)?     |
|                                         |
|         PRESS ESCAPE TO EXIT            |
|                                         |
+-----------------------------------------+
```

Press <N> to view the literals on the screen. Press <Y> to obtain a hard copy of the literals. If <N> is pressed the first 17 literals are displayed as follows:

```
                LITERALS FOR SYSTEM "EXAMPLE"
     Literal Definitions
+-------------------------------------+
|  J1=1                               |
|  J2=2                               |
|  J3=3                               |
|  J4=4                               |
|  J5=5                               |
|  J6=6                               |
|  J7=79                              |
|  X0=SCALE 4-6?                      |
|  X1=TRACTOR ID?                     |
|  X2=TRAILER ID?                     |
|  X3=FILLER ID?                      |
|  X4=DRIVER ID?                      |
|  X5=PRODUCT ID?                     |
|  X6=PRINT Y/N?                      |
|  X7=LB                              |
|  X8=KG                              |
|  X9=Y                               |
+-------------------------------------+
```

The next page of literals lines can be viewed by pressing the Page-Down key. The previous page of the literals can be viewed by

pressing the Page-Up key. The literals can be scrolled up and down by using the UpArrow and DownArrow keys. Press <ESCAPE> to exit.

If 'Y' is pressed the literal listing will be sent to the parallel port 'LPT1'.

NOTE: Literal contents will begin with a '<' and end with a '>' so that literals containing only spaces can be identified.

LIST SYSTEM

This selection will allow the user to obtain a complete listing of a system. A system must be successfully built prior to selecting this item. The error message "NO SYSTEM FILE ON DISK" will be displayed if no ".SYS" file exists. If the ".SYS" file does exist a printout of literals, table setups, device setups, all programs, and registers used by this system will be created.

LIST REGISTERS

The list registers selection allows the user to obtain a printout or to view on the display all registers that are used by a system. A system must be successfully built prior to selecting this item. The error message "NO SYSTEM FILE ON DISK" will be displayed if no ".SYS" file exists. If the ".SYS" file does exist the following will be displayed.

```
+----------------------------------------+
|         LIST REGISTERS PROCEDURE       |
|                                        |
|   Direct output to Printer (Y/N)?      |
|                                        |
|       PRESS ESCAPE TO EXIT             |
|                                        |
+----------------------------------------+
```

Press <N> to view the registers used on the screen. Press <Y> to obtain hard copy of the registers used. If <N> is pressed the registers used will be displayed on the screen. The following is an example of how the registers will be displayed.

REGISTER FOR SYSTEM "EXAMPLE"

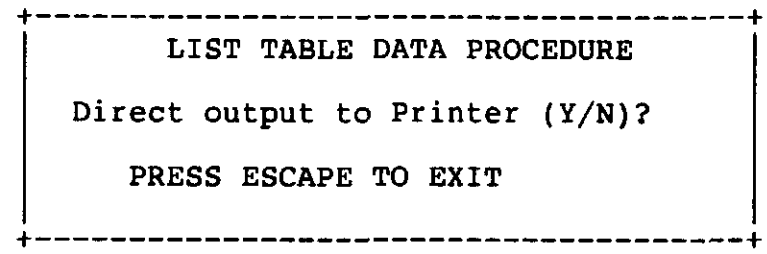
N0	NJ	SC
N1	NK	SD
N2	NL	SE
N3	NM	SF
N4	NN	SG
N5	NO	SH
N6	NP	SI
N7	NQ	SJ
N8	NR	SK
N9	NS	SP
NA	NT	SU
NB	NU	SW
NC	NV	SX
ND	NW	SZ
NE	NX	B0
NF	NY	B1
NG	NZ	B4
NH	SA	B5
NI	SB	

ESCAPE = exit

If 'Y' is pressed the register listing will be sent to the parallel port 'LPT1'.

LIST USER DATA

The list user data selection allows the user to obtain a printout or to view on the display the user data that has been created for a system. A ".DAT" file must exist prior to selecting this item. This file is created by uploading user data from a 9360 or by using the 'EDIT USERDATA' option. The error message "NO SYSTEM FILE ON DISK" will be displayed if no ".DAT" file exists. If the ".DAT" file does exist the following will be displayed.



Press <N> to view the table data on the screen. Press <Y> to obtain hard copy of the table data. If <N> is pressed the table data will be displayed on the screen. The following is an example of how the data will be displayed

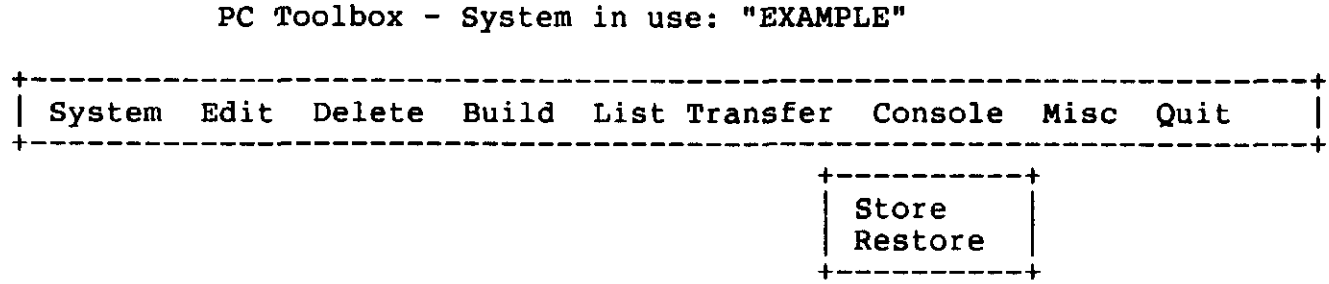
TABLE 1 number of record 100, record length 21, for system "EXAMPLE"

```
S1= AAA          S2= BBBBBBBBBBBB          N0= 0123 3
S1= BBB          S2= CCCCCCCCCCCC          N0= 0014 3
S1= CCC          S2= DDDDDDDDDDDD          N0= 0078 4
```

In this example table 1 only has 3 records. If a table has a larger number of records than can be displayed in one screen, the next group of records will be displayed when the operator presses any key. To exit the display prior to viewing all of the records press ESCAPE.

