SECUTRON™
Fire Alarm Systems℠

Modul-R
Human Interface

User Guide

Revision 1
Document #: LT-2023

***WARNING**: This manual contains information on limitations regarding product use and function and information on the limitations as to liability of the manufacturer. The entire manual should be read carefully.*

Contents

1.0 Overview

1.1 General Information

The Modul-R Human Interface Database Editor for Windows (MHI) allows for the easy entry, updating and loading of databases into Secutron equipment. There are two different databases possible, Modul-R and Digitel. The Modul-R database is for the MR-2900, MR-2200 and MR-2400 Fire Alarm Control Panels, and MR-2944 and MR-2944 Annunciators. The Digitel database is for the SE 2000 Digitel Central Station Receivers using the SE 2011 Processor Board. This manual is for MHI Version 22.0d which generates version 22 Modul-R databases and version 4 Digitel databases.

There are three versions of the program available:

1. A version which supports Modul-R databases only. This is the version normally received.
2. A version which supports both Modul-R and Digitel databases. This version is special order.
3. A version which supports Digitel databases only. This version will call itself Digitel Human Interface (DHI).

1.2 Features

- Built-in context sensitive Help System
- Database downloading using PC serial port
- Database Verification - finds errors and inconsistencies in your database
- Detailed database report generator - prints reports to printer or disk in various formats
- Panel operating system program download capability
- Built in terminal emulator
- Pop-up windows incorporating simple context sensitive controls
- Automatic database upgrading to allow for compatibility with future versions of MHI
- Automatic database backup performed prior to an edit session to safeguard data
- Automatic connected equipment detection and identification
- Designed with laptop use in mind; All functions are available from the keyboard
- Merge function will allow you to combine two systems when adding to an existing installation
- Compare facility will find differences between databases on your hard-disk or in your equipment
- Upload will allow you to extract a database from your equipment

1.3 System Requirements

MHI requires the following hardware and software to operate:

- IBM AT, PS/2 or 100% compatible
- 80386 or better processor
- 8 MB of RAM
- 10 MB of free disk space
- 1 floppy disk drive, 1.44 MB format (1.2 MB floppy available on request) or 1 CD ROM drive
- MS Windows 3.1, MS Windows 95 or compatible operating system (**Note:** Windows XP is not fully compatible)
- Serial Port for connection to external fire alarm equipment
- Interface Cable (See *Appendix H*)

The following items are not required to use MHI but make it easier to use:

- Pentium processor with a minimum 32 megabytes of RAM
- 2nd Serial Port c/w Mouse or a Bus Mouse
- Printer

1.4 Installing or Upgrading MHI

The following procedure details how to install and upgrade MHI:

1. Insert CD into your computer.
2. Select *Run* from the *Start Menu*. Type D:\SETUP (or the drive assigned to your CD-ROM) in the requester and press enter. The setup program will guide you through the rest of the installation.

Note: An upgrade will overwrite and/or modify application related files. Any databases found in the program directory will NOT be affected. Databases are upgraded automatically when they are loaded into a newer version of MHI.

1.5 System Files

The following files are used by MHI:

MHI_W.EXE	The main program
MHI_W.HLP	The help system file
DHI_W.EXE	The main program file for the stand alone DHI program
DHI_W.HLP	The help system file for the stand alone DHI program
README	Last minute information not necessarily included in the manual
DBFIX.*	Files required by the database repair program
*.DBA	Database files created
*.BAK	Backup database files created by MHI prior to editing sessions
*.OLD	Backup database files created by MHI prior to upgrading database versions
*.DBX	Import database files created by MHI Version 13 for DOS
*.VBX	Files required by MHI_W.EXE
AN*.S19	Operating programs for Annunciators
MR*.S28	Operating programs for Control Panels
LDR*.LDR	Loader files required for the loading of operating programs

1.6 Typographical Conventions

<Key Name> is a key on the keyboard. If a key includes <Shift> or <Alt> in the name, hold the <Shift> or <Alt> key down and then press the second key, eg. <Alt-F> means hold the <Alt> key down while pressing the <F> key.

2.0 Using MHI

2.1 Starting MHI

The installation will have created a new entry in your Start menu. To launch MHI, press the **Start** button and then choose *Programs* and then choose *Modul-R*. Choose *MHI v21*

to start.

Note: For DHI installations, look for Digitel Human Interface instead of Modul-R and DHI instead of MHI.

If any databases have been left open for any reason, a dialog will be displayed asking if they should be properly closed.

MHI v21 uses a software key to enable it and its various options. If the version you have requires a key MHI will ask for it the first time it is run. The key should have been supplied to you as a separate sheet with your MHI v21 package.

2.2 The User Interface

The program uses the standard Windows interface. It may be operated by mouse and/or keyboard. Using a mouse is recommended because it allows for easy navigation in MHI. At any time, pressing <F1> will pop-up the context sensitive Help Window. The middle button of a three button mouse will also pop-up the Help Window. The <Esc> key can always be used to backup a level in the program.

MHI presents and requests information in windows and dialog boxes. Windows are used for the editing of the database and dialog boxes are used to request specific items. Both windows and dialog boxes make use of various controls to display and receive information. These controls operate the same in both windows and dialog boxes. Operations are only done by the control that has focus. Only one control has focus at any time. The focus can be changed by clicking the mouse on the control to gain focus or by pressing <Tab> or <Shift-Tab> to select the next or previous control.

Unless otherwise stated, MHI works the same for both Modul-R and Digitel databases.

Controls

MHI uses standard Windows controls whenever possible. For descriptions of these controls access the Windows Help System by pressing the <F1> key.

MHI has one nonstandard control. It is a modified List Box. It is similar to the Windows standard List Box, except that each entry in the list can be turned on or off or through any available state. These list boxes are utilized extensively in the Relate Window. Use the space bar or double click on an entry to cycle between available selections.

In most list boxes, for quick access to any particular item in the list, press <Backspace> and enter the number of the desired item. The item will then become the current one.

2.3 The Main Window

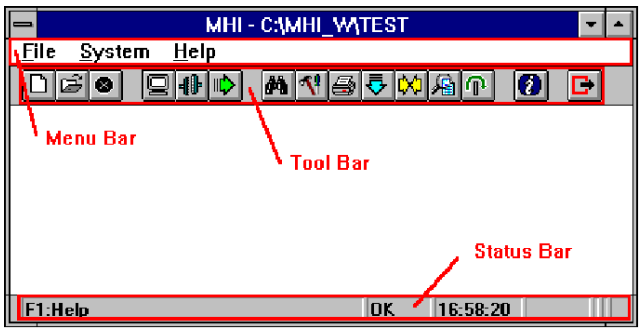


Figure 1: Main Window

The Main Window is shown in Figure 1. It is made up of a standard Menu Bar (along the top), a Tool Bar (under the Menu bar), the window area, and a Status Bar (along the bottom). The Menu Bar gives you access to all program commands. The Tool Bar provides quick access to the most frequently used functions. Pointing at any button on the Tool Bar will give you a "Tool Tip" describing the action of the button. Grayed Tool Bar buttons or Menu entries are not available. The window area is used by pop-up windows and dialog boxes that will request information from you or provide information to you. The Status Bar displays information relating to the current status of MHI. There are seven different areas to the Status Bar. If the Main Window has been reduced to a narrow width, not all sections may be seen. The first (left) section usually shows the currently available shortcut keys. It will also show menu descriptions as items are highlighted in the Menu Bar. The second section gives the program's current status, either OK or BUSY. The third section shows the current time using 24 hour format. The fourth section shows OPEN when a database is open. If the OPEN marker is showing, the computer should not be turned off. The fifth section shows the current status of any Hooked Equipment. It will show TEST while gathering information from any externally connected equipment. If no equipment is found, the field will say Unhooked. If equipment is found and its data is successfully gathered, the message HOOKED will be shown. The message DISABLED will be shown if all communications have been disabled. This is an option under the File/Settings menu. The sixth section shows C if the database is compressed and V if the database is verified. The seventh (right) section shows a spinner while gauges are being displayed as an indication that the program is working.

2.4 Tool Bar

The Tool Bar provides quick access to the most common commands in the system. All Tool Bar buttons have a corresponding Menu entry as well. Tool Bar buttons will be grayed if not available.

2.5 File Menu

The File Menu deals with the system database files and other program functions. It can be accessed by pressing <Alt-F>. It has the following options: New, Open, Save As, Close, Merge, Upload, Compare, Hooked Equipment, Open Terminal Window, Send Program, Settings, file history and Exit Program.

New 

Creates a new database for editing. The speed keys <F2> or <Ctrl-N> can also be used. Enter the name of the new database, maximum of eight characters, in the dialog box provided. Only filename characters may be used. If a directory other than the one displayed at the bottom is wanted, the **Change Dir** button will display the directory tree, from which you may select an appropriate directory. If both database types are enabled, MHI will default to creating a Modul-R database. If a Digitel database is required, change the System Type to Digitel. If the database already exists, you are asked if you wish to overwrite it, that is, delete the existing and create a new database with that name. Once the file is successfully created, the database is automatically placed in the first edit window. See control unit programming guide for descriptions of the edit windows.

Open 

This allows the opening of existing databases. The speed keys <F3> or <Ctrl-O> can be used. A file dialog shows all the available databases (.DBA) as well as any export files from pre-Windows versions of MHI (.DBX). Databases from previous version of MHI will need to be upgraded (see below). The Open will automatically import .DBX files (see below).

Upgrading a .DBA File
If the database file is from an older version of MHI, a dialog will appear asking if you wish to upgrade the database. Press **Yes** to upgrade the database, or press **No** to retain the older version. A dialog will ask if you wish to keep a copy of the original database. Press **Yes** to keep the copy with an .OLD extension.

Note: When upgrading from a version 17 (or earlier) system, a number of items that were programmed at the panel are now included in the database. See the file UPGRADE.TXT for a complete description of these changes. Follow these instructions to obtain the information required:

1. Connect your computer to the panel and open the Terminal window
2. Select the Printer screen in the Terminal: press 14 <Tab>
3. You should note that the title bar of the Terminal window displays the text "File logging in progress...". If this does not appear, press the button **Log On**.
4. In the terminal window, type the following command: 99?
5. The panel's configuration settings will be listed in the Terminal window and it will also be saved in the file: LOG_CONT.TXT, located in your program directory
6. Close the Terminal window
7. You may now view the contents of the file using any standard word processor or the NOTEPAD program supplied with Windows
8. You must perform the above procedure for ALL panels in your system

Importing a .DBX File
After double clicking on a file with a .DBX extension, a dialog will ask if you wish to import the database. Press **Yes** to convert the database to the .DBA format used by MHI. After successfully importing the file, a dialog will show the .DBX file size and ask if you wish to delete it. As .DBX files are large, it is recommended they be deleted. They can always be created again. The import creates a version 14 .DBA file that will need to be upgraded (see above).

