

USER'S GUIDE  
FOR THE  
EVENT RECORD MONITORING  
AND ANALYSIS SOFTWARE

Sentexsystems



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# **1 - EVENT RECORD MONITORING AND ANALYSIS (ERMA)**

## **SOFTWARE BASICS**

### **WHAT IS ERMA?**

Event Record Monitoring and Analysis™ software (referred to as ERMA for the remainder of this document) is a transaction analysis software which is to be used with your stand-alone or Multi-Link Sentex Infinity system. A "transaction analysis software" is a computer program which allows you to view, record, and analyze actions that have taken place on your Infinity system.

If you have little or no experience working with the transactions in your Infinity system, ERMA is the software for you. ERMA consists of the following features:

- Installs onto your personal computer's hard disk drive in a simple and easy manner.
- Stores up to 99,999 transactions at a single time on your computer's hard disk drive.
- Allows your computer to "capture" transactions in real time (as they occur on your system) or upon demand of the user for easy monitoring and viewing.
- Allows easy "filtering" of the transactions by code, name, date and time, action, and source.
- Allows you to print a list of the transactions to your computer's printer.

This user's guide is based on the assumption that you have some basic computer knowledge. If this is not true, it would be beneficial for you to read the manuals which came with your computer before moving ahead with this document.

For the sake of simplicity in the remainder of this document, a stand-alone Infinity system will be referred to as an Infinity system, an Infinity Multi-Link chain will be referred to as a Multi-Link system, and an individual Infinity Multi-Link unit within a chain will be referred to as a unit.

### **WHAT DO YOU NEED TO USE ERMA?**

To use ERMA, you will need:

- One of the following Sentex Systems:
  - 1) A Multi-Link system with version 3.16 firmware or higher in each unit of the system (firmware revisions that begin with a "4" or a "5" may not be used).
  - 2) An Infinity system with version 6.0 firmware or higher.
- An IBM PC-compatible computer with at least one serial port.
- A Hercules (monochrome), EGA (monochrome or color), or VGA (monochrome or color) display.
- One high density floppy disk drive and one hard disk drive.
- At least 3.3MB of space on your computer's hard disk drive for each Infinity system.
- 640K of RAM, of which at least 550K must be available for ERMA to use during operation.
- MS-DOS® version 3.3 or higher previously installed on your computer's hard disk drive.
- Sentex's MLP and/or SPS software previously installed on your computer's hard disk drive and set up with a system identity.
- In the CONFIG.SYS file, FILES should = "30" or more (for example, "FILES = 99").

## INSTALLING ERMA

You must make sure that ERMA has access to the SPS program. SPS should already be installed on the hard disk of your computer. To confirm that one of these programs are installed on the hard disk, at the DOS command line type either **cd\sp**s and the "RETURN" or "ENTER" key (from this point on, the "RETURN" or "ENTER" key will be referred to as the "ENTER" key). If you have SPS already installed, the DOS command line will show the hard drive you are in followed by the program name (for example, "C:\SPS>").

## INSTALLING FROM CD

### Installing Erma In Windows 95 Or 98

**Remember:** You must install ERMA-DOS into the same directory as SPS-DOS.

1. Insert the CD into your CD drive.
2. Click on the Start Menu.
3. Click on Settings.
4. Select Control Panel.
5. Click Add/Remove Program.
6. Click Install. Follow the prompts until Install asks for the application name.
7. Click Browse.
8. Open the ERMADOS folder.
9. Select SETUP.EXE.
10. Follow the prompts.

### Installing Erma In Windows 3.1 Or 3.11

**Remember:** You must install ERMA-DOS into the same directory as SPS-DOS.

1. From the Program manager, Run <drive>:\ERMADOS\SETUP.EXE.  
    <drive> is the letter of your CD drive  
    Example: D:\ERMADOS\SETUP.EXE
2. Follow the prompts.

## ACTIVATING THE ERMA PROGRAM

To start the ERMA program, make sure you are in the directory where ERMA was installed. When you installed ERMA onto your hard disk drive, the default setting of the installation would have placed ERMA in "C:\SPS" (or "C:\MLP" if you are using ERMA with MLP). If you changed the default setting during the installation, make sure you are in the directory where you installed ERMA (please refer to the manuals which came with your computer for instructions on how to change the working directory). Once you are in the proper directory, type in **erma** and the press "ENTER" key. You will then see a brief title page with the copyright notice. Press any key on your keyboard and ERMA will display the "FUNCTION CHOICES" menu (see figure 1 below).

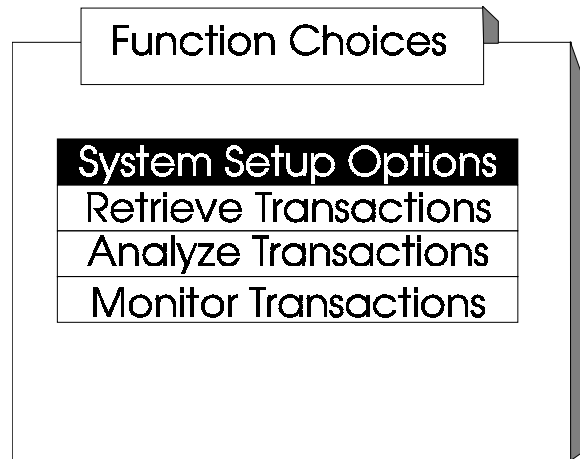


Figure 1 - Function Choices Menu

## EXITING THE ERMA PROGRAM

To exit ERMA, press the "ESC" key until you have returned to the DOS prompt. ERMA will automatically save all of the data that you have previously entered onto your hard disk drive.

**IMPORTANT NOTE:** Always exit out of the ERMA program before turning off your computer. Otherwise, the data you have entered may not be saved.

## TIPS FOR USING ERMA

In the sections that follow, detailed procedures are given for each required entry. In addition to these specific procedures, there are a number of general hints and rules which will help ensure that your use of the ERMA program is done in a correct and efficient manner. These hints are discussed below:

1. To move the highlighted bar within a menu (i.e., The FUNCTION CHOICES menu - see figure 1 above), use the arrow keys on your computer's keyboard.
2. To enter a menu area (i.e., The RETRIEVE TRANSACTIONS area of the FUNCTION CHOICES menu - see figure 1 above), move the highlighted bar over that area and press the "ENTER" key.

3. When you are in a menu area which allows you to filter the system's transactions (i.e. the RETRIEVE TRANSACTIONS area), use the arrow keys to move the cursor within a filtering area (i.e. the "Code" area). To move the cursor between filtering areas (i.e. from the "Code" area to the "Name" area), use the "TAB" key.
4. If you need help while you are in a menu area, press the <F1> key.
5. If you wish to exit an area, press the "ESC" key and ERMA will return you to the previous menu.
6. If you wish to exit the ERMA program, press the "ESC" key until you have returned to the DOS prompt.

## 2 - SETTING UP ERMA

### WHAT IS THE PURPOSE OF SETTING UP ERMA?

Before you begin using the ERMA program, you may wish to change the default settings in ERMA's System Setup Options. If you do not change these settings, the information displayed by ERMA may not be very informative. The information you enter about your system in the setup area will be stored by ERMA and will allow you to identify and access transactions from your system with ease. In most applications, you will only need to setup ERMA during the initial use of the program.

### SETTING UP A SYSTEM IDENTITY

The first step to setting up a system's identity is to access the area titled "SYSTEM SETUP OPTIONS" from the "FUNCTION CHOICES" menu (see figure 1 on page 3). Move the highlighted bar, with the use of the arrow keys, until the box titled "SYSTEM SETUP OPTIONS" is highlighted and press the "ENTER" key. Once you press the "ENTER" key, the "SYSTEM SETUP OPTIONS" menu will be displayed (see figure 2).