TRANSFER

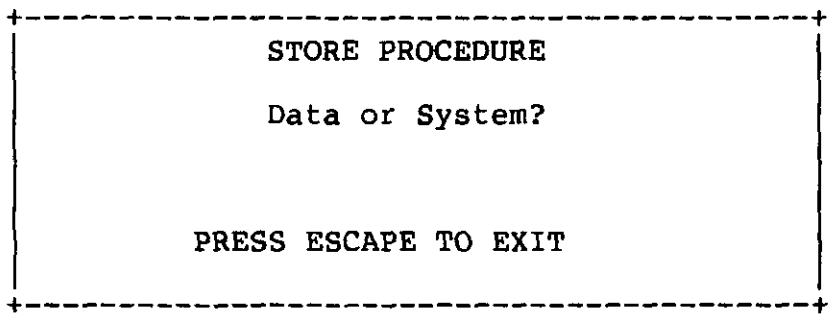
This option is used to store and restore systems and data to and from the 9630. These functions use either the COM1 or COM2 ports (selectable under the INIT function in MISC). The following is displayed:



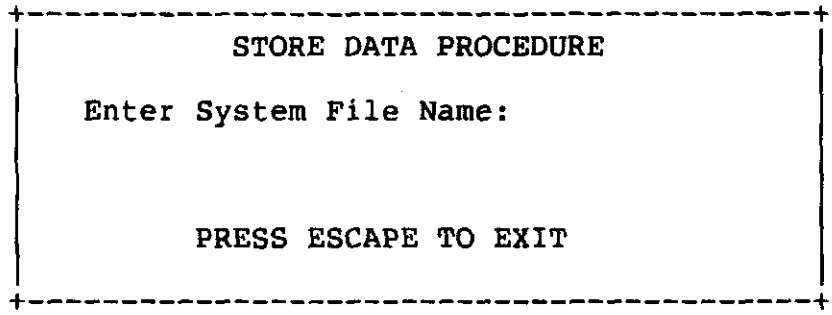
Two suboptions are available, Store and Restore. To Select a suboption press the first letter of the option. The following is a description of each option.

STORE

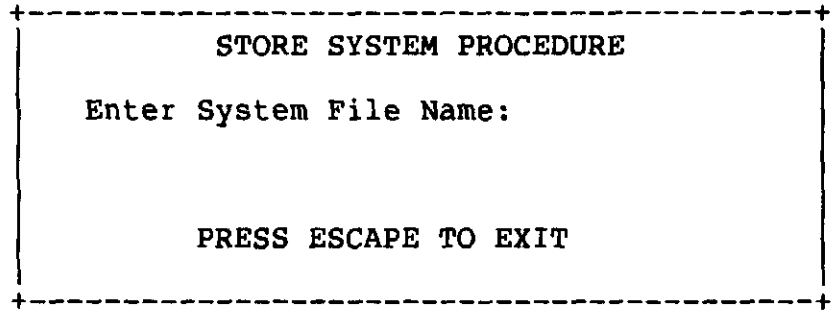
The store function is used for downloading a build file or data file to the 9360. The build file can be one that was created by the restore function or one that was created by the build function.
The data file can only be created by the restore data function.
The screen will show the following:



The user is prompted to select if a data file is to be downloaded or if a build file (system) is to be downloaded. If a data file is selected the file <systemname>.DAT will be downloaded. If a build file is selected the file <systemname>.SYS will be downloaded. The screen will show one of the following:

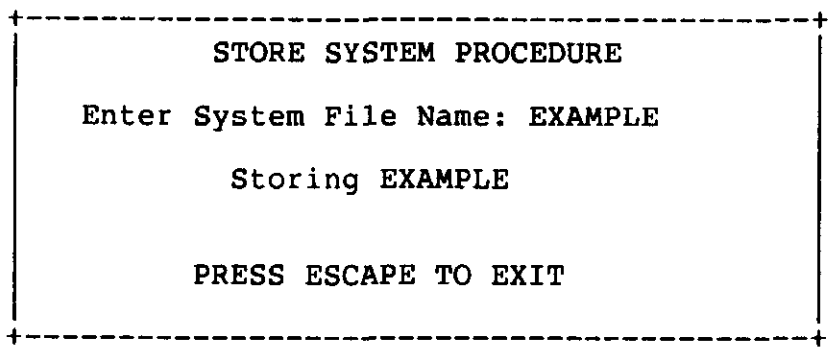


or



Enter the system name of the file to be downloaded and press <ENTER>. Prior to pressing <ENTER> make sure the 9360 is in the restore mode.

If the file is found the screen will show the following:



If an error occurs during the store procedure one of the following will be displayed.