Creating a .DBX File in MHI v13
The .DBX import file is created from the MHI Version 13, which is the last DOS based version. To export a file in .DBX format, first open the database. Then choose *System/Export* from the Main Menu. Choose *Database - V 14* from the choices listed.

Save As

Displays the Save Current System As dialog box. This dialog allows you to save a copy of the currently loaded system database under a new file name (and/or drive/directory). The original database will be retained. Enter a new name for your currently loaded system database. Select a different drive or directory if you wish. The name may be a maximum of eight characters and must adhere to DOS file naming conventions (ie. no spaces or special characters). Do not enter any file name extension. A .DBA extension will be supplied automatically. Once saved, this database will become the one that you are currently working on and its name will appear on MHI's Title Bar.

Close 

This closes the current database. The database will have been automatically saved when the editing windows were closed. MHI will now report No System Loaded on the Title Bar.

Merge

This creates a new database by merging two others together. The dialog requests two database file names, as well as a destination merge file name. The two databases that are being merged cannot have any panel IDs or group IDs in common (see Note 2 below). All three of these databases must reside in the same directory. You may select a different directory by pressing the **Chg Dir** button. Use the **Browse** buttons to select the files if necessary. Once you have entered the file names, press the **Merge** button to begin the process. Subsequent information windows will guide you through the merge process. Once merged, the new database will require verification. The *Next ID* for some panels will need to be changed to create a single network loop.

Notes:

1. The merged system will adopt System level information from the Primary database.
2. The Merge process will terminate if duplicate panels or groups are found. If there are any panels or groups with the same ID in either database, one will have to be changed. In the case where the databases being merged both represent existing databases, the user will need to change the panel IDs in the field to match the changes made to allow for the Merging. Use **Change ID** to change the ID of either a panel or group.

Upload 

This option allows the user to extract the original system database from a previously downloaded panel or annunciator (certain types only). Upload is available when the program determines that there is valid hooked equipment. Otherwise, the option will be greyed.

Upload will only extract databases from panels that were loaded using a version of the program that incorporates this feature. The feature was added in version 17 of the program. Therefore, you cannot extract a database that was downloaded using a program prior to this version. By upgrading all of your installed databases to the current program revision, you should not have any problems extracting a database.

If you do not want a panel to allow its database to be extracted (perhaps for security reasons), select “Disable Database Information Append” from the File/Settings dialog (see *Appendix B: Settings*), prior to downloading the panel. Remember to deselect this option afterwards, otherwise all subsequent panels will not support Upload in the future. **Note:** Only programs having the same serial number as the installed database will be able to extract it.

Warning: Extracting a database will create a duplicate of the original database complete with all panels in the network. This can cause significant confusion in version control. You must be especially careful when using this option to make field changes. Using this option to make field changes is not recommended. Changes should be made to the original database. In order to minimize the potential of lost database edits, this option should only be used to extract a database in the case of the original being lost.

When you select Upload, a dialog window will be presented. The dialog allows you to select the filename under which the extracted database will be saved. The directory in which it will be placed, is also shown. If you wish to change this directory, press the **Chg Dir** button and select your desired directory. To start the process, press the Upload button. A bar graph window will appear displaying the progress of your extraction. **Note:** This operation may take a significant amount of time depending on the size of the original system database. Upon completion, an information box stating that the upload was successful, should be displayed. The Uploaded database will be automatically opened as well.

Compare 

This option allows the user to compare two system databases. The systems may both reside on your hard drive, or one may be installed in your hooked equipment and the other may reside on your hard drive.

When you select Compare, a dialog window will be presented. This dialog allows you to specify the two systems that you want compared. You may simply type the names of the systems into the fields provided, or you may press the **Browse** button in order to locate the desired system database file. Both databases must be verified before the comparison can be done. If you wish to compare the currently loaded database with another, mark the *Use current system* checkbox. If you wish to compare an existing system with one that is currently loaded in your hooked equipment, mark the *Extract from hooked equipment* check box. This option will be greyed if the program does not see any valid hooked equipment. If you plan to compare a system with one that is stored in your hooked equipment, please read the **Upload** section above. All restrictions that apply to **Upload** will apply in this case.

To start the process, press the OK button. A bar graph window will appear displaying the progress of various comparison operations. **Note:** This operation may take a varying amount of time depending on the sizes of the original system databases and whether an **Upload** function is required. Upon completion, a dialog displaying the results, will appear.

The comparison is made up of three phases. The first phase finds entries that are found in system -A-, but are not found in system -B-. Entries are such things as panels, circuits, devices, etc. The second phase finds entries that are found in system -B-, but are not found in system -A-, the reverse of phase one. The third phase, compares the composition entries that are found in both systems. This phase is highly detailed. The last line of the comparison will tell you whether or not the systems are identical. The comparison is limited to 500 differences.

After a comparison is made, you may print the results by pressing the **Print** button or you may save them to a file by pressing the **Save As** button and specifying a file name and directory. If you wish to perform another comparison, you may specify another set of databases by pressing the **DBs** buttons and pressing the **Compare** button.

Note: It is prudent to obtain a comparison report prior to downloading an updated system into a panel.

Hooked Equipment 

Displays a dialog box describing the panel, or other equipment, that is connected to the computer. The **Re-Scan** button allows for interrogating the equipment again. Switching the programming cable quickly between panels that are adjacent to each other may require the use of the **Re-scan** button since MHI waits three seconds before deciding that it has been disconnected from a panel.

MHI will test for hooked equipment until it can identify the panel every 15 seconds provided there is data coming from the panel.

Open Terminal Window 

This option opens the integral terminal window. This window allows the user to access the hooked equipment's service terminal screens. The user can freely switch between the Terminal Window and other windows at any time. (If any View/Edit windows are open, the Menu and Tool Bar are disabled.) The information that is presented to the user in the terminal window comes from the equipment itself, not MHI. Consult your equipment's manual for commands and screens available. Since certain commands are common to all Secutron equipment, the **Index, Next, Prev** and **Refresh** buttons are provided for convenience. The terminal window allows for saving of

information in a log files, which are called LOG.TXT for Screen logs and LOG_CONT.TXT for continuous logs.

The following buttons are available on the terminal window:

- **Close:** Closes the Terminal Window.
- **Optns:** This displays the options for the terminal window. These settings are saved along with the rest of MHI's settings. These options are:
  -- Show Cursor: Display the current location of the cursor. The cursor shows where the next character sent from the equipment will be displayed.

  -- Reverse Colour Scheme: Switch between white text on a black background (normal) and black text on a white background (reverse).

  -- Show Buttons: Show or hide the **Indx, Next, Prev, Refresh, Log Screen** and **Log On/Off** buttons.

  -- Use Alternate Font: Switch between the regular and alternate fonts. Choose the one that gives a more readable display. The colour scheme can also affect legibility.

  -- Allow Automatic File Logging: This allows commands from the panel to start and stop logging of printouts if the service terminal is set to the printer screen. For example, if you wish a printout of the database, selecting PROGRAM/STATUS/PRINT DATABASE will cause the Log On command to be sent to the terminal window which will automatically start saving the information to a disk file. Once that is done, the Log Off command is sent to stop saving information.

  -- Local Echo: If enabled, Local Echo will display any keys that are sent to the hooked equipment. These sent text will be shown in red to distinguish it from the text received.

  -- Snapshot logging file: This field allows the operator to change the name of the screen capture log file from the default of LOG.TXT by entering a new file name or to view any existing log file by entering the filename and then clicking on the *View* button.

  -- Continuous logging file: This field allows the operator to change the name of the continuous log file from the default of LOG_CONT.TXT by entering a new file name or to view any existing log file by entering the filename and then clicking on the *View* button.

  -- Reset Logs: This will erase the text in the two log files. MHI will then put a line in the files stating when this reset took place.
- **Indx:** This sends the command `0<Tab>` to the hooked equipment to display the index screen. The index screen shows all available service terminal screens and the commands for displaying them.
- **Next:** This send the command `<Tab>` to the hooked equipment to display the next service terminal screen.
- **Prev:** This send the command `<Backspace>` to the hooked equipment to display the previous service terminal screen.
- **Refresh:** Sends a `<Del>` to the hooked equipment to cause it to erase and resend the current screen.
- **Log Screen:** Captures a snapshot of the current display and saves it in the log file LOG.TXT.
- **Log On/Off:** Starts and stops the saving of the information sent from the hooked equipment to the log file LOG_CONT.TXT. If automatic logging is allowed, these commands will be accepted from the panel without the user having to do anything. If the rest of a printout is not required pressing Log Off will stop the saving to the log file.
- **Script:** This dialog allows you to select a script file that you wish to execute via the terminal window. The program comes with several stock scripts. Select the desired script from the listing and press the Run button.

Long printouts, such as the history or database, can be halted and continued by pressing <F11> (Xoff) to halt the printout and <F12> (Xon) to continue the printout.

Send Program (Firmware) 

This option allows the user to download operating programs (firmware) to control panels and annunciators. The speed key <F6> can be used to access this option. This operation is not normally required since all equipment comes preprogrammed from the factory. This option is useful only if an upgrade to the operating system program is required. This will generally be the case when you upgrade your version of MHI. MHI is always shipped with programs that are compatible with it.

Note: A warning will be issued if the program in the panel is newer than the program about to be sent.

MHI will generally know how an operating program is to be loaded. MHI also supports the loading of operating programs into other Secutron equipment. If MHI is unable to determine the proper method of loading the operating program, it will ask if you wish to choose a method. If you select Yes, a list of all supported equipment will be shown.

To determine which program is currently installed in a panel, from the LCD display, choose STATUS/IDENTIFICATION. The first screen displayed is the name of the program currently loaded. The program date and time are used to identify revisions. When updating the operating program (firmware), send the program *having the same name*, unless you want to change the operation of the general communications port. See *Appendix F: Operating Programs* for a complete list of programs supplied with MHI. Both fire panels and annunciators will display the program name on Screen 2 of the service terminal. Information on the service terminal is included in all fire panel and annunciator manuals.

From the Select a Program Dialog, choose the operating program to load. The Send Program Dialog will display information about the program selected. If a different program is desired, press **Select Program** to show the previous dialog again. Press **Start** to begin downloading. The message “...WAITING FOR BREAK...” will be displayed. The Break is sent by pressing the two small black push buttons marked Load and Reset. MR-2900 panels have the Reset button inside the top of the Inner Door at the outer edge and the Load inside the bottom of the Inner Door. All other panels and annunciators have these buttons next to the service terminal port. To send the Break hold the Load button in, and press and release the Reset button. The Load button can then be released.