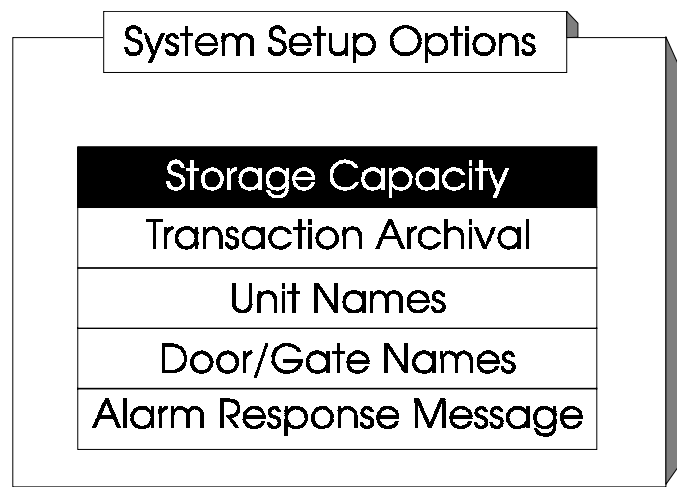


Figure 2 - The System Setup Options Menu

There are five sections to the "SYSTEM SETUP OPTIONS" menu. Each of these five sections need to be programmed before beginning the ERMA program. To access a setup area in this menu, move the highlighted bar, with the use of the arrow keys, until the desired section is highlighted and press the "ENTER" key. If you wish to exit any section and return to the "SYSTEM SETUP OPTIONS" menu without saving any of the changes that you have made, press the "ESC" key.

An explanation of the purpose/function and an example of a typical entry for each of the five sections are as follows:

1. **STORAGE CAPACITY:** This section allows you to set the number of transactions that will be stored by ERMA. You can program the system to store from 10 to 99,999 transactions at a single time. If you have a small number of transactions that will occur between each use of ERMA, you may want to program the storage capacity for a smaller number, such as between 100 to 500 transactions. This is for the reason that on some computers, large numbers of transactions will take a long period of time to retrieve from your system. If you have a large number of transactions that could occur between each use of ERMA, you may want to program the storage capacity for a larger number, such as 99,000 transactions.

The transaction storage capacity runs in a circular motion. For example, if you set the storage capacity for 500 transactions, the transaction recording will not stop at transaction number 500. The input that would be considered transaction number 501 will delete and replace transaction number 1. **The factory setting for this section is 99999.**

2. **TRANSACTION ARCHIVAL:** This section is not available in current versions of the ERMA software. When this section is activated in future software revisions, it will tell your computer to notify you when a certain percentage of the storage capacity has been filled. It will also ask you at that time if you would like to retrieve the transactions currently in ERMA's storage and to save them on a floppy disk. In current ERMA revisions, you are able to manually retrieve the transactions and save them onto a floppy disk, but the computer does not signal you when the storage capacity is reaching its limit or when it is a good time to save these transactions onto a floppy disk.
3. **UNIT NAMES:** This section allows you to name each of the units within your Infinity or Multi-Link chain. It is helpful to name each unit so that it will be easy to identify where each transaction has taken place. For example, if you name the unit controlling the entrances for Building #2 "UNIT 2", you will be able to easily retrieve or identify every transaction that has occurred at that unit. You would simply look for or retrieve the transactions which are labeled as "UNIT 2". Also, when you name each of the units, it makes it easier for you to filter and sort the transactions according to unit name.

When you are naming a unit, you will have one line of 18 characters to use for each unit name (see figure 3). Once you have entered the unit name, press the down arrow key to advance to the next unit. When you have entered names for all of the units in your system, press the "ENTER" key and ERMA will save and store these names. If you have made a mistake entering a name, use the arrow keys to move the cursor to the mistake and press the "DELETE" key (shown as "DEL" on some keyboards) until the mistake has been erased. There are no default settings for this section. If you have a stand-alone Infinity system, you will only need to give a name to unit 1.

| Unit | Name |
|------|------|
| 1    | —    |
| 2    |      |
| 3    |      |
| 4    |      |
| 5    |      |
| 6    |      |
| 7    |      |
| 8    |      |
| 9    |      |
| 10   |      |
| 11   |      |
| 12   |      |
| 13   |      |
| 14   |      |
| 15   |      |
| 16   |      |

Figure 3 - Unit Names Programming Screen

4. **DOOR/GATE NAMES:** Each of the units in your Infinity or Multi-Link system can control up to four door/gates. This section of the system setup allows you to name each of these doors/gates. It is helpful to name each door/gate so that transactions which have occurred at that door/gate can be easily identified and retrieved. For example, if you name the front door in Building #2 "DOOR 1", you will be able to easily identify every transaction that has occurred at that door. You would simply look for the transactions labeled as "UNIT 2 - DOOR 1".

When you are naming a door/gate, you will have one line of 18 characters for each door/gate name (see figure 4). Once you have entered a name, press the down arrow key to advance to the next door/gate. When you have completed your entries for each of door/gates in that unit, press the "PgDn" key to move on to the next unit. If you wish to return to the unit prior to the unit you are currently working on, press the "PgUp" key. Once you have finished naming all of the doors/gates for the Multi-Link chain, press the "ENTER" key. ERMA will save and store these entries and return you to the "SYSTEM SETUP OPTIONS" menu. If you have made a mistake while entering a name, use the arrow keys to move the cursor to the mistake and simply press the "DELETE" key (shown as "DEL" on some keyboards) until the mistake has been completely erased. If you have an Infinity system, you will only need to name the doors/gates for Unit 1. There are no default settings for this section.

| Door/Gate | Name |
|-----------|------|
| 1         |      |
| 2         |      |
| 3         |      |
| 4         |      |

<PgUp> prev. unit  
<PgDn> next unit

Figure 4 - Door\Gate Names Section Screen

5. **ALARM RESPONSE MESSAGES:** This section of the ERMA setup allows you to program the alarm response messages. The alarm response message is the warning message that will be displayed on your computer's screen when an alarm condition has been activated. In this section, you have the ability to program a different alarm response message for each door in every unit.

To program an alarm response message, make sure that the cursor is located in the message box for the door and unit you wish to program (see figure 5). There are 2 lines of 64 characters each for every alarm response message. When you are programming a message and you reach the end of the first line, ERMA automatically *wraps* your text to the beginning of the second line. If you wish to advance to the second line without having to reach to the end of the first line, simply press the "SPACE BAR" until the cursor is located at the beginning of the second line. Do not press the "ENTER" key to advance to the next line. If you press the "ENTER" key, the entries that you have made up to this point will be saved and you will be returned to the "SYSTEM SETUP OPTIONS" menu. Once you have completed your message for that door, press the "TAB" key to move the cursor forward to the next door's message box. If you wish to move the cursor back to the previous door's message box, press the "SHIFT" and the "TAB" keys at the same time. Once you have completed the messages for all of the doors in a unit, press the "PgDn" key to advance to the next unit. If you wish to return to the unit prior to the unit you are currently in, press the "PgUp" key. Once you have completed programming this entire section, press the "ENTER" key and you will be returned to the "SYSTEM SETUP OPTIONS" menu.



# **3 - RETRIEVING TRANSACTIONS WITH THE USE OF ERMA**

## **WHAT IS "RETRIEVING TRANSACTIONS"?**

Before you are able to view and analyze your system's transactions, you will first need to "retrieve" them from your Infinity or Multi-Link system. When you "retrieve" transactions from your Infinity/Multi-Link system, you are telling ERMA to copy the transaction record from your system's memory and then store that copy onto your computer's hard disk drive. Once this copy is stored on your computer's hard disk drive, you will be able to view and analyze these transactions with the use of ERMA.

When you are retrieving transactions from your system's memory, you have the ability to filter the transactions according to five categories; Code, Name, Date and Time, Action, and Source. For example, if you only wanted to retrieve the transactions that occurred at Unit 1 Door 1 and "lose" the transactions that occurred at all of the other units and doors, you would check the box labeled as "Unit 1 Door 1" in the Source box (see figure 6 on the following page). Once the retrieval process has been completed, only the transactions that occurred at Unit 1 Door 1 will be saved and displayed on your computer.

**PLEASE NOTE:** Since you will lose all transactions that you do not retrieve, it is highly recommended that you retrieve all of the transactions from your system's memory. You will be able to filter these transactions according to the same five previously mentioned categories in the analyzing section of ERMA.

