

# Smart Cartridge

## Software Guide



# UP AND RUNNING IN 5 MINUTES

## Installing the Software

1. Place the system disk in drive A (or B)
2. Type: "A:  $\zeta$ "
3. Type: "SCSETUP  $\zeta$ "

## The Function Menu Will Appear

To program the Smart Cartridge, you must define at least one Security Level, program a card into that level, and upload it to the Smart Cartridge.

### To create a Security Level:

1. Select FUNCTION 5 Routine 1
2. Select Level 1 to define
3. Define Level 1 to include all reader locations you have connected to the system, 8 days a week, and 24 hours. You can modify this level, and create new ones later.
4. Hit escape once, and select Routine 6 to save your data.

## Programming Cards

There are three methods available for programming and maintaining your cardholder database:

1. Direct to Memory using the built-in DOS screens
2. Built-in dBase Utility
3. MS Access Windows 95/98  
Optional: See Access Central Software Guide

An explanation of each programming method is contained later in this manual.

```

SMART CARTRIDGE SYSTEM COM:1-Modem APB Enabled
-----
# : -- FUNCTION --

P : PASSWORD Protection
1 : TIME & HOLIDAY Definitions
3 : MEMORY Programming & REMOTE UNLOCK
4 : ANTI-PASS-BACK Definitions
5 : SECURITY LEVEL & OUTPUT RELAY Definitions ←
8 : Smart CARTRIDGE TRANSACTION DATA
9 : HARD DISK MANAGEMENT Functions
D : dBASE Memory Management
X : EXIT to DOS

Enter FUNCTION #
    
```

**FUNCTION MENU**

```

SMART CARTRIDGE SYSTEM COM:1-Modem APB Enabled
-----
SECURITY LEVEL & OUTPUT RELAY Definitions
-----
# : -- Routine --

1 : SECURITY LEVEL Definitions ←
2 : COMMAND MODULE LEVELS: Unlock, Shunt Alarm, or Enable Keypad
3 : OUTPUT MODULE LEVELS: Transaction Activated
4 : OUTPUT MODULE LEVELS: Time Program Activated
5 : ALARM MODULE LEVELS: Programmable Shunting
6 : SAVE Card MEMORY on Disk

Enter Routine #
    
```

**LEVEL DEFINITIONS**

```

SMART CARTRIDGE SYSTEM COM:1-Modem APB Enabled
-----
SECURITY LEVEL Definitions [ Esc ]
to Exit
-----
LEVEL # 1
Locations : 01 02 03 04 05 07

Weekdays : Mo Tu We Th Fr Sa Su Holiday
Time Span : 24 Hours per Day

Ready :

[ F1 ] to Modify Locations
[ F2 ] to Modify Days
[ F3 ] to Modify Time
[ F4 ] to Examine Another LEVEL
    
```

**DEFINING A LEVEL**

To program a card using the built-in dBase utility, simply hit the "D" key from the MAIN Menu and answer "Y" to the prompt: "UPDATE system parameters before exiting"

*Note: If the screen that appears is not legible, you do not have the ANSI.SYS device driver loaded. You will need to modify your CONFIG.SYS FILE as follows to use the built-in dBase utility:*

- *Exit to DOS and type:*  
EDIT CONFIG.SYS
- *Add the following line:*  
DEVICE=C:\DOS\ANSI.SYS

*If you are unable to load this driver, you will need to perform all programming procedures using the Memory Programming Function explained later.*

3. A data entry screen will appear. Simply type in a cardholder's name in the first box, and to the right, type in the cardholder's number. Note: some systems use a different number for programming than the one shown on the outside of the card. If this is the case, see the Card Log and enter the number shown under the heading "Memory Number".

4. In the box labeled LEVEL ASSIGNMENTS, simply place a "1" in any of the ten available LEVEL fields.

5. Hit the F10 key to save your record.

6. You may now program the Smart Cartridge by either connecting it to your PC, or via Dial-Up. See the Hardware Guide for details.

## OPERATING INSTRUCTIONS

The PC Smart Cartridge is actually a miniature PC that can substitute for an actual IBM PC or compatible computer. It uses all the same field hardware components as does a system controlled by an actual "PC", therefore all the installation information contained in the Component Installation Instruction manual is applicable.

With few exceptions, software programming and configuration procedures are also common to both a "PC" based system and a Smart Cartridge system, so please refer to the sections in this manual on Security Level Definitions and Card Programming.