Two loader programs will be sent before the operating program is. There is no error recover in the sending of these two loaders. If an error occurs while loading either of these programs, the process will need to be started again. USB to serial port interfaces can cause problems. The second loader program will erase the operating program currently in the panel or annunciator, and then load the new operating program. There is error recover in this operation, so any errors introduced by a USB to serial interface will cause the panel to ask for a re-transmission of the data. MHI will show gauges as to how far along it is in the send. The panel or annunciator will display its current status on the LCD display. The panel or annunciator will automatically restart itself when finished.

Settings

The settings dialog allows you to view/change some basic program operating parameters (preferences). These settings will generally only need to be changed after the initial installation. Upgrading MHI does not change the settings. These will be saved by MHI if the **Ok** button is pressed. Press **Cancel** to lose any changes made. See *Appendix B: Settings* for a description of all the settings available.

File History

This lists the last four databases opened. Selecting one of these filenames will automatically open that database.

Exit Program 

This option ends MHI, closing the Main Window. The speed key <Alt-X> can used as well as the windows standard <Alt-F4>. To restart MHI, see the section **Starting MHI**.

2.6 System Menu

The System Menu contains options related to the editing, checking and downloading of system databases. The menu can be accessed by pressing <Alt-S>. It has the following options: View, Edit, Report, Download, Verify and Export.

View 

This option allows the user to view the information in the current database without having the ability to make any changes. The speed key <F5> can be used to access this option quickly. See the appropriate panel programming manual for a description of these windows.

Edit 

This option allows the user to edit the information in the current database. See the appropriate panel programming manual for a description of these windows. Choose Edit only if you wish to make changes to the current database. Note that even if no changes are made, the database will be updated at every window that you look at, and the last edit date will be updated. The database will have to be compressed and verified after an edit session before it may be downloaded into a panel. A database does not need to be verified in order to be edited or printed. MHI will automatically ask if you wish to verify the database after you close the **Edit Window**.

Report 

This option is used to create a printed version of the database. This can be either sent directly to a printer or to a file on disk for later review or printing.

The Report Dialog (see **Figure 2**) has options for selecting the format of the report and the destination.

Panel lists all the panels defined in the system. The high-lighted panel is the one printed by the **Print Selected Panel** button. Double clicking on a panel will also print the panel. This is not shown for Digitel databases.

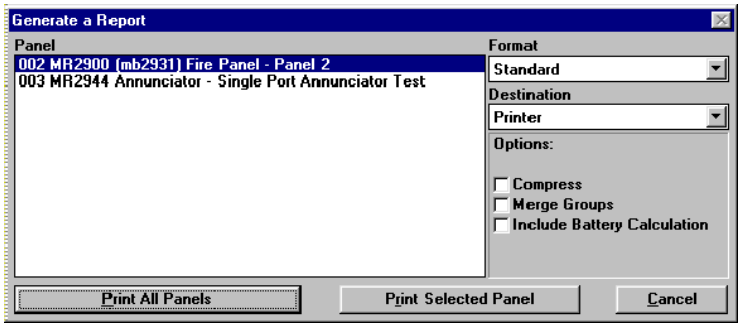


Figure 2: Report Dialog Box

Destination selects where the report is sent.

- **Printer:** Sends the report directly to a printer. This can be any printer that you have installed under Windows.
- **Disk:** Sends the report to a file on disk. A requester will be displayed to enter the file name. If the file exists, you will be asked whether you wish to replace it. A standard ASCII text file is generated.

Format selects the detail of the report. The options are:

- **Standard:** This lists all the outputs operated by each input. If an input does not operate a type of output, it will not print anything for that output type. For Digitel databases, this prints each entry and any lists associated with them.
- **Full:** This is a full listing that prints everything, including blank relates. This will be longer than the Standard Report.
- **Messages Only:** This lists just the panel and device definitions and the message assigned, but does not include any of the relates. For Digitel databases, this lists just the messages for each entry without the associated lists.
- **By Output:** Print a report ordered by all the outputs (LEDs, bells, relays, control modules) and listing all inputs that operate each. **Note:** Large databases may take a considerable amount of time to generate this format of report.
- **Parts List:** Prints a report that lists the total number of many components (ie. panels, modules, outputs, circuits, devices, etc.) found in the entire system and by individual panel.
- **Verification Sheet:** This creates a sheets listing of all addressable devices suitable for the Verification and Inspection of the system.
- **Blank Verification Sheet:** This creates a single sheet suitable for the Verification and Inspection of a system. No circuits or devices are listed. It is included so that items, such as conventional devices, bells, can be included on the same type of sheet as the addressable devices.
- **Battery Calculation Only:** Prints a report listing the battery capacity required for all panels and annunciators. Prior to generating the report, you will be prompted with a series of dialog windows, one for each panel, allowing you to enter supplemental load values and other information. This information will be stored in the database.

The **Print All Panels** push-button will print the entire system to the current destination.

The **Print Selected Panel** push-button will print the currently high-lighted panel in the Panel List to the current destination.

For Modul-R databases, the printout has a header on the top of each page listing the page number, the system being printed, the type of report and the date and time of the printout. The system section of the printout is first and includes all items that are programmed from the System Window. A line of asterisks separates the system section from the panel sections. A line of asterisks also separates panel sections from each other. Each panel section starts by listing all the information entered from the Panel Window. A line of dots separates the panel information from its first input point. A line of dots also separates the input points from each other. The input points are listed in circuit and device order from lowest to highest. Each input has listed its definition as well as its relates. These relates are the outputs, LEDs, relays, etc., that are operated when the input goes into an alarm state.

The check boxes modify the report as follows:

- **Suppress Headers:** When printing to a file, this option will suppress header information and page breaks. This is useful for comparing two printouts.
- **Compress:** This will cause the printer to print 132 columns of information instead of the standard 80 columns using a compressed font. This setting will save paper.

- **Merge Groups:** Modul-R databases only. This will cause the report to include any relates that are defined when utilizing the Group mechanisms, under any associated inputs. This will make your report longer. **Merge Groups** is automatically enabled if *By Output* format is chosen.
- **Include Battery Calculation:** Modul-R databases only. This will cause the report to include a battery calculation section. This section will be similar to the Battery Calculation type report. This section will list the battery capacity required for all panels and annunciators. Prior to generating a report including this section, you will be prompted with a series of dialog windows, one for each panel, allowing you to enter supplemental load values and other information.
- **Include Letterhead Space:** Allows for a 1¾" margin at the top of verification sheets for a company letterhead.
- **Include Control Modules:** Includes control modules in the Verification Sheets.
- **Merge Includes:** Digitel databases only. This will cause the report to include the entries from any included databases. This will make your report longer.
- **Print Defaults:** Digitel databases only. This will add the default messages to the printout. Normally the defaults are not changed at all so a printed record is usually not necessary, only when changes are made to them. This will make the report longer.

Before the printout is actually sent to the printer, a Print dialog is presented. This allows for changing your current printer selection (if you have more than one printer) and adjusting any printer dependent settings.

Download 

This option loads the current database into a control panel, annunciator, or Digitel. The database must be verified before it can be downloaded. If the system is not verified, the user is asked if the verification should be performed. If the verify is not done, or the system does not verify error free, a download will not be performed.

Notes:

1. The existing database in the unit will be erased before the new database is loaded.
2. MHI v21 can only download databases to v21 operating programs. When upgrading a panel to version 21, you must load the operating program first (see *Send Program* above).

Before selecting the panel database to be downloaded, the computer will have to be connected to the control panel or annunciator using an appropriate connecting cable. Connect the female end of the cable to the serial port on the computer (a 9 to 25 pin adapter may be required) and connect the male end to the service terminal port of the control panel. For MR-2900 Control Panels, the service terminal port is located at the bottom of the inner door assembly. It is the left hand connector of the pair of connectors at the bottom of the assembly, as viewed from the front of the panel. For MR-2400 Control Panels, the service terminal port is the left hand connector underneath the terminal strip. For MR-2200 Control Panels, the service terminal is located at the top of the main board. For annunciator panels, the service terminal port is at the bottom of the board. Ensure that MHI is using the correct serial port (see *Appendix B: Settings* for selecting the serial port).

MHI will ask for a passcode before it starts compiling the database. This is the Level 2 passcode for the panel and it will be sent to the panel as part of the download sequence.

Note: The panel MUST be in Privilege Level 2 (or higher) to accept the download command from MHI. If the panel is not in Privilege Level 2 when MHI sends the download command, you will need to start the download procedure again from the beginning.

Each panel in a network will need to have the database loaded separately. In a network, the Master Panel will contain the messages for all inputs. If MHI has identified the hooked equipment,

it will use the panel ID to choose the appropriate information to send. If the ID does not exist in the database, or the equipment cannot be identified, a Download Dialog containing a *Panel List* and **Download** and **Cancel** push-buttons is shown. Pressing **Download** will select the currently high-lighted panel in the Panel List to be compiled and downloaded. Double clicking on a panel in the list will also compile and download that panel. Compiling converts the database information into the form understandable by the panel or annunciator.

Before compiling the database, MHI will perform a number of checks to ensure that no unintentional changes are made. Errors will prevent downloading of the database; warnings require the user intervention to continue the download.

The following errors can be generated:

- **Equipment type does not match database panel type:** The panel is not the same type as the one listed in the database. Correct the database to reflect the correct hardware.
- **Equipment contains conflicting modules:** The Input Modules in the panel are not the same as the modules listed in the database. Correct the database to reflect the correct hardware.
- **Equipment outputs class does not match database panel output class:** The type of outputs in the panel is different than the one listed in the database. Correct the database to reflect the correct hardware.

The following warnings can be generated:

- **Equipment serial numbers do not match last panel's downloaded serial numbers:** The panel has a different serial number than the last panel that the database was loaded into. Each panel has a unique serial number assigned by the factory, which is recorded in the database after a successful download. Ensure that this is the correct database.
  Note: This warning will be generated if a new panel is installed, replacing a previous panel.
- **Last download date does not match database in equipment:** The date that the database was loaded into the panel does not match the date recorded in the database. This is indicative of multiple people downloading databases into the same panel.
- **Equipment sequence ID does not match database sequence ID:** The sequence ID of the database in the panel is not the one expected. Each time a database is loaded, the sequence number for the panel is incremented by one. This warning is indicative of multiple people downloading databases into the same panel.
- **Equipment database version does not match current database version:** The database version has changed between the last download and this download. A new operating program will also have to be sent to the panel (see the section *Send Program*). A "Database Mismatch" error on the panel will cause it to **IGNORE ALL INPUTS**.
- **Equipment ID does not match database panel ID:** The Panel ID of the panel is not the same as the ID of the requested database. Choose the correct database. A "No Database for This Panel" error on a panel will cause it to **IGNORE ALL INPUTS**.
- **Equipment contains conflicting modules:** The Input Modules in the panel are not the same as the modules listed in the database. The MR-2400 can change its Input Modules to match the database. The MR-2400 will need to be rebooted an additional time after the database download to get correct operation. If the MR-2400 does not automatically fix itself, correct the database to reflect the correct hardware. A "Hardware Mismatch" error on a panel will cause it to **IGNORE ALL INPUTS**.
- **Equipment has reported an illegal flash chip size. Program will assume 1 Meg chips:** The panel has reported a flash chip size MHI does not know about. Databases compiled for the 1 Meg chip size can be loaded into larger chip sizes with only a loss of total usable space.
- **Equipment does not have a network module installed. Current system requires a network:** The panel does not have an MR-2910 Network Board installed, but one is

required by the database. The panel will operate correctly, but in a stand-alone mode only. There will be troubles on the panel about the failed communications.