## **RETRIEVING TRANSACTIONS FROM YOUR SYSTEM**

**IMPORTANT NOTE:** In previous versions of ERMA, when retrieving a currently invalid transaction from an Infinity System, ERMA would not acknowledge the current transaction. After many attempts, the Infinity System would terminate. All transactions up to and including the invalid transaction, would be unretrievable. An empty space in the transaction database would occur. The latest version of ERMA acknowledges two invalid transactions only. On the third transaction, ERMA will generate an "unretrievable" transaction.

The first step in retrieving transactions from your system's memory is to access the area labeled "RETRIEVE TRANSACTIONS" from the "FUNCTION CHOICES" menu (see figure 1 on page 3). Move the highlighted bar, with the use of the arrow keys, until the "RETRIEVE TRANSACTIONS" box is highlighted and press the "ENTER" key. Once you press the "ENTER" key, the "RETRIEVE TRANSACTIONS" screen will be displayed (see figure 6 on the following page). There are five areas in this screen. These areas allow you to filter the transactions which will be retrieved from your system. The purposes/functions for each of the five areas are discussed on the following pages.

**IMPORTANT NOTE:** Since you will lose all transactions that you do not retrieve, it is highly recommended that you retrieve all of the transactions from your system's memory. You will be able to filter the transactions that you have retrieved according to the same five categories in the analyzing section of ERMA.

While you are in the "RETRIEVE TRANSACTIONS" screen, you may perform the following actions:

- To move the cursor within a single area (i.e. the "CODE" area), use the arrow keys.
- To move the cursor from one area to another (i.e. from the "CODE" area to the "NAME" area), press the "TAB" key.
- To mark a box within an area (i.e. the "Granted" box in the "ACTION" area), place the cursor within that box and press the "SPACE BAR".
- To unmark a box within a certain area, place the cursor within that box and press the "SPACE BAR" again.

- If you want to exit the "RETRIEVE TRANSACTIONS" area and you do not want your entries to be saved, press the "ESC" key and you will be returned to the "FUNCTION CHOICES" menu.
- Once you have completed all of your entries, press the "ENTER" key and ERMA will save the entries that you have made and will begin the transaction retrieval process.

| Code                                    | Action                                      | Source                                                |
|-----------------------------------------|---------------------------------------------|-------------------------------------------------------|
| <input checked="" type="checkbox"/> All | <input checked="" type="checkbox"/> All     | <input type="checkbox"/> All                          |
| Begin <input type="text"/>              | <input type="checkbox"/> Granted            | <input checked="" type="checkbox"/> (Unit 1 - Door 1) |
| End <input type="text"/>                | <input type="checkbox"/> Invalid Card       | <input type="checkbox"/> (Unit 1 - Door 2)            |
|                                         | <input type="checkbox"/> Invalid Code       | <input type="checkbox"/> (Unit 1 - Door 3)            |
|                                         | <input type="checkbox"/> Invalid Time Zone  | <input type="checkbox"/> (Unit 1 - Door 4)            |
|                                         | <input type="checkbox"/> Wrong Door         | <input type="checkbox"/> (Unit 2 - Door 1)            |
|                                         | <input type="checkbox"/> Passback Violation | <input type="checkbox"/> (Unit 2 - Door 2)            |
|                                         | <input type="checkbox"/> Struck Out         | <input type="checkbox"/> (Unit 2 - Door 3)            |
|                                         | <input type="checkbox"/> Hung Up            | <input type="checkbox"/> (Unit 2 - Door 4)            |
|                                         | <input type="checkbox"/> Exit Request       | <input type="checkbox"/> (Unit 3 - Door 1)            |
|                                         | <input type="checkbox"/> Auto Unlock        | <input type="checkbox"/> (Unit 3 - Door 2)            |
|                                         | <input type="checkbox"/> Auto Lock          | <input type="checkbox"/> (Unit 3 - Door 3)            |
|                                         | <input type="checkbox"/> Door Ajar          | <input type="checkbox"/> (Unit 3 - Door 4)            |
|                                         | <input type="checkbox"/> Door Forced        | <input type="checkbox"/> (Unit 4 - Door 1)            |
|                                         | <input type="checkbox"/> Latch Strike       | <input type="checkbox"/> (Unit 4 - Door 2)            |
|                                         | <input type="checkbox"/> Cycle Strike       | <input type="checkbox"/> (Unit 4 - Door 3)            |
|                                         | <input type="checkbox"/> System Reset       | <input type="checkbox"/> (Unit 4 - Door 4)            |

Figure 6 - Transaction Retrieval Filter Screen

1. **CODE:** The "Code" area allows you to retrieve transactions according to either the directory code, entry code, or card code (depending on your system's configuration). To retrieve transactions for a group of codes, enter the first code of the series in the "Begin" box and the last code of the series in the "End" box. For example, if you only wanted to retrieve the transactions that have occurred for codes between 00400 and 00560 and lose the remainder of the transactions, you would enter 00400 in the "Begin" box and 00560 in the "End" box (see figure 7 below). If you only want to retrieve the transactions that have occurred for a single code, enter that code in both the "Begin" box and the "End" box (see figure 8 below).

| Code                                     |
|------------------------------------------|
| <input type="checkbox"/> All             |
| Begin <input type="text" value="00400"/> |
| End <input type="text" value="00560"/>   |

Figure 7 - Filtering A Series Of Codes

| Code                                     |
|------------------------------------------|
| <input type="checkbox"/> All             |
| Begin <input type="text" value="00125"/> |
| End <input type="text" value="00125"/>   |

Figure 8 - Filtering A Single Code

2. **NAME:** The "Name" area allows you to retrieve transactions according to the name associated with directory codes, entry codes, or card codes. To filter transactions alphabetically according to name, enter the first name alphabetically in the "Begin" box and the last name alphabetically in the "End" box. For example, if you only wanted to retrieve the transactions that have occurred for the names alphabetically between "ADAMS" and "JONES" and lose the transactions for all other names, you would enter "ADAMS" in the "Begin" box and "JONES" in the "End" box (see figure 9 on the following page). If you wish to retrieve only the transactions that have occurred for a single name and lose the remainder of the transactions, enter that name in both the "Begin" box and the "End" box (see figure 10 on the following page).

**PLEASE NOTE:** If you wish to retrieve transactions according to the name associated with entry codes or card codes, your system must have the "full control codes with names" option previously installed and programmed. Contact your installing dealer for information regarding the configuration of your system.

Figure 9 - Alphabetic Filtering  
A Series of Names

Figure 10 - Filtering A Single Name

3. **DATE AND TIME:** The "Date and Time" area allows you to retrieve transactions according to the date and time that the transaction has occurred. To filter the transactions according to the date and time, enter the beginning date and time in the "Begin" area and the ending date and time in the "End" area. When you make your first entry for the hour in the "Begin" area, ERMA will display a default setting for this area. To change this setting, simply type over the default setting. The hour, minutes, month, day, and year must all be entered as two digits. To change the time of day setting from A.M. to P.M., move the cursor to the "A" position of A.M. and press the "P" key. The setting should then read as P.M. To change the time of day setting from P.M. to A.M., move the cursor to the "P" position of P.M. and press the "A" key. The setting should then read as A.M. For example, if you wanted to retrieve the transactions that occurred between January 1, 1991 at 12:00 P.M. and February 1, 1991 at 3:00 A.M., you would enter "12:00 P 01/01/91" for the "Begin" area and "03:00 A 02/01/91" for the "End" area (see figure 11 below).