NO RESPONSE
NAK - NO CODE
NAK WITH CODE - code received
INVALID RESPONSE

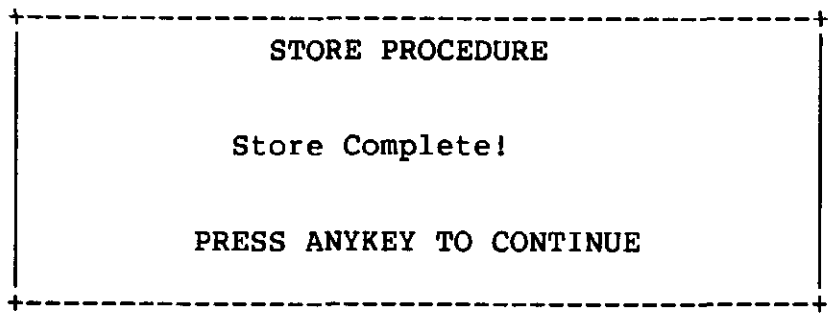
NOTE: Occasionally a "No Response" or "Invalid Response" may occur during a store. Press <ENTER> to continue the operation.

If a NAK with code is received the codes refer to the following error messages:

A - Partial Message Received
B - Message Too Long
C - Invalid Checksum
D - Unbalanced Data
E - Message Length Fault
F - L. P. Missing Group
G - Invalid Literal Group
H - Program Not Expected
I - Destination Memory Full
J - Invalid Message Type

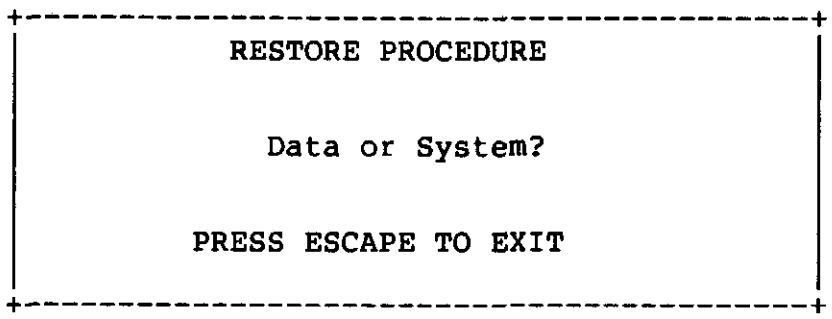
See the 9360 Programmer's Manual for a description of these error messages. Press <ENTER> to have the store function retry sending. Press <ESCAPE> to exit the store function.

If the store function successfully completes, a code will be sent to the 9360 to return it to the 'S:' prompt and the Toolbox screen will show the following:

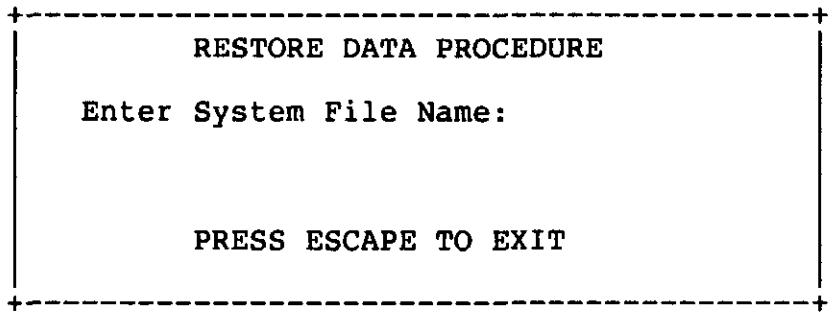


RESTORE

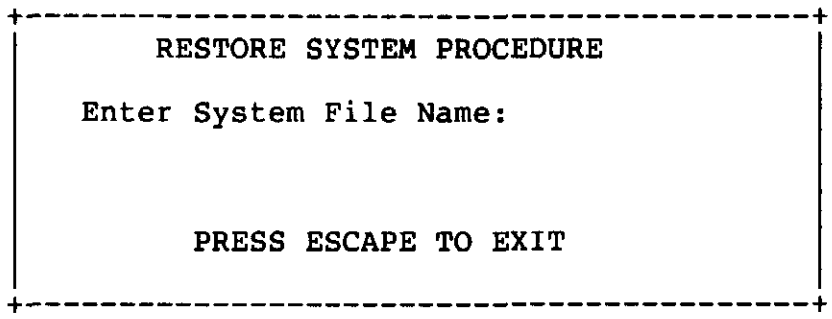
The restore function is used for uploading a system or data file to the 9360. The screen will show the following:



The user is prompted to select if data is to be uploaded or if a system is to be uploaded. If data is selected the received information will be put into a file called <systemname>.DAT. If system is selected the received information will be put into a file called <systemname>.SYS and once the restore is complete <systemname>.SYS will be split into program, literal, table and data files. The screen will show one of the following:

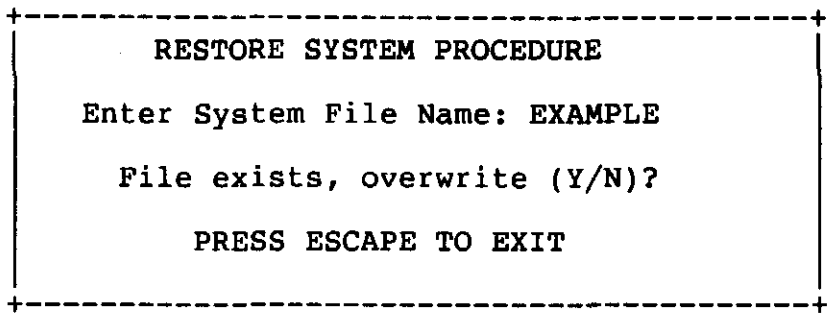


or

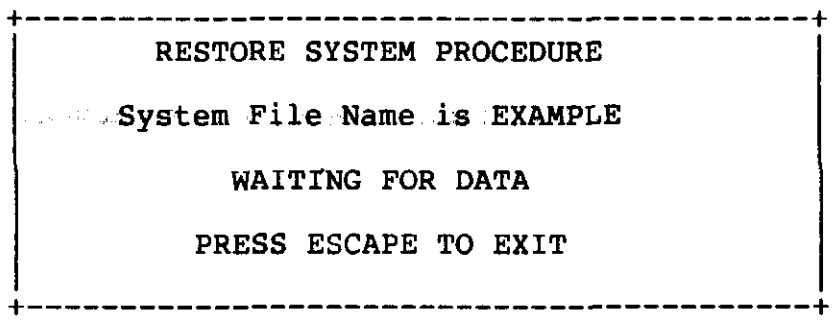


Enter the system name that the data file or system file should be given and press <ENTER>.