- **Un-confirmed hooked equipment. No download checks performed:** MHI was unable to determine what the hooked equipment is. This will be the case when upgrading from MHI versions previous to Version 4. The user is required to ensure that all information is correct.

After compiling the database, the following warnings can be shown:

- **Not enough memory in equipment to store database:** The database compiled to a size that will not fit in the memory reported by the panel. **Cancel the Download.** The panel will not operate if the database does not load correctly. More database memory will need to be added to the panel or annunciator. **Note:** If you need to add flash memory chips for the database, order the exact same ones (manufacturer and chip number) as already installed.
- **Not enough memory for append information:** The database compiled to size that does fit into the panel, but the upload information does not fit. You can safely continue the download. The panel will operate correctly, but you will not be able to upload from this panel at later date.

If compilation of the database is successful, MHI will initiate the database load to the Control Panel or Annunciator. **This will erase the previously loaded database before loading the new one.** The panel will Check, Pre-load and Erase before it requests the database information. MHI will start sending the database when the Control Panel/Annunciator finishes erasing. If any errors are encountered during the transmission, the panel will ask MHI to send the data again. This will cause error messages to be shown on the LCD. The Control Panel/Annunciator will automatically restart itself once the download is finished.

Notes:

1. MHI will not initiate a download if it is unable to determine the equipment.
2. Operating programs dated before 23 August 1995 will not recognize the download command from MHI.

Verify 

This option checks the current system database for errors, inconsistencies, unused outputs, unspecified inputs, etc. Verify will also remove references that are no longer valid. Verify generates a list of Notes, Warnings and Errors. While the verify is progressing, a gauge will be shown showing the progress of the current verify section. These sections are, in order, System, Panels, Switches, Groups, Inputs, Mix and Outputs. Some sections will be longer than others. Counters for the number of Errors and Warnings already generated are shown under the gauge. There is a maximum of five thousand entries that can be stored in the Verify List. If this limit is reached, a warning message is shown A dialog box will be displayed to allow for reviewing the list. This window can be maximized for easier reading. Errors will be shown in red, warnings in black and notes in grey. Once a **Verify List** is generated, the Verify List Dialog can be redisplayed by pressing the Verify List button on any of the view/edit windows. Each entry in the list includes an item number, message level (error, warning or note), message ID, and the message text. See *Appendix A* for a list and description of the numbered warnings and errors. **Note:** The Verify List is not stored as part of the database. It is lost when MHI is exited.

A system must Verify without any Errors before it can be downloaded into a Control Panel or Annunciator. Warnings do not prevent the downloading of the database, but generally indicate a condition that should be corrected. Some Warnings are generated in order to inform the user that Verify has made changes to the database.

Once a Verify has been done, the Verify List can be used to help correct any errors. The Verify List Dialog can be displayed by pressing the **Verify List** button on any editing window. The dialog will

remember its last screen placement and will reappear in this spot. This allows for the placement of the Map, Verify and Edit windows in such a way so that they may be viewed at the same time. The list can be scrolled to display the entries relevant to the current editing window. Once a correction has been made, the dialog box can be displayed again, if necessary, and the entry removed from the list. This allows for the user to know which errors still have to be corrected and which warnings still have to be dealt with. This process should be continued until all errors and warnings have been dealt with. **Note:** Removing the items from the list does not cause the database to become verified. The verify process will need to be executed again.

The Verify List Dialog shows up to five items at a time. The total number of items in the list is shown to the right of the push buttons.

The Verify List Dialog has the following push buttons:

- **Close:** Close the Verify List Dialog and return to the previous window. Entries in the list are retained. Press the **Verify List** button on any editing window to display the dialog box.
- **Save:** Saves the contents of the Verify List to a text file. Enter the filename into the requester box provided. This file may be printed or viewed using Windows Notepad or any other text editor.
- **Delete:** Remove the highlighted entry in the list. This can be done as corrections are made to the database.
- **Clr All:** Remove all entries from the Verify List. This will empty the Verify List until another Verify is performed.
- **Sort:** Display a dialog providing the selection of a sorting method and order. You may sort the verify list by item number (list initially sorted in this manner), by message level (errors first, warnings second, notes last), by message ID or by message text (alphabetically).
- **ReVerify:** Does a verification of the current database. A new verify list will be created.
- **Item Help:** Display a help window incorporating a more detailed description of the currently highlighted entry in the Verify List.
- **Gen. Help:** Display a help window incorporating a general description of the Verify dialog, which also provides a link to a complete list of all possible errors and warnings.

Export 

This option allows the user to create export files for use by the Secutron programs RAM-PART or GRID-II. This allows the user to enter information only once. The **Format** drop down list shows the supported programs. Select the one required. Press **Export** to create the export file. RAM-PART and GRID-II have commands for importing this file.

2.7 Help Menu

This provides access to both the MHI Help file and Windows Help system.

Contents

The main Contents page of the help file is displayed. Help can also be obtained by pressing <F1> at any point in MHI. This will provide context sensitive help. The help file consists of a text area that can be scrolled by using the scroll bar on the right or by using the <Page Up> and <Page Down> keys. The text will include underlined words that lead to further help. Press <Tab> until the underlined word changes background colour and press <Enter> or double click on the word to go to view the help for that topic.

Using Help

This brings up the standard Windows Help system providing general information how the Windows Help system works.

About MHI 

The About Box displays the program copyright information, the version number, database version number, the program date and time, etc. The About Box splash is displayed when MHI is first started. The **Options** button will list the options, such as upload and compare, that are enabled in your copy of MHI. If you have a keyed version of MHI the **New Key** button will also be shown. A new key would be issued to you if you purchase additional options for your MHI package.

2.8 Map Window

The Map Window displays a summary of the information in the current Edit window. The window, by default, is automatically updated. Automatic update may be disabled if desired under the **Settings** (see *Appendix B*). This may be desirable if you need to refer to the settings in one panel while working on another, or if you are working on a slower computer. Pressing the **Map** button will always update the Map Window.

The Map window is displayed by pressing the **Map** button on any of the edit windows. It can be closed by pressing its **Close** button. The Map window will automatically be closed if all edit windows are closed. The Map window will retain its position when it is closed. This allows for positioning of the Edit, Map and Verify windows into visually desirable locations.

The following table details what information the Map Window will display when updated by each of the different edit windows.

Edit Window	Map Window Displays
Circuits	Definitions of the Input Circuits
Devices	Sensor or Module defined for each Address on that Circuit
Entries	The Associated Lists for current Entry
Groups	List of defined Group Numbers and whether it has relates and/or a message defined for it.
Internal Circuits	Whether each internal circuit has relates or not for a single panel.
Panels	Show options settings
Relate	Outputs, LEDs, Relays, Control Modules operated on the current selected panel (from the panel list). The Merge Groups check box allows you to toggle whether associated Group relates are combined into the Map display information.
Switches	Summary of Switch settings. The actual relates are not shown.
System	Settings

3.0 Appendix A: Verify List Warnings and Errors

This list of warnings and errors also includes descriptions of probable causes and possible corrections. All messages are listed in numerical order.

NOTES:

1. A database cannot be downloaded into a control panel unless it verifies without any Errors.
2. Any Warning that notes a "DELETED" reference usually results from relationships that no longer exist, ie. unassigned outputs, deleted devices, etc. Verify makes the required corrections and saves the database automatically, providing the warning for your reference.
3. Any Error that results from a corrupted database may or may not be easily corrected. This will depend upon the amount of corruption in the database.
4. Certain warnings may be disabled. See *Appendix B Settings*.
5. Certain errors may be reduced to warnings. See *Appendix B Settings*.

ERROR 1: Message too long?

The message entered into the database is too long. Correct it to be 3 lines of 20 characters each.

WARNING 3: Message blank

The item does not have a message entered for it.

ERROR 4: Panel ID out of range

The panel ID's must be in the range 1 to 254. This is an abnormal error that may be due to database corruption.

ERROR 5: Next ID out of range

The value entered into the Next ID field of the Panel Window must be in the range 1 to 254. This is an abnormal error that may be due to database corruption.

ERROR 6: Link ID out of range

The values entered for single port links must be in the range 2 to 254. This is an abnormal error that may be due to database corruption.

ERROR 7: BAD panel type

The panel type is unknown. This is an abnormal error that may be due to database corruption.

ERROR 8: Common LED [*n*] out of range

The common zone LED of an Annunciator must be in the range of the LED count of the annunciator, or set to 0 for no common zone. This error can be caused by changing the LED count of the annunciator or by database corruption.

ERROR 10: BAD PORT setting

This is an abnormal error that may be due to database corruption.

ERROR 11: Device has mixed signal types

The control module is referenced by both reporting and non-reporting inputs. A control module cannot be operated by both types of inputs. Remove the reference to the control module from all inputs of one type.

ERROR 12: BAD LCD display setting

This is an abnormal error that may be due to database corruption.

ERROR 13: BAD MODULE setting: Slot *n*

The module for slot *n* is invalid. This is an abnormal error that may be due to database corruption.

WARNING 14: No modules defined

The Control Panel does not have any Input Circuit Modules defined. Select at least one module as installed. It is unusual for a panel to be used without any input devices connected to it.

ERROR 15: BAD output setting: Output *n*

Output *n* of the panel is incorrectly programmed. This is an abnormal error that may be due to database corruption.

WARNING 16: No outputs defined

All the panel outputs have been marked as Not Used. It is unusual for a panel to be used without any bell/releaser circuits being defined.

ERROR 17: BAD circuit type

The circuit type is unknown or does not correspond to your existing module/mode setting. This error may be caused if you have changed a module/mode setting which invalidates existing circuit type designations. This error may also be due to database corruption.

ERROR 18: BAD device type

The addressable device is an unknown type. This is an abnormal error that may be due to database corruption.