Figure 11 - Filtering Transactions By Date and Time

4. **ACTION:** The "Action" area allows you to retrieve messages according to the action that was taken by your Infinity/Multi-Link system. To filter the transactions according to the action taken by your system, mark the box found next to each action listed. You may choose more than one action in this area. For example, if you only want to retrieve the transactions which are invalid codes, invalid cards, or have been granted access, you would place an "X" in the boxes labeled "Invalid Code", "Invalid Card", and "Granted" (see figure 12 on page 13). To mark an action box, place the cursor in the box with the use of the arrow keys. Next, press the "SPACE BAR" once to mark the box. To unmark an action box, press the "SPACE BAR" again. A list and explanation of each action the system may take is defined in Table 1.

| <b>TYPE OF ACTION</b> | <b>DESCRIPTION</b>                                                                                                                                                                                                                                                      |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Granted               | Access to the building/complex was granted by either a tenant pressing a "9" or "5" on their telephone keypad or a valid card/entry code input.                                                                                                                         |
| Invalid Card          | An invalid card was presented to the card reader and access to the building/complex was denied.                                                                                                                                                                         |
| Invalid Code          | An invalid entry code was entered on the system's keypad and access to the building/complex was denied.                                                                                                                                                                 |
| Invalid Time Zone     | A card/entry code was presented to the system during a time it was not valid and access to the building/complex was denied.                                                                                                                                             |
| Wrong Door            | A card/entry code was used at a door where it was not valid and access to the building/complex was denied.                                                                                                                                                              |
| Passback Violation    | A card/entry code was used at a door/gate where it was denied access because it violated the Anti-Passback feature.                                                                                                                                                     |
| Struck Out            | An invalid entry code was presented to a device the programmed amount of times and it activated the strikes-and-out feature, therefore denying all inputs from that device for a 3 minute period.                                                                       |
| Hung Up               | A visitor placed a call to a tenant and either the tenant denied access to the visitor and disconnected the call by pressing the "S" key on their telephone keypad or the tenant exceeded the amount of time allowed for the call and the system disconnected the call. |
| Exit Request          | A tenant/visitor placed a request to leave the building/complex through the use of an exit request device.                                                                                                                                                              |
| Auto Unlock           | The system automatically unlocked a specified door/gate due to the pre-programmed Auto Lock/Unlock schedule being activated.                                                                                                                                            |
| Auto Lock             | The system automatically locked a specified door/gate due to the pre-programmed Auto Lock/Unlock schedule being deactivated.                                                                                                                                            |
| Door Ajar             | The specified door/gate has been held open for more than 1 minute.                                                                                                                                                                                                      |
| Door Forced           | The specified door/gate was forced open.                                                                                                                                                                                                                                |
| Latch Strike          | Someone has entered the system's programming mode and told the system to activate the relay for an unspecified amount of time.                                                                                                                                          |
| Cycle Strike          | Someone has entered the system's programming mode and told the system to activate the relay for a specified period of time.                                                                                                                                             |
| System Reset          | The system has reset due to a manual reset (through the use of programming step "52"), power surge, or power failure.                                                                                                                                                   |

**Table 1- An Explanation of Each Type of Action**  
(Found in the Action Box on the Transaction Retrieval Screen)

| Action                              |                    |
|-------------------------------------|--------------------|
| <input type="checkbox"/>            | All                |
| <input checked="" type="checkbox"/> | Granted            |
| <input checked="" type="checkbox"/> | Invalid Card       |
| <input checked="" type="checkbox"/> | Invalid Code       |
| <input type="checkbox"/>            | Invalid Time Zone  |
| <input type="checkbox"/>            | Wrong Door         |
| <input type="checkbox"/>            | Passback Violation |
| <input type="checkbox"/>            | Struck Out         |
| <input type="checkbox"/>            | Hung Up            |
| <input type="checkbox"/>            | Exit Request       |
| <input type="checkbox"/>            | Auto Unlock        |
| <input type="checkbox"/>            | Auto Lock          |
| <input type="checkbox"/>            | Door Ajar          |
| <input type="checkbox"/>            | Door Forced        |
| <input type="checkbox"/>            | Latch Strike       |
| <input type="checkbox"/>            | Cycle Strike       |
| <input type="checkbox"/>            | System Reset       |

Figure 12 - Filtering Transactions By Action

5. **SOURCE:** The "source" area allows you to retrieve transactions according to where the transaction has taken place. The "source" area will list the available sources according to the unit and door name which were given during the initial system setup. To filter the transactions according to the source, simply mark the box found next to the source you wish to choose. You may make more than one selection in this area. To mark a source box, place the cursor in the box with the use of the arrow keys. Next, press the "SPACE BAR" once to mark the box. To unmark a source box, press the "SPACE BAR" again. For example, if you wished to retrieve the transactions that have occurred in Unit 1 - Door 1, Unit 2 - Door 1, and Unit 3 - Door 1, simply mark the appropriate boxes (see figure 13 below).

| Source                              |                   |
|-------------------------------------|-------------------|
| <input type="checkbox"/>            | All               |
| <input checked="" type="checkbox"/> | (Unit 1 - Door 1) |
| <input type="checkbox"/>            | (Unit 1 - Door 2) |
| <input type="checkbox"/>            | (Unit 1 - Door 3) |
| <input type="checkbox"/>            | (Unit 1 - Door 4) |
| <input checked="" type="checkbox"/> | (Unit 2 - Door 1) |
| <input type="checkbox"/>            | (Unit 2 - Door 2) |
| <input type="checkbox"/>            | (Unit 2 - Door 3) |
| <input type="checkbox"/>            | (Unit 2 - Door 4) |
| <input checked="" type="checkbox"/> | (Unit 3 - Door 1) |
| <input type="checkbox"/>            | (Unit 3 - Door 2) |
| <input type="checkbox"/>            | (Unit 3 - Door 3) |
| <input type="checkbox"/>            | (Unit 3 - Door 4) |
| <input type="checkbox"/>            | (Unit 4 - Door 1) |
| <input type="checkbox"/>            | (Unit 4 - Door 2) |
| <input type="checkbox"/>            | (Unit 4 - Door 3) |
| <input type="checkbox"/>            | (Unit 4 - Door 4) |

Figure 13 - Filtering Transactions By Source

## UNRETRIEVABLE TRANSACTIONS

If ERMA fails to recognize an Infinity System transaction, it will generate an "unretrievable transaction", acknowledging that this particular transaction could not be retrieved.

## 4 - ANALYZING TRANSACTIONS WITH THE USE OF ERMA

### WHAT IS "ANALYZING TRANSACTIONS"?

Once you have your Infinity or Multi-Link system's transactions stored on your computer's hard disk, you are able to analyze them. When you analyze your system's transactions, you are able to filter, sort and print the retrieved transactions according to specific criteria and then view and analyze these transactions for your own purposes.

### FILTERING, SORTING, AND PRINTING TRANSACTIONS

The first step in analyzing your system's transactions is to access the area labeled "ANALYZE TRANSACTIONS" from the "FUNCTION CHOICES" menu (see figure 1 on page 3). Move the highlighted bar, with the use of the arrow keys, until the "ANALYZE TRANSACTIONS" box is highlighted and press the "ENTER" key. The "EVENT ANALYSIS" screen will be shown and will display a listing of the transactions retrieved (see figure 14 below). Also, in the upper right-hand corner, you will see the words "Sort", "Filter", and "Print". These are the different areas which you can program in this screen. To access these areas, simply press the first letter of the area you wish to access. For example, if you wanted to access the "Filter" area, you would press the "F" key. The purpose/functions for each of these areas are discussed in detail on the following pages:

|                        |                 |                       |             |              |  |
|------------------------|-----------------|-----------------------|-------------|--------------|--|
| System Name: ( JONES ) |                 | <b>EVENT ANALYSIS</b> |             | <F1> Help    |  |
| Sort Filter Print      |                 |                       |             | <ESC> Exit   |  |
| 100 Records            |                 |                       |             |              |  |
| Date and Time          | Source          | Code                  | Name        | Action       |  |
| 01/02/91 04:00AM       | unit 1 - door 1 | 00515                 | LARKIN, E.  | Granted      |  |
| 01/02/91 04:01AM       | unit 1 - door 4 | 00429                 | FROST, S.A. | Wrong Door   |  |
| 01/02/91 04:04AM       | unit 1 - door 2 |                       |             | Exit Request |  |
| 01/02/91 04:06AM       | unit 4 - door 1 | 06745                 | MAYFAIR, A. | Granted      |  |
| 01/02/91 04:10AM       | unit 3 - door 1 | 00876                 | LOCKMAN, J. | Granted      |  |
| 01/02/91 04:13AM       | unit 2 - door 2 | 84363                 |             | Invalid Code |  |
| 01/02/91 04:15AM       | unit 1 - door 1 | 73534                 |             | Invalid Card |  |
| 01/02/91 04:17AM       | unit 2 - door 1 | 00515                 | LARKIN, E.  | Granted      |  |
| 01/02/91 04:18AM       | unit 1 - door 1 | 00372                 | DAVIS, W.   | Granted      |  |
| 01/02/91 04:20AM       | unit 4 - door 1 | 84632                 |             | Invalid Code |  |
| 01/02/91 04:24AM       | unit 3 - door 2 | 07465                 | ESTRADA, N. | Granted      |  |