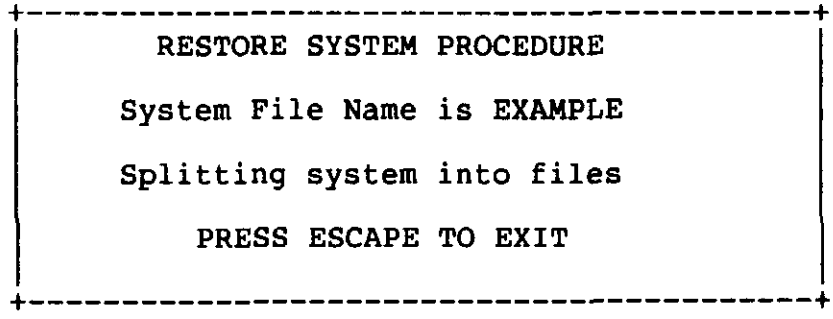
If the file already exists the screen will show:



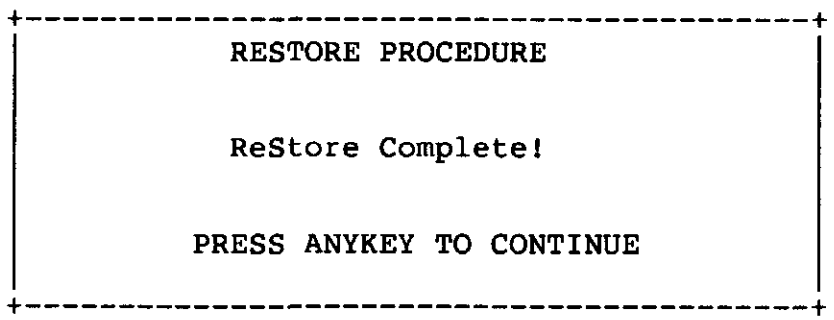
Press <Y> to continue with the restore procedure. Press <N> to exit the restore procedure and not have the file overwritten.
If 'Y' is pressed the screen will show the following:



At this time the user should type <STORE> followed by <ENTER> on the 9360 to upload a system or 'STORE DAT' followed by <ENTER> on the 9360 to upload data. When all information has been restored on a system file the screen will show the following:



At this time the Toolbox is creating a literal file, program files, and device and table setup files. These are the files used when editing. Once the files have been split the screen will show:

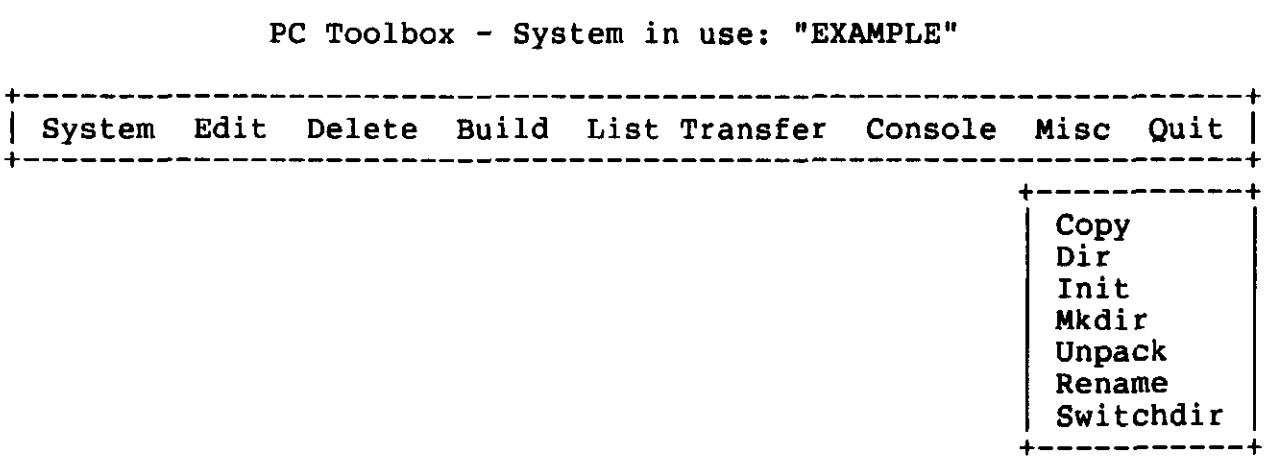


CONSOLE

The console option allows the user to use the Toolbox as the console port on the 9360 programmable keyboard. This function uses either the COM1 or COM2 port (selectable under the INIT function in MISC). To exit console mode press <CTRL Z>.

MISC.