ERROR 19: BAD function type

The function of the input is invalid. This is an abnormal error that may be due to database corruption.

ERROR 20: Retard: out of range

The retard value set for a device must be in the range 0 to 60.

ERROR 21: No panels defined

A system must include at least one Control Panel. Select the **Panels** button on the System Window to define the first panel of the system.

ERROR 22: Panel *n*: Invalid NEXT ID

The Next ID of Panel *n* does not reference another double port panel. Set the Next ID to a double port panel that exists in the system.

ERROR 23: Panel *n*: NOT linked to network

Panel *n* is not referenced by any other panel in the network. For Control Panels and Annunciators using both ports, ensure that the panel is listed as the Next ID of another panel. For Annunciators using only a single port, ensure the annunciator is linked, using the **Links** button, to a Control Panel.

ERROR 24: Panel *n*: Invalid SINGLE PORT link *x*

Panel *n* lists a link to panel *x* that is invalid. Either panel *x* is not defined or is not a single port annunciator. Either correct or delete the reference. If the reference is correct, panel *x* needs to be defined as a single port annunciator.

ERROR 25: Panel *n*: Multiple-LINKED in Panel *x*

Panel *x* is linked more than once. Panel *n* is one of the panels linking it. This error will appear again identifying the other panel linking Panel *x*. Remove the reference to Panel *x* from either panel.

ERROR 26: Panel *n*: UN-LINKED

Panel *n* is not referenced by any panel as either Next ID or a link. Reference control panels and double port annunciators in another panel's Next ID and reference single port annunciators in another panel's Link area.

ERROR 27: Device MISSING

Either input to a Dual End-of-Line Resistor Circuit or a Smoke Detector and Contact Device Circuit is not properly defined. Go to the Input Circuits Window for the panel and finish defining the circuit.

WARNING 28: Input *n*:*c*: No devices found

Addressable circuit *c* on panel *n* is defined as used but does not have any devices listed. Either mark the circuit as unused or add devices to the circuit.

WARNING 29: Panel *n*: No circuits found

Panel *n* has no input circuits defined. It is unusual for a control panel to have Input Circuit Modules and then not use any of them.

ERROR 30: Panel *p*: LED *n* has mixed signal types

The LED is referenced by at least two of reporting signals, non-reporting inputs and switches. An LED can be operated by only one of these types. Remove the reference to the LED from all but one type.

WARNING 31: No relations found

The input point does not have any outputs related to it. Define some outputs (LEDs, Bells/Strobes, Relays, etc.) to the input point using the Relate Window.

WARNING 32: Relations to undefined panel *n* DELETED

Reference to non-existent Panel *n* has been removed and the database updated.

WARNING 33: Bad relay relation (Panel *n*) DELETED

Reference to a non-existent relay has been removed and the database updated.

WARNING 34: Out of range relay(s) found & DELETED

Reference to non-existent relay(s) has been removed and the database updated.

WARNING 35: Bad relations DELETED

Invalid relations have been removed and the database updated.

WARNING 36: Related outputs on panel *n* DELETED

Reference to unused outputs on Panel *n* has been removed and the database updated.

WARNING 37: Out of range output(s) found & DELETED

Reference to non-existent outputs has been removed and the database updated.

WARNING 38: Bad output relation (p:o *n*:*c*) DELETED

Reference to output *c* on Panel *n* has been removed and the database updated.

WARNING 39: Bad EVAC relation (Panel *n*) DELETED

Reference to Evac on Panel *n* has been removed and the database updated.

WARNING 40: Bad msg receive relation (Panel *n*) DELETED

Reference to Annunciator *n*, which does not have an LCD display, or does not exist, receiving messages has been removed and the database has been updated.

WARNING 41: Bad LED relation(s) (Panel *n*) DELETED

Reference to non-existent LEDs on Panel *n* has been removed and the database updated.

WARNING 42: Out of range LED(s) found & DELETED

Reference to non-existent LEDs has been removed and the database updated.

WARNING 43: Bad device relation (*n*:*c*:*d*) DELETED

Reference to non-existent addressable device *d* on circuit *c* on panel *n* has been removed and the database updated.

WARNING 44: Device has NO related inputs

The control module is not related to by any input. Determine which input is to operate the control module and update its relationships to include this control module.

ERROR 45: NOT annunciated LOCALLY

This input does not reference an LED on its own panel. Update the input's relationships to include at least one LED on its own panel.

ERROR 46: (FIRE) does not drive a BELL/STROBE

This fire input does not activate any bells or strobes. Update the input to include at least one Bell or Strobe, or select Evac on any panel with Bells and/or Strobes.

ERROR 47: Output *c* has NO related inputs

Output *c* on the panel is not referenced by any input. Either mark the output as Not Used or determine which input should relate to this output and update the relationship.

WARNING 54: Retard on DUAL EOLR device DELETED

A retard time was specified for the second switch of a Dual EOLR circuit. It was deleted from the database. The control panel will automatically use the retard from the first switch for the second switch.

WARNING 55: MSG Receive set on PAN:*n* without LED

Annunciator panel n receives messages from the input, but no LED is turned on. If the Annunciator will not have any LEDs attached to it in the field, this warning can be ignored. **Note:** Even if an annunciator does not have LEDs on it, assigning an LED is recommended to initiate the annunciator's buzzer.

WARNING 56: LED set on PAN:*n* without MSG Recv.

Annunciator panel *n* has an LED turned on by the input, but does not have a message sent to the LCD display. This warning is not given for annunciator panels that do not have an LCD display.

WARNING 57: ** DISABLED WARNING MSGS: *n* **

This warning is shown if any warning message are disabled with *n* listing the numbers of the warnings disabled. Not all warnings can be disabled.

WARNING 58: Single Port links DELETED

Invalid link references have been deleted and the database updated.

ERROR 59: BAD panel type associated to master ID

An annunciator cannot be the Master panel of a network. Choose a Fire Panel to be the Master panel.

ERROR 60: BAD master ID

The ID listed for the Master panel is not a defined fire panel. Choose a Fire Panel to be the Master panel.

ERROR 61: Can't open resource

This is an abnormal error that may be due to database corruption.

ERROR 62: BAD output class setting

The output class setting is invalid. This is an abnormal error and may be due to database corruption.

ERROR 63: Bad character(s) in message

Characters have been entered using one language and another has now been chosen. Not all special characters are supported by all languages.

WARNING 64: ** ERROR MSGS REDUCED TO WARNINGS: *n* **

This warning is shown if any error message has been reduced to a warning with *n* listing the numbers of the errors reduced. Not all errors can be reduced to warnings.

WARNING 65: Bad output #c set to NOT USED

Output type of output *c* was invalid and changed to Not Used.

ERROR 67: BAD BELL SYSTEM setting

The Bell System is an unknown type. This is an abnormal error that may be due to database corruption.

WARNING 68: Bell code DELETED

The bell code listed for the input is not used. It was removed and the database updated.

WARNING 69: Bell round DELETED

The bell round listed for the input is not used. It was removed and the database updated.

ERROR 70: INVALID Bell code

The entered bell code is invalid. Change the bell code to a valid sequence.

ERROR 71: INVALID Bell round

The entered bell round is invalid. Change the bell round to a valid number.

NOTE 74: Inserted internal circuit 0

Internal circuit 0 has been added to the database. This is required for correct operation of the panel.

ERROR 76: Trouble NOT annunciated LOCALLY

The wiring trouble for Addressable circuits, Smoke Detector and Contact Device circuits (Class H) and Dual End-of-Line circuits (Class E) require an LED be assigned on the panel they are located on. If the system does not have any LEDs defined, this error can be removed by ensuring that the *Local Annunciation* check box is NOT marked on the System Window.

WARNING 77: Retard DELETED

The Retard value listed for the device or circuit was no longer valid and removed.

WARNING 78: Verify DELETED

The Verify setting listed for the device or circuit was no longer valid and removed.

WARNING 79: Disabled maintenance alert DELETED

The device does not support Maintenance Alert and reference to it has been removed.

WARNING 80: Day sensitivity DELETED

The device does not support adjustable sensitivity.

WARNING 81: Night sensitivity DELETED

The device does not support adjustable sensitivity.

ERROR 83: Panel *p*: Relay *n* has mixed signal types

The relay is referenced by at least two of reporting inputs, non-reporting inputs and switches. A relay can only be operated by one type. Remove the reference to the relay from all but one type.

ERROR 84: Night sensitivity lower than day sensitivity

It is unusual to want a more sensitive detector during the Day, since there may be more air born particles stirred up by the presence of people.

WARNING 85: Non-local RELEASER relation (*p*:*r*) DELETED

The relationship to releaser *r* on panel *p* is not allowed and was removed.

WARNING 86: DUAL EOLR func. set to match 1st device

Both switches on a Dual End-of-Line Resistor circuit must have the same function. The editing screens will allow them to be different, but this is not supported.

WARNING 87: Panel *n*: No LEDS assigned

Control Panel *n* has no LEDs assigned to be turned on. It is unusual to have a control panel with LEDs and to not use them. This message will be shown for panels that have an MR-2614 Annunciator attached but not used as well.

WARNING 88: Panel *n*: No external LEDS assigned

The MR-2614 Annunciator attached to the control panel does not have any LEDs assigned to be turned on. It is unlikely that the MR-2614 Annunciator would be used without making use of the LEDs on it.

WARNING 89: Complex releaser(s) found & REDUCED

References to complex releaser operation (ie, fast, A, B) were found and complex releasers are not enabled for the system. The relations were set to normal operation and the database updated.

WARNING 90: Complex releaser relation (*n:r*) REDUCED

The output related does not support complex releaser function and has been changed to operate the output in a normal fashion.

ERROR 92: Releaser *n* only HALF activated

Releaser *n* on the panel is referenced only by either A or B inputs. Both types must reference the releaser. Either add the required half of operation or remove all reference to half operation.

ERROR 93: BAD SUBSEQUENT ALARM setting

The subsequent alarm setting is invalid. This is an abnormal error and may be due to database corruption.

ERROR 94: ABORT/HALT does not drive a RELEASER

Abort and Halt type inputs must reference at least one releaser circuit. Either select a releaser or change the input function.

ERROR 95: Hot LED [*n*] out of range

The Hot LED of an Annunciator must be in the range of the LED count of the annunciator, or set to 0 for no Hot LEDs. This error can be caused by changing the LED count of the annunciator or by database corruption.

ERROR 96: Common LED conflicts with Hot LED

The annunciator has the common LED zone assigned to one of the four Hot key indicator zones. These zones must be different if they are enabled. Change or disable one of these LEDs.

ERROR 97: BAD SYSTEM EVAC setting

The value for the system evacuation tone is invalid. This is an abnormal error and may be due to database corruption.