Figure 14 - The Analyze Transactions Screen

- 1. Filter:** The "filter" area allows you to choose what type of transactions you would like to have shown on the screen for your analysis according to five different categories; Code, Name, Date and Time, Action, and Source. For example, if you wanted to analyze the transactions that occurred for codes between 00400 and 00450, you would filter the retrieved transactions by entering "00400" in the "Begin" box of the "CODE" area and "00450" in the "End" box (see figure 15). The "filter" screen for analyzing transactions is similar to the filtering screen in the "RETRIEVE TRANSACTIONS" area, except you will not lose any of the transactions that you filter out, as you do in the "RETRIEVE TRANSACTIONS" area.

|                        |        |                 |            |              |                    |
|------------------------|--------|-----------------|------------|--------------|--------------------|
| System Name: { JONES } |        | EVENT ANALYSIS  |            |              | <F1> Help          |
| Sort                   | Filter | Print           | <ESC> Exit |              |                    |
| 100 Records            |        |                 |            |              |                    |
| Date and Time          |        | Source          | Code       | Name         | Action             |
| 01/02/91 04:00AM       |        | unit 1 - door 1 | 00432      | JONES, K.    | Granted            |
| 01/02/91 06:01AM       |        | unit 1 - door 4 | 00429      | FROST, S.A.  | Wrong Door         |
| 01/07/91 12:04AM       |        | unit 1 - door 2 | 00400      | HATFIELD, J. | Passback Violation |
| 01/02/91 04:06AM       |        | unit 4 - door 1 | 00445      | SMITH, S.    | Granted            |
| 01/01/91 08:10PM       |        | unit 3 - door 1 | 00416      | DOW, W.      | Granted            |
| 01/04/91 12:13PM       |        | unit 2 - door 2 | 00450      | ALVERADO, A. | Wrong Door         |
| 01/02/91 04:15AM       |        | unit 1 - door 1 | 00436      | HAMILTON, F. | Wrong Door         |
| 01/03/91 02:17PM       |        | unit 2 - door 1 | 00415      | SWANN, M.    | Granted            |
| 01/09/91 04:18AM       |        | unit 1 - door 1 | 00412      | WRAY, A.     | Granted            |
| 01/06/91 10:20AM       |        | unit 4 - door 1 | 00422      | AHLSTROM, J. | Passback Violation |
| 01/05/91 04:24PM       |        | unit 3 - door 2 | 00401      | HODOR, M.    | Granted            |

Figure 15 - Previously Retrieved Transactions That Were Filtered By Code

To access the "filter" area, press the "F" key while you are in the Event Analysis screen. A screen similar to the "RETRIEVE TRANSACTIONS" screen (see figure 6 on page 10) will be shown. There are five different areas to the "filter" screen. The purpose/function for each of these are discussed on the following pages.

While you are in the "filter" area, you may perform the following actions:

- To move the cursor within a single area (i.e. the "CODE" area), use the arrow keys.
- To move the cursor from one area to another (i.e. from the "CODE" area to the "NAME" area), move the cursor to the bottom of first area and press the "TAB" key.
- To mark a box within a certain area (i.e. the "Granted" box in the "ACTION" area), place the cursor within that box and press the "SPACE BAR".
- To unmark a box within a certain area, place the cursor within that box and press the "SPACE BAR" again.
- If you want to exit the "Filter" screen and you do not want your entries saved, press the "ESC" key and you will be returned to the "EVENT ANALYSIS" screen.
- Once you have completed all of your entries, press the "ENTER" key and ERMA will save the entries that you have made and will begin filtering the transactions according to the criteria you have entered.

- a. **CODE:** The "Code" area allows you to analyze the transactions according to either the directory code, entry code, or card code (depending on your system's configuration). To analyze transactions that have occurred for a group of codes, enter the first code of the series in the "Begin" box and the last code of the series in the "End" box. For example, if you only wanted to analyze the transactions that have occurred for card codes between 00400 and 00560, you would enter 00400 in the "Begin" box and 00560 in the "End" box (see figure 16 below). If you only want to analyze the transactions that have occurred for a single code, enter that code in both the "Begin" box and the "End" box (see figure 17 below).

Code

☐ All

Begin 00400

End 00560

Figure 16 - Filtering A Series Of Codes

Code

☐ All

Begin 00125

End 00125

Figure 17 - Filtering A Single Code

- b. **NAME:** The "Name" area allows you to analyze the transactions according to the name associated with the directory codes, entry codes, or card codes. To filter transactions alphabetically according to name, enter the first name alphabetically in the "Begin" box and the last name alphabetically in the "End" box. For example, if you only wanted to retrieve the transactions that have occurred for the names alphabetically between "ADAMS" and "JONES", you would enter "ADAMS" in the "Begin" box and "JONES" in the "End" box (see figure 18 below). If you wish to retrieve only the transactions that have occurred for a single name, enter that name in both the "Begin" box and the "End" box (see figure 19 below).

**PLEASE NOTE:** If you wish to analyze the transactions according to the name associated with entry codes or card codes, your system must have the "full control codes with names" option previously installed and programmed. Contact your installing dealer for information regarding the configuration of your system.

Name

☐ All

Begin Adams

End Jones

Figure 18 - Alphabetically Filtering  
A Series of Names

Name

☐ All

Begin Frost, S.

End Frost, S.

Figure 19 - Alphabetically Filtering  
A Single Name

- c. **DATE AND TIME:** The "Date and Time" area allows you to analyze transactions according to the date and time that the transaction occurred. To filter the transactions according to the date and time, enter the beginning date and time in the "Begin" area and the ending date and time in the "End" area. When you make your first entry for the hour in the "Begin" area, ERMA will display a default setting for this entire area. To change this setting, simply type over the default setting. The hour, minutes, month, day, and year must all be entered as two digits. To change the time of day setting from A.M. to P.M., move the cursor to the "A" position of A.M. and press the "P" key. The setting should then read as P.M. To change the time of day setting from P.M. to A.M., move the cursor to the "P" position of P.M. and press the "A" key. The setting should then read as A.M. For example, if you wanted to analyze the transactions that occurred between January 1, 1991 at 12:00 P.M. and February 1, 1991 at 3:00 A.M., you would enter "12:00 P 01/01/91" for the "Begin" area and "03:00 A 02/01/91" for the "End" area (see figure 20 on the following page).

**Date and Time**

☐ All

Begin  
12:00 Pm 01/01/91

End  
03:00 Am 02/01/91

Figure 20 - Filtering Transactions By Date and Time

- d. **ACTION:** The "Action" area allows you to analyze the transactions according to the action that was taken by your Infinity/Multi-Link system. To filter the transactions according to the action taken by your system, mark the box found next to each action listed. You may choose more than one action in this area. For example, if you only want to retrieve the transactions which are invalid codes, invalid cards, or have been granted access, you would place an "X" in the boxes labeled "Invalid Code", "Invalid Card", and "Granted" (see figure 21 below). To mark an action box, place the cursor in the box with the use of the arrow keys. Next, press the "SPACE BAR" once to mark the box. To unmark an action box, press the "SPACE BAR" again. A list and explanation of each action the system may take is defined in Table 1 on page 12 of this manual.