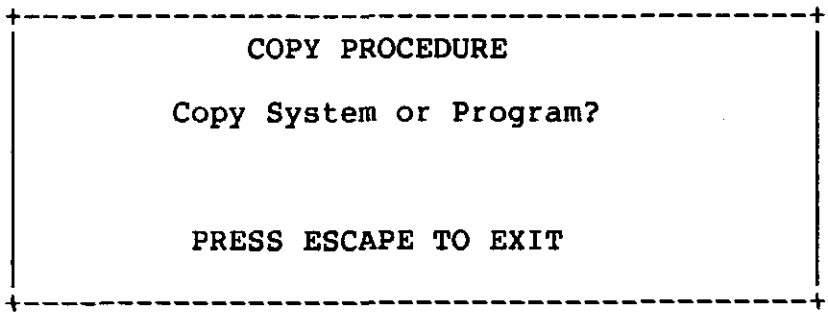
This option is used to copy and rename systems and programs, display program names, initialize the communications port, make and switch directories, and unpack build files.
The following is displayed:



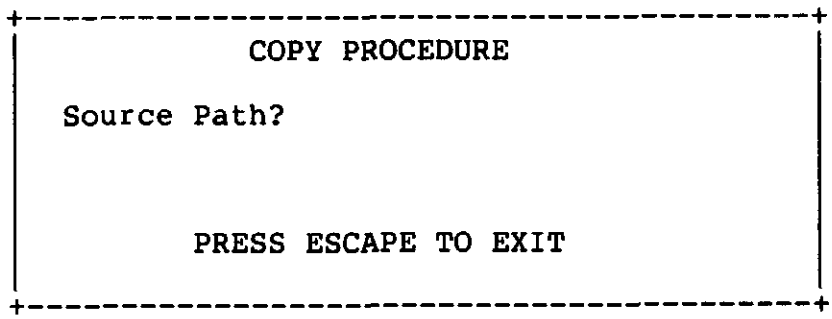
Seven suboptions are available. To Select a suboption press the first letter of the option. The following is a description of each option.

COPY

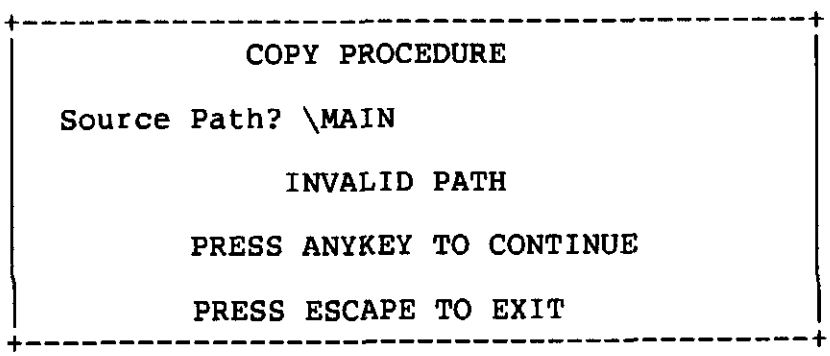
The copy function is used to make copies of programs and systems. The copy program function will copy both the .PRG file and .PDX file. The copy system function will copy the build file (.SYS), literal files (.LIT and .LDX), table setup files (.TAB and .TDX) and the device setup files (.DEV and .DDX) if they exist.
The screen will show the following:



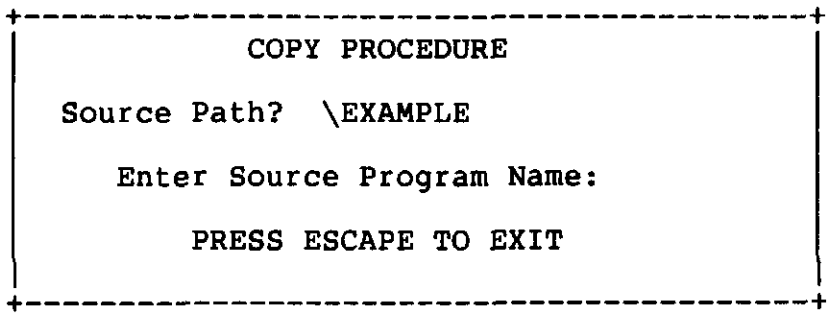
The user is prompted to enter whether a program or a system is to be copied. Once selected the screen will show:



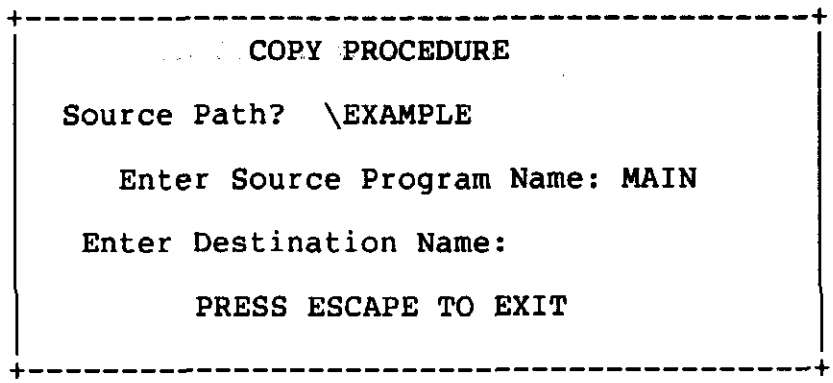
The user is prompted to enter a source path if desired. If the source path is the same as the current directory path no path is needed. The source path can be any existing path name up to 40 characters long. If the path entered does not exist the following will be displayed:



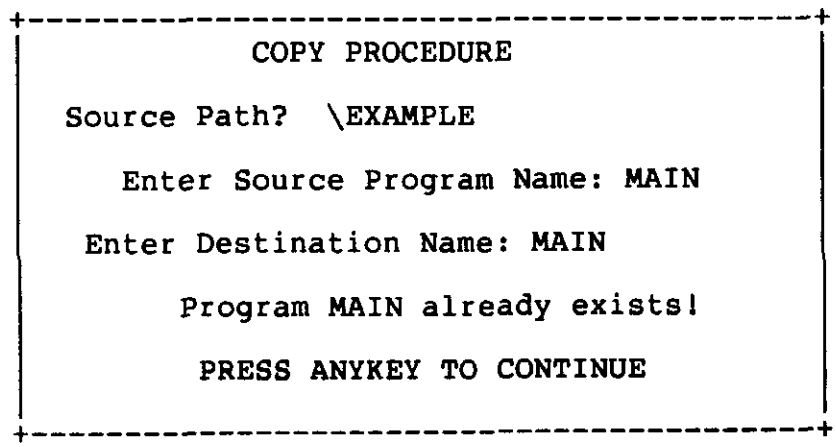
If the path is valid the Toolbox will request a Source Name. This name should either be a program name or system name depending on which copy function was selected.