ERROR 98: Input *n*.*c*.*d*: Has multiple switch relates

An addressable detector can only be related to a single switch. Remove reference to the detector from all except one switch.

WARNING 99: Switch *n*: Timer entries found with no relates

Switch *n* has timer entries listed but did not relate to any devices. Relate at least one device to the switch. It is unusual for a switch to have a timer but have nothing to operate or affect based on those times.

ERROR 100: Duplicate time entries

There is more than one reference to a single time in the list for a switch. Only one reference to the time is allowed.

ERROR 101: Switch *n*: Must have an even number of time entries

An odd number of time entries are listed for switch *n*. This causes a mismatch of on and off times. Either add the missing time or remove the extra time.

WARNING 102: Switch relations to illegal panel *n* DELETED

The relationships to panel *n*, which does not exist, were deleted and the database updated.

ERROR 103: NOT annunciated ANYWHERE

This input does not reference an LED on any panel. Update the input's relationships to include at least one LED on any panel.

ERROR 104: Trouble NOT annunciated ANYWHERE

The wiring trouble for Addressable circuits, Smoke Detector and Contact Device circuits (Class H) and Dual End-of-Line circuits (Class E) require an LED be assigned on any panel.

NOTE 105: No LED annunciation points found. LED annunciation rules not enforced

There are no LEDs available in the system. This warning is shown as a reminder to confirm that there are to be no LEDs in the system.

ERROR 108: System language incompatible with annunciator

The annunciator does not support display of the special language characters. The annunciator will need to be upgraded or the language changed back to English.

ERROR 109: Network contains multiple rings

The Next ID settings do not form a single closed ring. Ensure that each panel has the correct panel listed as the Next ID.

WARNING 110: Network Resound requires network, setting reduced to Local

The Resound value of Network chosen is valid only for network systems. It has been changed to Local, which is used for standalone panels.

ERROR 111: Hot key routing cannot be VARIED on this panel type

MR-2924 and MR-2914 annunciators do not use the downloaded database though they do support Hot Key indication. Since they can only be Local or Global in nature, enter one of these values in for the use by panels that do use the downloaded database.

ERROR 112: Bad hot key routing

The value for the hot key routing tone is invalid. This is an abnormal error and may be due to database corruption.

WARNING 113: Deleted local panel reference in hot key routing

It is unnecessary to list a panel in its own list of hot key routing. All panels will always affect themselves.

ERROR 114: **DEMO VERSION** - Max. devices/circuits reached

The version of MHI you have is for Demonstration purposes only. It will not verify more than a small fixed number of addressable devices and conventional circuits. Obtain a full version of MHI.

ERROR 115: Illegal Group Msg number

The Group number listed for the message is not valid. Either change it to a single group that exists, create the group message, or remove the reference to a group message and enter an individual message.

ERROR 116: Group Msg number refers to blank or non-existent message

The Group number listed does not have a related message. Either define a message for the group, change the reference to a single group that has a message, or remove the reference to a group message and enter an individual message.

ERROR 118: Bad relations found (check Groups)

An invalid relationship has been found that cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 119: Bad relay relation (Panel *n*) found (check Groups)

Reference to a non-existent relay has been found that cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 120: Out of range relay(s) found (check Groups)

Reference to non-existent relay(s) has been found that cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 121: Related outputs on panel *n* found (check Groups)

Reference to unused outputs on Panel *n* has been found that cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 122: Complex releaser(s) found (check Groups)

References to complex releaser operation (ie, fast, A, B) were found and complex releasers are not enabled for the system. The relations cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 123: Out of range output(s) found (check Groups)

Reference to non-existent outputs cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 124: Complex releaser relation (*n:r*) found (check Groups)

The output related does not support complex releaser function and cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 125: Bad output relation (p:o *n*:*c*) found (check Groups)

Reference to output *c* on Panel *n* cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 126: Non-local RELEASER relation (*p*:*r*) found (check Groups)

The relationship to releaser *r* on panel *p* is not allowed and cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 127: Bad EVAC relation (Panel *n*) found (check Groups)

Reference to Evac on Panel *n* cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 128: Bad msg receive relation (Panel *n*) found (check Groups)

Reference to Annunciator *n*, which does not have an LCD display, or does not exist, receiving messages cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 129: Bad LED relation(s) (Panel *n*) found (check Groups)

Reference to non-existent LEDs on Panel *n* cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 130: Out of range LED(s) found (check Groups)

Reference to non-existent LEDs cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 131: Relations to undefined panel *n* found (check Groups)

Reference to non-existent Panel *n* cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 132: Bad device relation (n:c:d) found (check Groups)

Reference to non-existent addressable device *d* on circuit *c* on panel *n* cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 133: Group *g* reference undefined

Group *g* does not exist. Either remove the reference to it or define it.

WARNING 134: Bell No Restore option DELETED

The input does not use coded bells. The option has been removed and the database updated.

ERROR 135: Bell coded input does not relate to a Coded Bell

The input has been marked for coded bell operation but does not operate any coded bell circuit. Relate at least one coded bell circuit to the input or remove reference to coded bells.

ERROR 136: Bell coded input relates to Panel:*p* Evac

The input has been marked for coded bell operation but causes a second stage alarm on panel *p*. Either remove reference to the coded bell operation or remove the reference to Evac operation.

WARNING 137: Bad Bell relation(s) DELETED

Reference to invalid or non-existent bell settings have been removed and the database updated.

NOTE 138: Evac relation ADDED to local panel

The Evac relate has been added to Internal Circuit 0 of the panel. This is required for correct operation of the panel.

ERROR 139: Bad Bell relation(s) found (check Groups)

Reference to invalid or non-existent bell settings could not be removed. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or reorganize your Groups.

ERROR 140: Bad character(s) in banner/description message

Characters have been entered using one language and another has now been chosen. Not all special characters are supported by all languages.

ERROR 141: BAD Resound setting

The Resound setting is invalid. This is an abnormal error and may be due to database corruption.

WARNING 142: Fire initiating circuit/device has supervisory function...

You must obtain written authorization from the authority having jurisdiction

These two warnings are the same and always given together. Secutron does not recommend that smoke detectors be programmed for supervisory function. However, some jurisdictions require that duct detectors be supervisory function.

ERROR 144: Illegal line number

The line number for a transmitter is not valid. Delete the entry and create one with a valid number. Line numbers must be between 1 and 99.

WARNING 145: Atypical line number

The line number for a transmitter is outside the range of 1 to 96. Line numbers 97, 98 and 99 are used for custom features only. Check the programming notes that came with the SE 2000.

WARNING 146: Atypical transmitter number

The transmitter number is not one that is used for a real SE 2800 or SE 800 transmitter. Transmitters use numbers from 21 up and without zeros. Custom features of a program may dictate the use of atypical numbers. Check the programming notes that came with the SE 2000.

WARNING 147: Atypical zone number

The zone number is not one that is used by a real SE 2800 or SE 800 transmitter. SE 2800 transmitters use zones 0, 11 to19, 21 to 29, 31 to 39, 41 to 49, 51 to 59, 61 to 69, 71 to 79, 81 to 89 and 91 to 99. SE 800 transmitters use zones 0 to 7. Custom features of a program may dictate the use of atypical numbers. Check the programming notes that came with the SE 2000.

ERROR 148: Illegal board number

The board number is not valid. Board numbers must be between 1 and 99.

WARNING 149: Atypical board number

The board number is not in the range 1 to 10. Custom features of a program may dictate the use of atypical numbers. Check the programming notes that came with the SE 2000.

WARNING 150: Atypical pin number

The pin number portion of the entry code is not in the range 1 to 24. This may be required in your custom installation. Please check that the entry code is correct.

WARNING 151: Atypical panel number

The panel number portion of the entry code is non-standard. Typical panel numbers are in the range 1 to 254. This may be required in your custom installation. Please check that the entry code is correct.

WARNING 152: Atypical circuit number

The circuit number is greater than 99. Internal circuits have DHI generated defaults that will automatically be used for all device numbers. Custom features of a program may dictate the use of atypical numbers. Check the programming notes that came with the SE 2000.

WARNING 153: Atypical device number

The device number is not in the range 1 to 99, or 101 to 199. Check the programming notes that came with the SE 2000.

ERROR 154: BAD tag value

The tag value is unknown. This is an abnormal error that may be due to database corruption.

ERROR 156: BAD entry type

The entry type is unknown. This is an abnormal error that may be due to database corruption.

ERROR 157: BAD poll tag

The poll tag is unknown. This is an abnormal error that may be due to database corruption.

ERROR 158: Parent station missing

The station referenced by this entry does not have its own entry. Define the station or enter the correct station in the entry.

ERROR 159: Parent xmtr missing

The transmitter referenced by this entry does not have its own entry. Define the transmitter or enter the correct transmitter in the entry. **Note:** A transmitter is defined by its Station number, Line number and Xmtr number.

ERROR 160: Parent board missing

The board referenced by this entry does not have its own entry. Define the board or enter the correct board number in the entry. **Note:** A board is defined by its Station number and Board number.

ERROR 161: Parent panel missing

The Modul-R panel referenced by this Modul-R circuit does not have its own entry. Define the panel or enter the correct panel in the circuit.

ERROR 162: Parent circuit missing

The circuit referenced by this Modul-R device does not have its own entry. Define the circuit or enter the correct circuit in the entry. **Note:** A circuit is defined by its Panel number and Circuit number.

ERROR 163: Include system: *filename* is not found in current directory

The named included system *filename* does not have the file *filename*.DBA in the current directory. Copy or move *filename*.DBA into the same directory as the current database.

ERROR 164: Include system: *filename* is un-verified

MHI is unable to verify a database that includes unverified databases. Load the database *filename* into MHI and verify it. Then reload the current database to verify it.

ERROR 165: Can’t access include system: *filename*

The included database *filename* exists, but an error occurred trying to access it. Either it is being made unavailable by Windows, the file is not a database file, or the database is corrupted. Ensure the database is not being used by another program, or confirm that it is a valid, uncorrupted database.

ERROR 166: Error accessing system

This is an abnormal error that may be due to database corruption.

ERROR 167: Illegal station number

The station number is out of range. Station numbers must be in the range 0 to 254. Delete the station from the entries list.

ERROR 168: Illegal zone number

The zone number is out of range. Zone numbers must be in the range 0 to 99. Delete the zone from the entries list.

ERROR 169: Illegal pin number

The pin number is out of range. Pin numbers must be in the range 1 to 99. Delete the pin from the entries list.

ERROR 170: Illegal device number

A device number of 0 is not allowed. All circuit entries are for device 0 be definition. Remove the entry from the list.

ERROR 171: LED count out of range

The LED count for the specified panel is out of range. This is an abnormal error that may be due to database corruption.