**Action**

☐ All

☒ Granted

☒ Invalid Card

☒ Invalid Code

☐ Invalid Time Zone

☐ Wrong Door

☐ Passback Violation

☐ Struck Out

☐ Hung Up

☐ Exit Request

☐ Auto Unlock

☐ Auto Lock

☐ Door Ajar

☐ Door Forced

☐ Latch Strike

☐ Cycle Strike

☐ System Reset

Figure 21 - Filtering Transactions By Action

- e. **SOURCE:** The "source" area allows you to analyze the transactions according to where the transaction has taken place. The "source" area will list the available sources according to the unit and door name which were given during the initial system setup. To filter the transactions according to the source, simply mark the box found next to the source you wish to choose. You may make more than one selection in this area. To mark a source box, place the cursor in the box with the use of the arrow keys. Next, press the "SPACE BAR" once to mark the box. To unmark a source box, press the "SPACE BAR" again. For example, if you wished to retrieve the transactions that have occurred in Unit 1 - Door 1, Unit 2 - Door 1, and Unit 3 - Door 1, simply mark the appropriate boxes (see figure 22 below).

**Source**

- ☐ All
- ☒ (Unit 1 - Door 1)
- ☐ (Unit 1 - Door 2)
- ☐ (Unit 1 - Door 3)
- ☐ (Unit 1 - Door 4)
- ☒ (Unit 2 - Door 1)
- ☐ (Unit 2 - Door 2)
- ☐ (Unit 2 - Door 3)
- ☐ (Unit 2 - Door 4)
- ☒ (Unit 3 - Door 1)
- ☐ (Unit 3 - Door 2)
- ☐ (Unit 3 - Door 3)
- ☐ (Unit 3 - Door 4)
- ☐ (Unit 4 - Door 1)
- ☐ (Unit 4 - Door 2)
- ☐ (Unit 4 - Door 3)
- ☐ (Unit 4 - Door 4)

Figure 22 - Filtering Transaction By Source

2. **Sort:** The "Sort" area allows you to organize the transactions once they have been filtered. When you filter your retrieved transactions, ERMA displays these transactions on your computer's screen, but they are not shown in any specific order. The "Sort" area allows you to organize the filtered transactions according to five different categories: Date and Time, Source, Code, Name, and Action. For example, if you previously filtered the transactions so that only the transactions that occurred for codes between 00400 and 00450 are displayed, they will be shown in the same disorganized manner that they are retrieved from your Infinity/Multi-Link system (see figure 15 on page 15). To organize these transactions so that they will be displayed according to the date and time that they occurred, you would mark the bubble next to the "Date and Time" selection of the "Sort" menu (see figure 23).

|                        |                 |                |              |                    |  |
|------------------------|-----------------|----------------|--------------|--------------------|--|
| System Name: ( JONES ) |                 | EVENT ANALYSIS |              | <F1> Help          |  |
| Sort Filter Print      |                 |                |              | <ESC> Exit         |  |
| 100 Records            |                 |                |              |                    |  |
| Date and Time          | Source          | Code           | Name         | Action             |  |
| 01/01/91 08:10PM       | unit 3 - door 1 | 00416          | DOW, W.      | Granted            |  |
| 01/02/91 04:00AM       | unit 1 - door 1 | 00432          | JONES, K.    | Granted            |  |
| 01/02/91 04:06AM       | unit 4 - door 1 | 00445          | SMITH, S.    | Granted            |  |
| 01/02/91 04:15AM       | unit 1 - door 1 | 00436          | HAMILTON, F. | Wrong Door         |  |
| 01/02/91 06:01AM       | unit 1 - door 4 | 00429          | FROST, S.A.  | Wrong Door         |  |
| 01/03/91 02:17PM       | unit 2 - door 1 | 00415          | SWANN, M.    | Granted            |  |
| 01/04/91 12:13PM       | unit 2 - door 2 | 00450          | ALVERADO, A. | Wrong Door         |  |
| 01/05/91 04:24PM       | unit 3 - door 2 | 00401          | HODOR, M.    | Granted            |  |
| 01/06/91 10:20AM       | unit 4 - door 1 | 00422          | AHLSTROM, J. | Passback Violation |  |
| 01/07/91 12:04AM       | unit 1 - door 2 | 00400          | HATFIELD, J. | Passback Violation |  |
| 01/09/91 04:18AM       | unit 1 - door 1 | 00412          | WRAY, A.     | Granted            |  |

Figure 23 - Filtered Transactions That Have Been Sorted

To enter the "Sort" area, press the "S" key while you are in the Event Analysis screen. A screen like the one shown in figure 24 below will be shown. While you are in this area, you may perform one of the following actions:

- To move the highlighted bubble between categories, use the arrow keys.
- To exit out of the "Sort" screen without saving the changes, press the "ESC" key.
- Once you have highlighted the chosen category, press the "ENTER" key and ERMA will save this entry and begin the sorting the process.

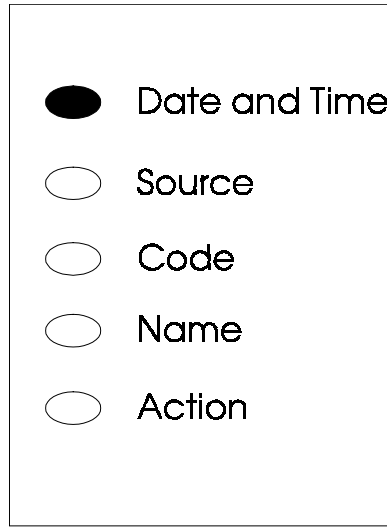


Figure 24 - The Sort Menu from the Analysis Screen

3. **PRINT:** If you have a printer connected to your computer's LPT1 port, the "Print" area will allow you to print the transactions shown on the Event Analysis screen. You may print the transactions before or after you have filtered and sorted them.

To print the transactions, press the "P" key while you are in the Event Analysis screen. As soon as you press the "P" key, ERMA will begin printing the transactions in the order they are displayed on your computer's screen. . If you do not have a printer connected to your computer or if there is a problem with the connection between the computer and the printer, ERMA will display a message stating, "Printer Time Out - Press Any Key to Continue".

# **5 - MONITORING TRANSACTIONS WITH THE USE OF ERMA**

## **WHAT IS "MONITORING TRANSACTIONS"?**

Depending upon your needs, you are most likely to be spending a majority of your time in the "MONITORING TRANSACTIONS" area of ERMA. When you are in the "MONITORING TRANSACTIONS" area, you are able to watch the transactions on ERMA as they occur on your Infinity or Multi-Link system (this is called "real-time" monitoring). ERMA will automatically retrieve and store these transactions onto your computer's hard disk drive as they occur. Also, as you are able to filter the transactions in the "RETRIEVE TRANSACTIONS" and "ANALYZE TRANSACTIONS" areas, you have the ability to filter the transactions you wish to view in the "MONITOR TRANSACTIONS" area.

**IMPORTANT NOTE:** You will not be able to monitor the transactions of an Infinity system through the use of the Infinity's internal modem. In order to monitor an Infinity system's transactions, you will have to make contact with the system using either an RS-232 direct connection or an external modem. For more information on connecting to your unit, see Infinity Installation Instructions with Multi-Link Firmware (Doc. No. 6001016), or the Infinity Installation Instructions without Multi-Link Firmware (Doc. No. 6001019).

## **MONITORING TRANSACTIONS ON YOUR SYSTEM**

The first step in monitoring your system's transactions is to access the area labeled "MONITOR TRANSACTIONS" from the "FUNCTION CHOICES" menu (see figure 1 on page 3). Move the highlighted bar, with the use of the arrow keys, until the "MONITOR TRANSACTIONS" box is highlighted and press the "ENTER" key. Once you press the "ENTER" key, a filtering screen similar to the "RETRIEVE TRANSACTIONS" screen will be displayed (see figure 6 on page 10). There are five different categories in which you can filter the transactions you wish to monitor. The purposes/functions for each of the five categories are discussed in detail on the following pages. While you are in the "filtering" area of the "MONITOR TRANSACTIONS" section, you may perform the following actions:

- To move the cursor within a single area (i.e. the "CODE" area), use the arrow keys.
- To move the cursor from one area to another (i.e. from the "CODE" area to the "NAME" area), move the cursor to the bottom of the first area and press the "TAB" key.
- To mark a box within a certain area (i.e. the "Granted" box in the "ACTION" area), place the cursor within that box and press the "SPACE BAR".
- To unmark a box within a certain area, place the cursor within that box and press the "SPACE BAR" again.
- If you want to exit the "Filter" screen and you do not want your entries saved, press the "ESC" key and you will be returned to the "FUNCTION CHOICES" menu.
- Once you have completed all of your entries, press the "ENTER" key and ERMA will save the entries that you have made and will begin filtering the transactions according to the criteria you have entered.