If the source name is valid the Toolbox will request a Destination Name. The destination name should either be a program name or system name depending on which copy function was selected.

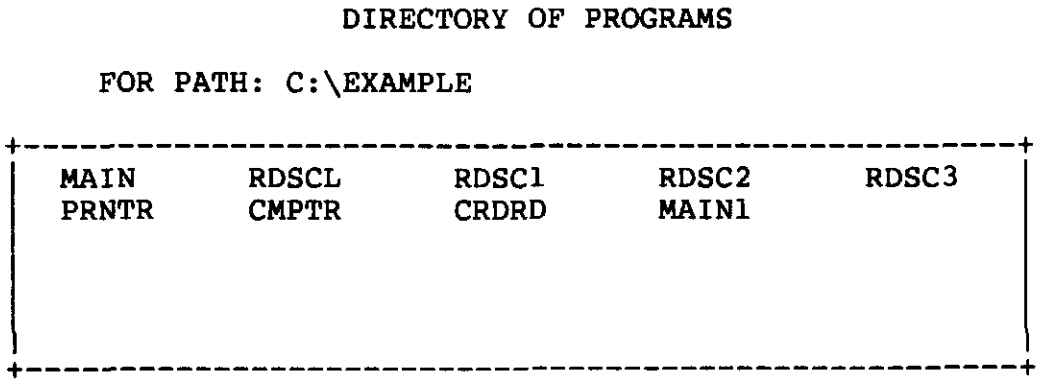


The Toolbox will check to see if the destination name entered already exists. If it does not exist the program or system will be copied. If it does exist the following will be displayed:



DIRECTORY (DIR)

The directory function is used to display all programs stored under the current path.
The screen will show the following:

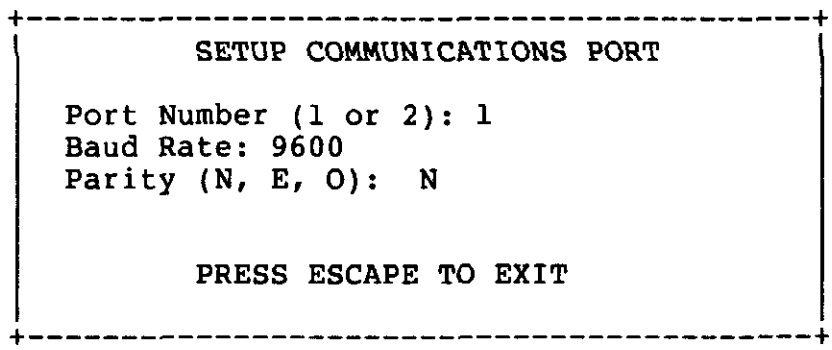


Press Page-down to view the next page of programs (if any).
Press Page-Up to view the previous page of program (if any).
Press <ESCAPE> to exit.

INIT

The Init function is used to select which serial port will be used for interfacing to the 9360 programmable keyboard. The default parameters are COM1, 9600 baud, no parity. The Toolbox supports ports 1 and 2, baud rates of 300, 600, 1200, 2400, and 9600, even, odd, and no parity.

The screen will prompt the user for the following:

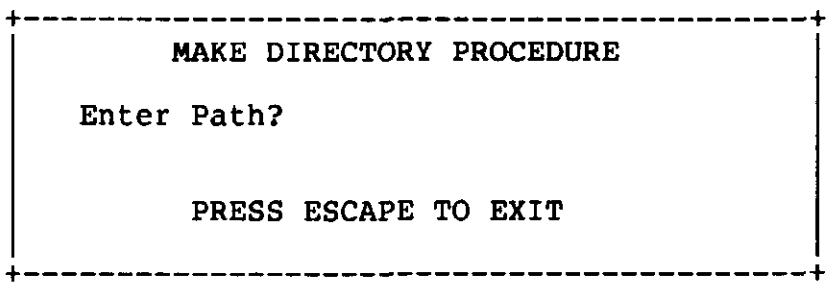


The modified parameters are written to disk in a file called "Toolbox.sys" under the root directory when the init function is exited. This file will be read automatically when the toolbox is run the next time, eliminating the need to enter the parameters again.

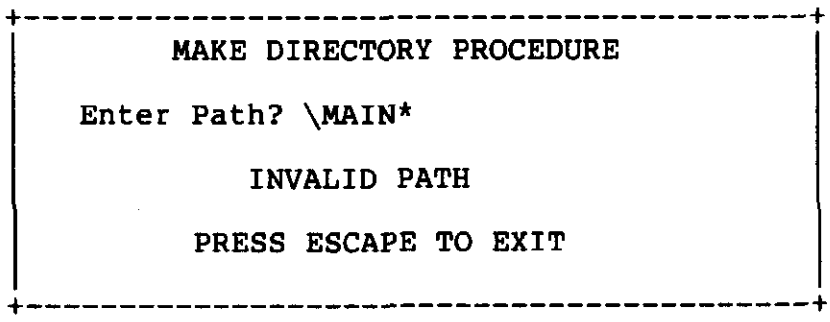
MAKE DIRECTORY (MKDIR)

The Make Directory function allows the user to create a new subdirectory.