ERROR 172: Input *n.c.d*: Related complex releaser conflict with merged groups

The releaser has multiple functions (On, Fast, A, or B) assigned to it for the input panel *n*, circuit *c*, device *d*. This can happen if different related groups have different function relates for the releaser, or if a function has been assigned to the releaser as part of the device relates that is different than the function assigned by the group relate(s). Check your programming logic and correct the group and device relates as required.

ERROR 173: Non bell coded input relates to a coded Bell

The input does not have a bell code defined for it but is related to a coded Bell output. Either define a bell code for the input or remove the reference to the coded bell.

ERROR 174: Illegal Hot Keys setting

The setting for one or more of the Hot Keys is not allowed. Change the Hot Key settings to allowed uses or to no function.

ERROR 175: Bad Hot Keys setting

The Hot Key setting is unknown. This is an abnormal error that may be due to database corruption.

ERROR 176: Duplicate Hot Key setting (*function*)

Two Hot Keys on the panel have been assigned *function*. Change one of the keys to a different function or to Not Used.

ERROR 177: No group association(s) found

The input does not have a group related to it and group association has been forced in the database. Assign a valid group to the input.

ERROR 178: BAD Alarm List Sequence setting

The Alarm List Sequence setting is unknown. This is an abnormal error that may be due to database corruption.

ERROR 179: BAD Disconnects setting

The Disconnects setting is unknown. This is an abnormal error that may be due to database corruption.

ERROR 180: BAD Banner Mode setting

The Banner Mode is unknown. This is an abnormal error that may be due to database corruption.

ERROR 181: BAD Buzzer Mode setting

The Buzzer Mode is unknown. This is an abnormal error that may be due to database corruption.

ERROR 182: BAD Bypass Privilege level setting

The Bypass Privilege Level is unknown. This is an abnormal error that may be due to database corruption.

ERROR 183: BAD Disconnect Privilege level setting

The Disconnect Privilege Level is unknown. This is an abnormal error that may be due to database corruption.

ERROR 184: BAD Coded Bell Speed setting

The Coded Bell Speed is unknown. This is an abnormal error that may be due to database corruption.

ERROR 185: Illegal Bell Inhibit setting

The value for the Bell Silence Inhibit time is not valid. Change it to a time between 0 and 120 seconds.

ERROR 186: Illegal Bell Timeout setting

The value for the Bell Timeout is not valid. Change it to a time between 2 and 10 minutes.

ERROR 187: Illegal Maintenance Margin setting

The value for the Maintenance margin is not valid. Change it to a value between 0 and 500.

ERROR 188: Illegal Maintenance Retard setting

The value for the Maintenance Retard time is not valid. Change it to a value of 5 to 50 scans.

ERROR 189: Illegal AC Fail setting

The value for the AC Fail trouble report delay is not valid. Change it to a value between 0 minutes and 30 hours, 0 minutes. **Note:** This time is dictated by the use of the panel. Please check local codes and the authority having jurisdiction for the correct range of values. Under normal situations, use a time of 1 minute.

ERROR 190: Illegal Smoke Detector Reset setting

The conventional Smoke Detector reset time is not valid. Change it to a value of 1 to 20 seconds. This time should be long enough to reset any conventional smoke detectors used by the system.

ERROR 191: Illegal Output *n* Delay setting

The delay time for Output *n* is not valid. Change it to a time of 0 to 180 seconds.

ERROR 192: Illegal Output *n* Duration setting

The duration time for Output *n* is not valid. For releasers, change it to a time of 5 seconds to 30 minutes, 0 seconds. For Aux Pwr, change it to a time of 0 to 30 seconds.

ERROR 193: Bad Output *n* Duration setting

The Duration setting for Output *n* is unknown. This is an abnormal error that may be due to database corruption.

ERROR 194: Bad Output *n* Delay/Cutoff setting

The Delay/Cutoff setting for Output *n* is unknown. This is an abnormal error that may be due to database corruption.

ERROR 195: Illegal Bell Cut-off setting

The time for Bell Cutoff (automatic silence) is not valid. Change it to a time of 0 to disable the automatic silence, or to a value between 5 and 30 minutes.

ERROR 196: Panel *n*: Blank Panel Banner

Panel *n* does not have a Banner defined for it, even though it is programmed to display it instead of the standard Banner. Either change the Banner selection for panel *n* or enter a Panel Banner.

ERROR 197: Panel *n*: Banner mode set to System Ban. but no System Banner message specified

The system does not have a Banner defined for it, even though panel *n* is programmed to display it instead of the standard Banner. Either change the Banner selection for panel *n* or enter a System Banner.

ERROR 198: BAD Alarm List Mode setting

The Alarm List Mode is unknown. This is an abnormal error that may be due to database corruption.

ERROR 199: Local annunciator specified with no IDs supervised

The *MR2614 Connect* is marked indicating that an MR-2614 annunciator is being used and you have not marked any annunciator IDs as being used. List the IDs of the annunciators that will be connected to the panel.

WARNING 200: No LCD and no LED count defined

The annunciator is programmed with neither LEDs nor an LCD display. It is unusual to use an annunciator and not have it display something. Enable the LEDs or LCD as required.

WARNING 201: Port 3 mode set to Local Ann. with no IDs supervised

The Port 3 setting is set for Local annunciator meaning that either the MR-2614 or MR-2644 annunciator, or both, are being used and you have not marked any annunciator IDs as being used. List the IDs of these annunciators that will be connected to the panel.

ERROR 202: Illegal Relay *n* Duration setting

The value for the duration of Relay *n* is not valid. Change it to a value of 0 seconds to 5 minutes, 0 seconds.

ERROR 203: Illegal Relay *n* Delay setting

The value for the delay of Relay *n* is not valid. Change it to a value of 0 to 60 seconds.

WARNING 204: Out of range Relay *n* settings DELETED

Reference to the non-existent relay *n* has been removed and the database updated.

WARNING 205: Hot Key assignable but no relations found

The Hot Key can be programmed to affect items, but none have been defined. This is unusual since this means the key does nothing. Assign items to the key.

ERROR 206: BAD Municipal Relays setting

The Municipal Relay setting is unknown. This is an abnormal error that may be due to database corruption.

WARNING 207: IDs defined with no local annunciator connect

You have listed MR-2614 IDs to be supervised by the panel, but there is no provision for them to be used. This is unusual to have annunciators attached to a panel and to not use them.

WARNING 208: IDs defined with no Local Ann. port 3 mode. IDs DELETED

The IDs listed for the MR-2614 and MR-2644 annunciators have been removed since the panel is programmed for another purpose on Port 3 and the database updated.

ERROR 209: Local annunciator specified with zero LED count

The MR-2614 annunciator has been set as having no LEDs. The MR-2614 annunciator has 8 LED zones built in to it. Set the number of LED zones to the number being used.

ERROR 210: Bell cutoff must be greater than bell timeout

The time listed for the bell cutoff is less than the time out to second stage. Change the values so that the timeout is less than the cutoff time.

WARNING 211: Relay *n* has NO related inputs. Any associated delay DELETED

Relay *n* is not operated by any input device and therefore does not use the delay value. This relay is available for the reset of 4 wire detectors.

ERROR 212: Illegal Fan Delay setting

The value for the Fan Delay is not valid. Change it to a valid value.

ERROR 213: Illegal Strobe Duration setting

The value for the panel's Strobe Duration is out of range. Change the value to 0 (zero) to disable this function or set the value between 10 and 120 seconds to use it.

WARNING 215: Group *n* has NO related inputs

Group *n* has not been related to be any input. It is unusual to define a group and then not make any use of it. Either assign the group to an input or delete the group.

ERROR 216: Local or remotely routed Manual Restart key required, but not found

The panel in question has outputs that have be assigned for manual restart operation. In order to satisfy this requirement, a Manual Restart key must be located on the local panel OR on a panel whose hot keys are routed to the panel in question.

WARNING 217: Manual Restart key assigned but unused

The panel in question has assigned a hot key for use in Manual Restart operation. The panel in question does not contain outputs assigned for manual restart. Neither do any panels that are part of the panel in question's Hot Key routing designations.

WARNING 218: Bad relay *n* mode, reset to FUNCTION

The panel in question had relay *n* set for an invalid mode of operation. The operational mode for the relay in question was changed to a standard FUNCTION type. This is an abnormal situation that may be due to database corruption.

ERROR 219: Multiple relays set with same municipal/common operation mode

The panel in question had multiple relays assigned to the same municipal/common operation. On applicable equipment only, you may specify a maximum of one relay per municipal/common function (ie. alarm, supervisory or trouble).

WARNING 220: Illegal relay *n* delay/duration setting DELETED

The panel in question had relay *n* which specified a delay or duration value where one was not required. Both delay and duration values were deleted. This is an abnormal situation that may be due to database corruption.

ERROR 221: Illegal relay relation(s) found (check Groups)

The input in question has relations made to a non-relatable relay. These relations will be found in one or more of the input's associated groups. Either, you must remove the problem group associations or edit their group relates.

WARNING 222: Illegal relay relation found & DELETED

The input in question has a relation made to a non-relatable relay. This relation was deleted. This situation can arise if you change the operational mode of a relay to a non-relatable type. All associated Relates will then become invalid.

WARNING 223: Manual Restart Trigger redundant

The input in question has the Trigger Manual Restart option set but the function is not required locally or hot key routing is not set to route the function to a panel that requires it.

ERROR 225: Addr. Releaser circ.dev only HALF activated

The complex addressable releaser module in question is referenced only by either an A or a B input. Both an A and a B input must reference the releaser. Either add the required half of operation or remove all reference to half operation.

WARNING 226: Non-local Addr. Releaser relation (*p.c.d*) DELETED

The relationship to this addressable releaser is not allowed and was removed.

WARNING 227: Complex Addr. Releaser (*p.c.d*) REDUCED

References to complex addressable releaser operation (ie, fast, A, B) were found and complex releasers are not enabled/allowed for the system/input. The relations were set to normal operation and the database updated.

ERROR 228: Non-local Addr. Releaser relation (*p.c.d*) found (check Groups)

The relationship to this addressable releaser, found through a group association, is not allowed. Remove the group relate or re-organize your groups.

ERROR 229: Illegal Addr. Releaser relation (*p.c.d*) found (check Groups)

References to complex addressable releaser operation (ie, fast, A, B) were found and complex releasers are not enabled/allowed for the system/input. Remove the illegal group relate or re-organize your groups.

ERROR 230: Illegal Delay setting

The device delay value is out of range. The allowable values for addressable Releaser type devices are 0 to 180 seconds.

ERROR 231: Illegal Duration setting

The device duration value is out of range. The allowable values for addressable Releaser type devices are 0 or 10 to 1800 seconds.