**IMPORTANT NOTE:** If you choose to filter the transactions that you monitor, all of the transactions that have been "filtered out" will not be saved on your computer's hard disk drive, therefore being "lost" in the system and cannot be retrieved. Hence, it is highly recommended that you monitor all of your system's transactions. You can filter these transactions according to the same criteria when you are in the "ANALYZE TRANSACTIONS" screen.

1. **CODE:** The "Code" area allows you to monitor the transactions according to either the directory code, entry code, or card code (depending on your system's configuration). To analyze the transactions for a group of codes, enter the first code of the series in the "Begin" box and the last code of the series in the "End" box. For example, if you only wanted to monitor the transactions that have occurred for card codes between 00400 and 00560, you would enter 00400 in the "Begin" box and 00560 in the "End" box (see figure 25 below). If you only wanted to monitor the transactions that have occurred for a single code, enter that code in both the "Begin" box and the "End" box (see figure 26 below).

Code

☐ All

Begin 00400

End 00560

Figure 25 - Filtering A Series of Codes

Code

☐ All

Begin 00125

End 00125

Figure 26 - Filtering A Single Code

2. **NAME:** The "Name" area allows you to monitor the transactions according to the name associated with the directory codes, entry codes, or card codes. To filter transactions alphabetically according to name, enter the first name alphabetically in the "Begin" box and the last name alphabetically in the "End" box. For example, if you only wanted to monitor the transactions that occur for the names alphabetically between "ADAMS" and "JONES", you would enter "ADAMS" in the "Begin" box and "JONES" in the "End" box (see figure 27 below). If you wish to monitor only the transactions that occur for a single name, enter that name in both the "Begin" box and the "End" box (see figure 28 below).

**PLEASE NOTE:** If you wish to analyze the transactions according to the names associated with entry codes or card codes, your system must have the "full control codes with names" option previously installed and programmed. Contact your installing dealer for information regarding the configuration of your system

Name

☐ All

Begin Adams

End Jones

Figure 27 - Alphabetically Filtering A Series of Names

Name

☐ All

Begin Frost, S.

End Frost, S.

Figure 28 - Alphabetically Filtering A Single Name

3. **DATE AND TIME:** The "Date and time" area allows you to monitor transactions according to the date and time that the transaction occurs. To filter the transactions according to the date and time, enter the beginning date and time in the "Begin" area and the ending date and time in the "End" area. When you make your first entry for the hour in the "Begin" area, ERMA will display a default setting for this entire area. To change this setting, simply type over the default setting. The hour, minutes, month, day, and year must all be entered as two digits. To change the time of day setting from A.M. to P.M., move the cursor to the "A" position of A.M. and press the "P" key.

The setting should then read as P.M. To change the time of day setting from P.M. to A.M., move the cursor to the "P" position of P.M. and press the "A" key. The setting should then read as A.M. For example, if the current date and time is January 1, 1991 at 12:00 P.M. and you wish to monitor the transactions that occur between now and February 1, 1991 at 3:00 A.M., you would enter "12:00 P 01/01/91" for the "Begin" area and "03:00 A 02/01/91" for the "End" area (see figure 29 below). The transactions will discontinue monitoring at 3:01 A.M. on February 1, 1991, but you will be able to retrieve the transactions that occur after 3:01 A.M. in the "RETRIEVE TRANSACTIONS" area of ERMA.

Figure 29 - Filtering Transactions By Date and Time

4. **ACTION:** The "Action" area allows you to monitor the transactions according to the actions that is taken by your Infinity/Multi-Link system. To filter the transactions according to the action taken by your system, mark the box found next to each action listed. You may choose more than one action in this area. For example, if you only want to monitor the transactions that are invalid codes, invalid cards, and granted access, you would place an "X" in the boxes labeled "Invalid Code", "Invalid Card", and "Granted" (see figure 30 below). To mark an action box, place the cursor in the box with the use of the arrow keys. Next, press the "SPACE BAR" once to mark the box. To unmark an action box, press the "SPACE BAR" again. A list and explanation of each action the system may take is defined in Table 1 on page 12 of this manual.

Figure 30 - Filtering Transaction By Action

5. **SOURCE:** The "Source" area allows you to monitor the transactions according to where the transaction has taken place. The "Source" area will list the available sources according to the unit and door name which were given during the initial system setup. To filter transactions according to the source, simply mark the box found next to the source you wish to choose. You may make more than one selection in this area. To mark a source box, place the cursor in the box with the use of the arrow keys. Next, press the "SPACE BAR" once to mark the box. To unmark a source box, press the "SPACE BAR" again. For example, if you wished to monitor the transaction that have occurred in Unit 1 - Door 1, Unit 2 - Door 1, and Unit 3 - Door 1, simply mark the appropriate boxes (see figure 31 below).

Source

☐ All  
☒ (Unit 1 - Door 1)  
☐ (Unit 1 - Door 2)  
☐ (Unit 1 - Door 3)  
☐ (Unit 1 - Door 4)  
☒ (Unit 2 - Door 1)  
☐ (Unit 2 - Door 2)  
☐ (Unit 2 - Door 3)  
☐ (Unit 2 - Door 4)  
☒ (Unit 3 - Door 1)  
☐ (Unit 3 - Door 2)  
☐ (Unit 3 - Door 3)  
☐ (Unit 3 - Door 4)  
☐ (Unit 4 - Door 1)  
☐ (Unit 4 - Door 2)  
☐ (Unit 4 - Door 3)  
☐ (Unit 4 - Door 4)

Figure 31 - Filtering Transactions By Source

## 6. VIEWING TRANSACTION RECORDS ON AN INFINITY SYSTEM

1. On an Infinity System, whenever a transaction occurs, the Infinity sends a record of that event to a transaction buffer where it is stored. If your Infinity is equipped with a printer, each record will be printed in a single line format as shown below: If your system is not equipped with a printer, the transactions can still be viewed on your display by performing programming step 23-4.

| TIME     | DATE     | INPUT SOURCE | CODE | NAME      | ACTION  | REASON |
|----------|----------|--------------|------|-----------|---------|--------|
| 09:12 AM | 07/08/96 | KEYPAD 1     | 1164 | CODE 1164 | GRANTED |        |
| 09:11AM  | 07/08/96 | PRGM-M1      |      |           |         |        |

2. INPUT SOURCE tells you the input source that generated the transaction and what programming transaction was generated. The chart below describes the input source and the programming transactions. Note that the transaction numbers of 0 through 2 indicate off-line changes using TAP, SPS, or MLP, while transaction numbers 4, 5, 8, and 9 indicate on-line changes

SOURCE  
 K = KEYPAD  
 H = HANDHELD  
 M = MODEM  
 D = DIRECT CONNECT  
 P = PHONE, DTMF, REMOTE

#### PROGRAMMING TRANSACTION

|              |                                |
|--------------|--------------------------------|
| 0 = off-line | MEMORY COPY                    |
| 1 = off-line | MEMORY FULL RELOAD             |
| 2 = off-line | MEMORY PARTIAL RELOAD          |
| 4 = on-line  | MEMORY CHANGE                  |
| 5 = on-line  | MEMORY CHANGE AND CLOCK CHANGE |
| 8 = on-line  | MEMORY RESORT                  |
| 9 = on-line  | MEMORY RESORT AND CLOCK CHANGE |

**NOTE:** On-line programming that does not change the system memory (e.g., making a printout) will not be recorded. Changing the clock will be recorded as an on-line change.

3. CODE will either be a person's entry code, a person's card code, or the directory code of the person called.
4. ACTION tells you whether access was granted or denied, and if it was denied, why. It will also print the word **Alarm** if the door has been broken open or if someone causes the "Strikes-and out" feature to be invoked (see area 06 on page 13 for further discussion of this feature).