The screen will show the following:



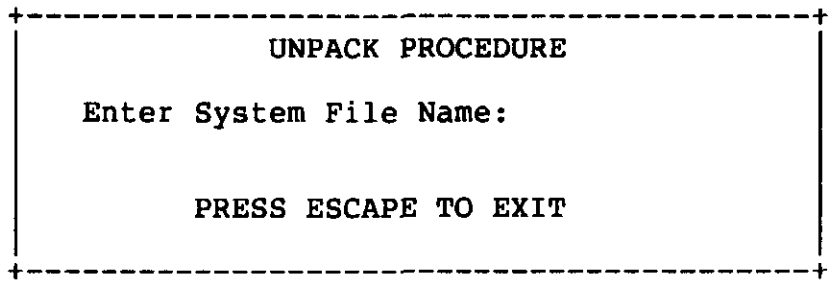
The user is prompted to enter the new directory path. The path can be any nonexisting path name up to 40 characters long. The last item in the path cannot be an existing file name. If the path entered is invalid the following will be displayed:



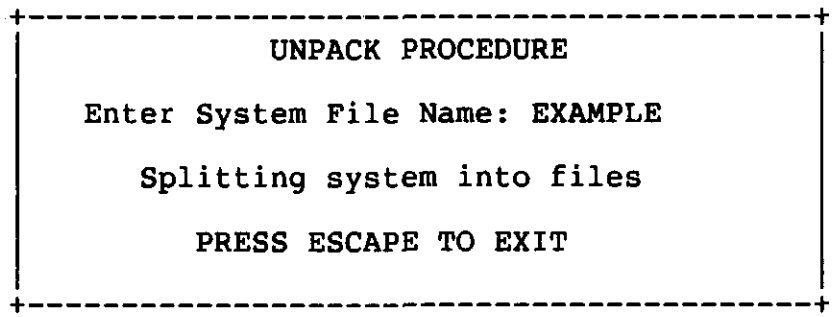
UNPACK

The Unpack function will split a build file <systemname>.SYS into program files, literal files, table and device setup files that can be edited, listed, etc.

The screen will show the following:



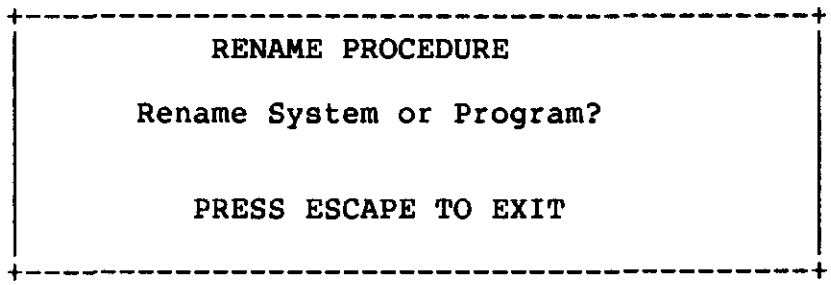
The user is prompted to enter the name of the system to be unpacked. If the name entered is found the following will be displayed:



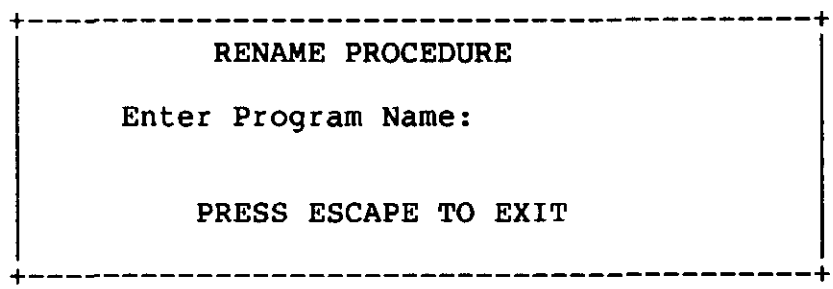
The build file <systemname>.SYS is the only file needed for backup of a system. Once the final version of the system is complete and a build has been done (.SYS file created) the rest of the files can be deleted. If at a later time a system needs to be modified, the Unpack function is used to split the .SYS file into device, table, literal, and program files.

RENAME

The rename function is used to change the name of programs and systems. The rename program function will rename both the .PRG file and .PDX file. The rename system function will rename the build file (.SYS), literal files (.LIT and .LDX), table setup files (.TAB and .TDX) and the device setup files (.DEV and .DDX) if they exist. The screen will show the following:

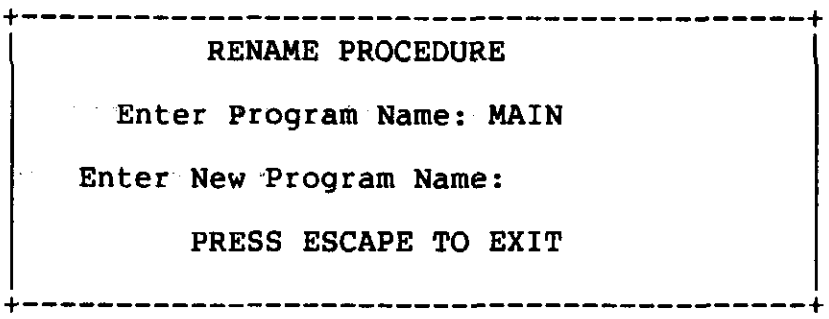


The user is prompted to enter whether a program or a system is to be renamed. Once selected the screen will show:

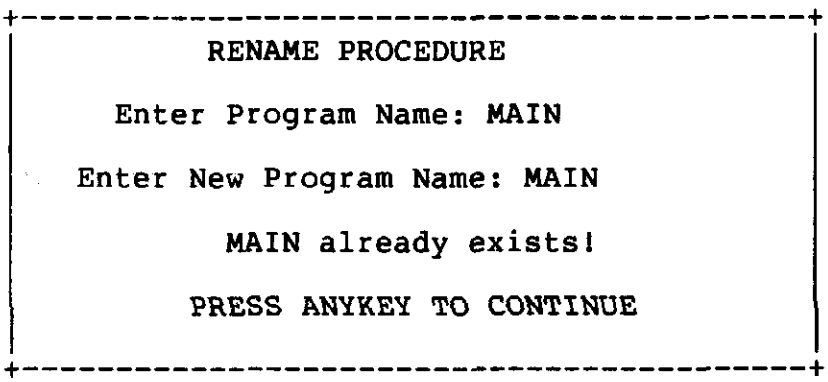


The user is prompted to enter a program name or system name depending on which rename function was selected.