ERROR 232: Control Bells/Strobes cannot be used with Staged Bell System

If the bell system is set to staged, then control bells and control strobes are not allowed to be used.

ERROR 233: Bad addressable relation (*p.c.d*) found (check Groups)

Reference to device *d*, circuit *c* on panel *p* cannot be corrected. This is usually due to a Group including relates that are not valid for all devices that relate the Group. Either remove reference to the Group, remove relates from the Group, or re-organize your Groups.

ERROR 234: Panel *n*: Maximum number of expansion modules exceeded

Control Panel *n* is either an MR-2200 or MR-2HS-3100 panel. Output bells are limited to 8 and there are 2 bells per expansion module. Relays are limited to 16 and there are 4 relays per expansion module. There is a maximum of 3 total of the two types of expansion modules per panel, so if this message is received, reduce the number of output bells or relays.

Error 235: Groups must be enforced when using the dialer

The dialer uses the group number to determine how to send the alarm information to the monitoring station. Enforcing group relates will make MHI ensure that all inputs have a group.

Error 236: Illegal alarm list mode setting

For the proper working of the dialer, the alarm list mode must be chosen so that any panel with a dialer will receive all alarm list entries. If the dialer is on the master panel of the network, both Master and Global modes can be used, but not Local. If the dialer is not on the master panel, then Global must be chosen. If a dialer is used and there is no network, Local must be chosen.

Error 237: Pre-alarm LED relate conflict (check Groups)

The LED chosen to show that the panel is in a pre-alarm state has also been chosen for indicating another input condition. Assign a different LED to the input point. If the device does not use the pre-alarm LED directly, check the relates of any group that the input point uses.

4.0 Appendix B: Settings

The Settings dialog allows you to customizing how MHI operates. It incorporates a large number of controls. It is accessed from the Menu Bar by choosing *File/Settings*.

Port: This drop-down box is used to define the serial communications port through which MHI is to communicate with any externally connected equipment. Equipment must be connected using an appropriate cable. MHI will set the Terminal program to use this port.

Don't display About splash on startup: Check this option in order to go directly into MHI without displaying the About (information box) window.

Disable all communications: Check this option if you wish to disable all communications in MHI. In doing so, the serial port will be de-allocated and may be used by another program. The Status Bar will show the flag "DISABLED". Communications must be enabled in order to perform a Download or Send Program function. Use this option if MHI is being run on a desk-top system that will never be attached to a panel.

Disable sound effects: Check this option if you do not want MHI to notify you with verbal notifications about the status of your verification results.

Disable database information append: Check this option if you wish to prevent the Upload feature. Upload requires that extra information be included in the downloaded database. If this extra information is not included, the Upload feature will not work with the panel. This would be disabled for security reasons.

Automatically update Map window: Check this option if you wish the Map window be automatically updated when any changes are made, or when the Edit windows are opened or closed. This option is checked by default. If your system seems to be operating slowly when a Map window is displayed, un-check this option.

Automatically flush database in Edit/View: Check this option if you wish that an open database be flushed (ie. updated) after a short time (typically 5 minutes) when you are not accessing the database. This option is checked by default.

Keep temporary compiler file: Check this option in order to keep the temporary compiler file generated by a Download command. This option is included for R&D and trouble shooting purposes. It is not advised that you check this option unless instructed to.

Send Program Directory: If you want MHI to always look for programs in a specific directory, enter the directory path here. By leaving this box empty, MHI will look for programs in its own directory. The **Browse** button can be used to select this directory.

Startup Directory: If you want MHI to look for databases in a directory other than MHI directory, specify the directory path here. By leaving this box empty, MHI will look for databases in its own directory. The **Browse** button can be used to select this directory.

Disabled Warnings List: Enter a comma separated list of all warning numbers that you wish to be ignored during a verification. These will apply to all databases. **Note:** Not all warnings can be disabled.

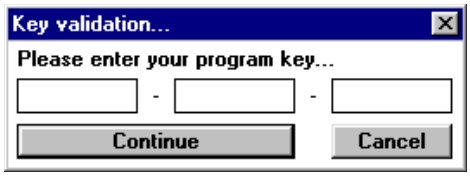
Reduced Errors List: Enter a comma separated list of all error numbers that you wish to be reduced to warnings during a verification. Use of this option is discouraged as it allows for situations that are not normally allowed in a fire alarm system. Since these apply to all databases generated by MHI, this should be used only when ALL DATABASES need this setting. **Note:** Not all errors can be reduced to warnings.

5.0 Appendix C: Keyed Versions of MHI and Keys

Starting with version 18 MHI is generally distributed in format that requires a key to operate. This key includes the information about the version, serial number and options enabled. The key is made up of 3 sets of 7 alphanumeric characters. An example would be:

ABCDEFG-1234567-TUVWXYZ

This key is actually invalid and cannot be used.



The first time a keyed version of MHI is run it will ask for the key. Enter the 3 sections of the key into the 3 boxes provided and then press Continue.

Updating the Key

If you purchase additional options for MHI you can add them to your existing installation by entering the new key provided. To enter the new key, choose from the menu bar *Help/About MHI* or choose the  button from the Tool Bar. Then press the **New Key** button. Enter the 3 sections of the key into the 3 boxes provided and then press **Continue**. You will need to exit MHI and restart it for the new options to take affect.

6.0 Appendix D: USB Support

Starting with MHI v19, changes were made to both MHI and the panel operating programs to facilitate the use of USB to serial adapters.

The principle problem was that the USB to serial interface would introduce errors into the data being sent to the panel. This would cause the panel to stop. To overcome this, the procedures that load operating programs and databases include error checking and can get re-transmission of data. The panel will show a message on the LCD each time an error is encountered.

There still can be a problem with the start of the operating program load since the initial two loaders do not have any error checking or recovery procedures. This is a limitation of the hardware. If either of these loaders has an error, the load procedure will stop. To recover, cancel the load, and start the procedure again. If you decide to try at a later time and need the panel to work again, press and release the black reset button by itself to reboot the panel.

Secutron's testing of this was done with the Belkin F5U103 USB to serial interface.

7.0 Appendix E: Languages

MHI supports French and Hungarian. The following letters are supported for inclusion in messages:

French		Hungarian	
Letter	Code	Letter	Code
â	0266	Å	0197
à	0224	á	0225
Ç	0199	É	0201
ç	0231	é	0233
é	0233	Ö	0214
ê	0234	ö	0246
è	0232	ó	0243
ï	0239	Ü	0220
î	0238	ü	0252
ô	0244		
û	0251		

The letters are entered into the messages by holding down the <Alt> key and entering the code on the numeric keypad on the right hand side of the keyboard. The leading zero must be included.

Note: The letters â, ô and û will be displayed as ä, ö and ü on the LCD display.

8.0 Appendix F: Operating Programs

Each panel and annunciator has a number of operating programs that can be used. The one used depends upon the requirements of the system. The following lists each panel and annunciator and the programs for it. Each program is listed with the change from the other programs.

8.1 MR-2900 (mb2931) Fire Alarm Control Panel

MR2-7.S28 Port 3: Communications to SE 2000 (old protocol)
MR2-7A.S28 Port 3: Communications to MR-2614 and MR-2644 Annunciators
MR2-7B.S28 Port 3: Communications to SE 2000 (New Protocol/Device Level)
MR2-7G.S28 Port 3: Communications to GRID
MR2-7E.S28 Port 3: Communications to MV-2700 voice evacuation panel

8.2 MR-2900 (mb2921) Fire Alarm Control Panel

MR2-3.S28 Port 3: Communications to SE 2000 (old protocol)
MR2-3A.S28 Port 3: Communications to MR-2614 Annunciator
MR2-3B.S28 Port 3: Communications to SE 2000 (New Protocol/Device Level)
MR2-3G.S28 Port 3: Communications to GRID
MR2-3E.S28 Port 3: Communications to MV-2700 voice evacuation panel

8.3 MR-2900 (mb2901) Fire Alarm Control Panel

MR-2.S28 Port 3: Communications to SE 2000 (old protocol)

8.4 MR-2200 Fire Alarm Control Panel

MR2-8E.S28 Port 3: Communications to MV-2700 voice evacuation panel
MR2-8G.S28 Port 3: Communications to GRID

8.5 MR-2400 Fire Alarm Control Panel

MR2-4.S28 Port 3: Communications to SE 2000 (old protocol)
MR2-4A.S28 Port 3: Communications to MR-2944 and/or MR-2934 Annunciator
MR2-4B.S28 Port 3: Communications to SE 2000 (New Protocol/Device Level)
MR2-4G.S28 Port 3: Communications to GRID
MR2-4E.S28 Port 3: Communications to MV-2700 voice evacuation panel

8.6 MR-2944 Annunciator

AN4.S19 Communications to MR-2900 panels
AN4A.S19 Communications to MR-2400 panels

8.7 MR-2934 Annunciator

AN3.S19 Communications to MR-2900 panels
AN3A.S19 Communications to MR-2400 panels

8.8 SE 2000 Systems

SV0.S28 Programs for main SE 2000 stations
SLU.S28 Programs for satellite stations
REM.S28 Programs for remote printers

Note: SE 2000 programs are custom. They are generally not included with MHI.

9.0 Appendix G: Troubleshooting

This section gives some solutions to some possible questions that you may encounter when attempting to run MHI. Please check this section before calling for technical support with a problem.

I have my database on a floppy disk, and program access to the database is very slow.

Copy the database to your hard drive and access it from there. Also, a disk caching program (such as SMARTDRV) will speed up access.

I can't find the EDIT option in the SYSTEM menu.

You are running a version of MHI that does not support database editing. If you require edit ability, you must obtain a full version of MHI.

I can't find the UPLOAD or COMPARE options in the FILE menu.

You are running a version of MHI that does not support Upload or Compare. If you require these features, you must obtain an upgraded version of MHI.

I can't get MHI or the Terminal to communicate/download with/to a panel.

1. Make sure that MHI is setup to communicate through the proper COM port. See the FILE/ SETTINGS menu option.
2. Make sure you are using a proper, undamaged, connecting cable, connected between the serial connector (9-pin) on the panel and your computer.
3. Try communicating via a different COM port on your computer.

10.0 Appendix H: Interface Cable

The interface between the Control Panel or Annunciator and the computer is an RS-232 setup. IBM computers have both 9-pin and 25-pin connectors. The panels and annunciators have 9-pin connectors.

The wiring required between the ends is shown below:

Panel (9-pin male plug)	Computer (9-pin female plug)	Computer (25-pin female plug)
2	2	3
3	3	2
5	5	7
All other pins are not connected.		

Note: The computer end needs either the 9-pin or 25-pin connection. Check the computer for which one it uses.

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