## **6 - ERROR MESSAGES AND THEIR MEANINGS**

| ERROR MESSAGE                                                                                                                                   |                              | POSSIBLE MEANINGS                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| File open failure                                                                                                                               |                              | -- This message indicates that the number of files portion of your computer's "CONFIG.SYS" file is non-existent or is set for less than 30 files. Contact your computer technician to edit this file.                                                                     |
| File create failure                                                                                                                             |                              | -- This message may indicate that ERMA's files are being stored in your computer's root directory and the maximum number of files has been exceeded. Contact your computer technician to help troubleshoot the problem.                                                   |
| File close failure                                                                                                                              |                              | -- This message indicates that ERMA is experiencing problems in closing the file. Terminate the ERMA program and call your computer technician. Have your computer technician run a disk integrity program on the storage medium.                                         |
| File read failure                                                                                                                               |                              | -- This error message indicates that there is a corrupted file in the current directory. Exit out of ERMA and restart the program again. If you continue to experience problems, contact your installing dealer.                                                          |
| File seek failure                                                                                                                               |                              |                                                                                                                                                                                                                                                                           |
| File write failure                                                                                                                              |                              | -- This message indicates that there is not enough space on your computer's disk. Verify that there is enough space on your computer's disk. If you continue to experience problems, call your computer technician.                                                       |
| Invalid range setting.<br>Entry is out of range.<br>The begin range must be less than the end range unless the end range is zero (0)(or blank). |                              | -- This message indicates that an invalid value has been entered. Refer to the appropriate area of this manual for the value range and change your entry accordingly.                                                                                                     |
| The Transaction Archival function<br>is not currently supported                                                                                 |                              | -- This message indicates that this feature is not available in your version of ERMA.                                                                                                                                                                                     |
| Unable to allocate new memory                                                                                                                   |                              | -- This message indicates that ERMA needs more memory than what your computer is able to provide. Call your computer technician to free up some of your computer's executable memory.                                                                                     |
| Block boundary error                                                                                                                            | Header write failure         | -- These messages indicate that there are database errors. To correct this problem, you will need to delete the ERMA.SYS file and all of the .DAT database files in the directory you are currently working in. You will then need to re-install ERMA onto your computer. |
| Block file is not open                                                                                                                          | Incomplete block file header |                                                                                                                                                                                                                                                                           |
| Block read failure                                                                                                                              | Incorrect lock type          |                                                                                                                                                                                                                                                                           |
| Block write failure                                                                                                                             | Internal blkio error         |                                                                                                                                                                                                                                                                           |
| Btree is corrupt                                                                                                                                | Internal btree error         |                                                                                                                                                                                                                                                                           |
| Btree is not open                                                                                                                               | Internal Cbase error         |                                                                                                                                                                                                                                                                           |
| Buffering is off                                                                                                                                | Internal lseq error          |                                                                                                                                                                                                                                                                           |
| Buffering is on                                                                                                                                 | Key file creation failure    |                                                                                                                                                                                                                                                                           |
| Cbase is corrupt                                                                                                                                | Lseq is corrupt              |                                                                                                                                                                                                                                                                           |
| Cbase is not open                                                                                                                               | Lseq not open                |                                                                                                                                                                                                                                                                           |

---

#### ERROR MESSAGE

|                             |                           |
|-----------------------------|---------------------------|
| Database cursor set failure | No free list              |
| Database delete failure     | No key                    |
| Database export failure     | No record                 |
| Database import error       | Past end of block file    |
| Database insert failure     | Past end of btree file    |
| Database read failure       | Past end of Lseq file     |
| Database write failure      | Printable file error      |
| Duplicate key               | Record boundary error     |
| Fail lock failure           | Too many open btrees      |
| File creation failure       | Too many block files open |
| File open failure           | Too many open cbases      |
|                             | Too many open lseqs       |

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#### POSSIBLE MEANINGS

-- These messages indicate that there are database errors. To correct this problem, you will need to delete the ERMA.SYS file and all of the .DAT database files in the directory you are currently working in. You will then need to re-install ERMA onto your computer.

## **7 - Glossary**

|                                 |                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Alarm Response Messages</b>  | A section of the "SYSTEM SETUP OPTIONS" menu that allows you to program the message that will be displayed on your computer's screen when an alarm condition has been activated.                                                                                                                                                         |
| <b>Analyzing Transactions</b>   | An area of the "FUNCTION CHOICES" menu where you can view the transactions that you have previously retrieved and filter them by the filtering and sorting screens. You are also able to print transactions when you are in this area.                                                                                                   |
| <b>Action</b>                   | A section of the retrieving transactions, analyzing transactions, and monitoring transactions filtering screens that lists all of the different types of actions that the Infinity or Multi-Link system performs.                                                                                                                        |
| <b>All Box</b>                  | The box located in each area of the retrieving transactions, analyzing transactions, and monitoring transactions filtering screens which allows you to receive all of the transactions taken by your system for that area.                                                                                                               |
| <b>Code</b>                     | An area of the filtering screen which allows you to filter transactions according to its directory code, entry code, or card code, depending on your system's configuration.                                                                                                                                                             |
| <b>Date and Time</b>            | An area of the filtering screen which allows you to filter transactions according to the time and date the transaction has taken place.                                                                                                                                                                                                  |
| <b>Door/Gate Names</b>          | An area in the "SYSTEM SETUP OPTIONS" menu that allows you to name each of the doors/gates in your system. You can have up to four doors/gates in each unit.                                                                                                                                                                             |
| <b>Event Analysis Screen</b>    | The screen in the "ANALYZE TRANSACTIONS" section which allows you to filter, sort, print, or analyze transactions that you have previously retrieved.                                                                                                                                                                                    |
| <b>Filtering Screens</b>        | A screen which allows you to sort transactions according to five different categories: Code, Name, Date and Time, Action, or Source. This screen can be found in one of three areas of ERMA: the "RETRIEVING TRANSACTIONS" screen, the "Filter" section of the "ANALYZING TRANSACTIONS" screen, or the "MONITORING TRANSACTIONS" screen. |
| <b>Force Operator Knowledge</b> | A feature that requires you (or whoever is receiving the alarm call from ERMA) to press any key on your computer's keypad to acknowledge that you have received an alarm message. This feature is found in the "Alarm Response Messages" area of the "SYSTEM SETUP OPTIONS" menu.                                                        |
| <b>Function Choices Menu</b>    | The main menu of the ERMA program. There are four sections in this menu: System Setup Options, Retrieve Transactions, Analyze Transactions, and Monitor Transactions.                                                                                                                                                                    |
| <b>Monitoring Transactions</b>  | An area of the "FUNCTION CHOICES" menu where you can monitor the transactions as they occur on your Infinity or Multi-Link system.                                                                                                                                                                                                       |

|                                  |                                                                                                                                                                                                                                               |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name</b>                      | An area in the filtering screen which allows you to filter transactions according to the name associated with a directory code, entry code, or card code.                                                                                     |
| <b>Print</b>                     | An area in the "ANALYZING TRANSACTIONS" section which allows you to print the transactions as they are shown on the "EVENT ANALYSIS" screen.                                                                                                  |
| <b>Sort</b>                      | An area of the Event Analysis screen in the "ANALYZING TRANSACTIONS" section which allows you to organize the filtered transactions according to five categories: Date and Time, Source, Code, Name, and Action.                              |
| <b>Source</b>                    | An area in the filtering screen which allows you to filter transactions according to where the transaction has taken place.                                                                                                                   |
| <b>Storage Capacity</b>          | An area in the "SYSTEM SETUP OPTIONS" menu which allows you to set the maximum number of transactions that can be stored by ERMA.                                                                                                             |
| <b>System Setup Options Menu</b> | An area of the "FUNCTION CHOICES" menu where you enter the necessary information for ERMA to operate. There are five sections to this area: Storage Capacity, Transaction Archival, Unit Names, Door/Gate Names, and Alarm Response Messages. |
| <b>Transaction Archival</b>      | An area in the "SYSTEM SETUP OPTIONS" menu that is not currently available. When this feature becomes available, it will tell your computer to notify you when a certain percentage of ERMA's storage capacity has been filled.               |
| <b>Unit Names</b>                | An area in the "SYSTEM SETUP OPTIONS" menu that allows you to name each unit in your Infinity or Multi-Link system.                                                                                                                           |

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