If the name is valid the Toolbox will request a new Name. The new name should either be a program name or system name depending on which rename function was selected.



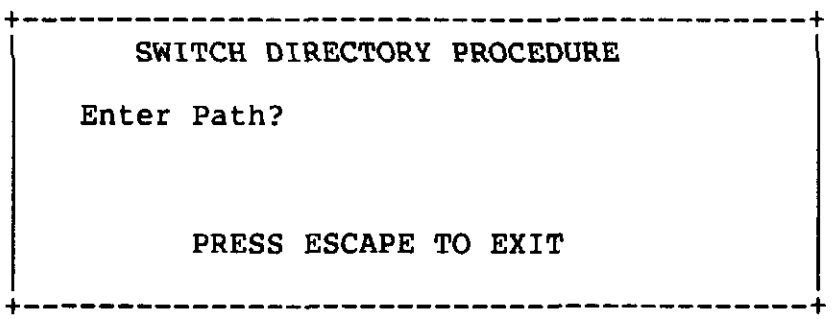
The Toolbox will check to see if the new name entered already exists. If it does not exist the program or system will be renamed. If it does exist the following will be displayed:



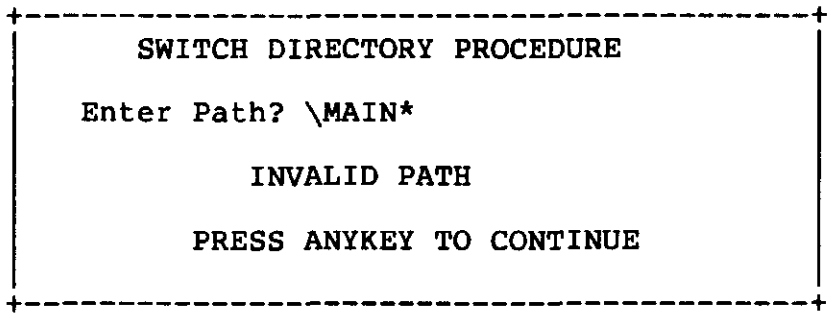
SWITCH DIRECTORY (SWITCHDIR)

The Switch Directory function allows the user to change the current directory.

The screen will show the following:



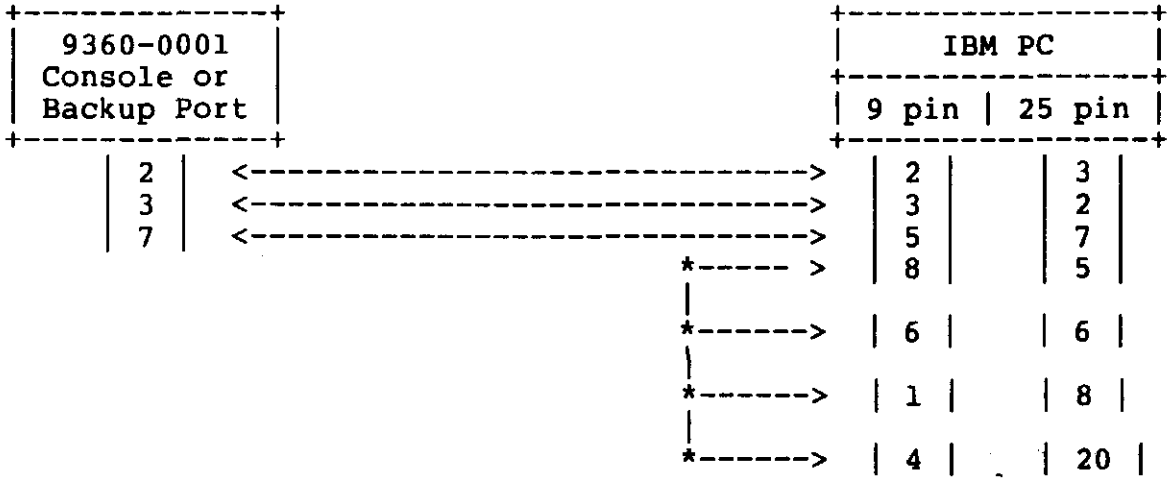
The user is prompted to enter the new path. The path can be any existing path name up to 40 characters long. If the path entered is invalid or does not exist the following will be displayed:



APPENDIX A

The following diagrams show the recommended cable configurations for connecting the 9360 Programmable Keyboard to the IBM PC.

Cable for 9360-0001 to 9 or 25 Pin connector on the PC.



Cable for 9360-0002 to 9 or 25 Pin connector on the PC.