### Programming Options

There are three ways to program a Smart Cartridge

- By connecting it directly to a "PC"
- By using the Card Programming Deck at any reader
- Via dial up from a remote "PC"

### IMPORTANT NOTES:

#### HANDLING THE SMART CARTRIDGE

The Smart Cartridge contains sensitive electronic components that can be damaged by static electricity. Always make it a practice to touch a piece of grounded metal prior to handling the unit.

#### BATTERY LIFE

The Smart Cartridge is equipped with a battery capable of protecting its volatile program and transaction memory. While the battery has a shelf life of 10 years, it will have a shorter life when under a constant drain. Therefore it is advisable to place a thin piece of cardboard or plastic between the battery and its hold down clip when the Smart Cartridge is not in service. The battery is not in the circuit, and will not discharge when 5 volts is applied to the Cartridge.

Please be cautioned that when 5 volts is not applied, and when the battery is removed, the Smart Cartridge will lose its programming and transaction data. So only remove the battery when the cartridge is not actively in service.

#### ANTI-PASS-BACK

##### Power reset

When power to the Smart Cartridge is removed, and then re-applied, the system program will immediately begin running, and if the parameters of the system include Anti-Pass-Back, then the Anti-Pass-Back in-exit buffer will reset automatically so that all cards are resynchronized for immediate use in the next reader location whether "in" or "out".

If for any reason (gate malfunction) Anti-Pass-Back requires manual resynchronization, power can be cycled by momentarily removing the Smart Cartridge Main Terminal Connector, or ideally a manual reset button can be installed to interrupt the 5 volt input to the cartridge.

### Field APB Override

Anti-Pass-Back is normally enabled at the time the Smart Cartridge is programmed by the PC. It is possible to instantly override APB in the field by simply flipping one of the Command Module's D.I.P. Switches.

To utilize this feature, simply include one extra "dummy" reader location in your Security Level, but do not include this extra location code in your Anti-Pass-Back definitions.

Whenever the primary location code is set in the module, Anti-Pass-Back will function as programmed by the PC. To override APB, simply change the D.I.P. setting to the "dummy" non APB module code.

### PROGRAMMING

The PC Smart Cartridge may be programmed using any IBM PC or compatible computer equipped with a serial port. The software allows user selection of any available com port. Once you have configured your software for the correct COM port, you will not have to repeat the process unless you change computers.

For remote site programming using the optional Phone Programming Interface, the computer requires a Hays compatible modem capable of 9600 baud communication, and connection to a dial up phone line. You must initially enter configuration information for your COM port and dialing method. When actually dialing, you must enter the phone number that the Smart Cartridge and Phone interface are connected to. Enter the number exactly as you would if it were a person to person call. In addition to the configuration setup, the software will remember the last number dialed for your convenience.

### To load the Smart Cartridge software into your "PC":

1. Place the Smart Cartridge Program disk in drive "A" or drive "B".
2. If the disk is in drive "A", type: A: and then press enter. If the disk is in drive "B", type B: and then press enter.
3. From the appropriate source prompt, Type: SCSETUP
4. The Smart Cartridge Program Main Menu should appear following completion of the automatic setup.
  
5. To exit the program, select: EXIT to DOS from the main menu.
6. To return to the program from DOS type: SMART

Unlike the "On-Line" PC system software, the Smart Cartridge program will not remain in resident memory once the program is exited. All the computer's conventional memory will be restored and available for other programs.

### Defining system parameters

The Smart Cartridge uses the same programming definition format as does the On-Line PC system. If you plan to use the Smart Cartridge as a back up to an On-Line PC based system, you may share the data files between the two systems if the system configurations are identical. This means number of cardholders, and number of security levels. If that is the case, you may copy

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the defined .BAS and .DTA files from the PC directory to the Smart Cartridge directory to avoid redundant data entry.

If you are using dBase Memory Management you can use the same database to program both the Smart Cartridge and the "PC" system even though the number of levels and cardholders may be different. See the section on dBase Memory Management.

### To program the Smart Cartridge

Once at least one level is defined (Function 5.1), and at least one cardholder is validated in that level (Function 3.1), the Smart Cartridge may be programmed. In addition to programming, the Smart Cartridge's built-in clock is set by the computer, so be sure that the correct time and date are displayed before programming.

### Direct Connect Programming From A "PC"

1. Connect the Smart Cartridge to the RS-232 Converter cable assembly (see Smart Cartridge Programming Connections) and turn on power.
2. Install the battery into the Smart Cartridge with the + side up.
3. Save the programmed parameters Function 3.3
4. Select Function 3 : MEMORY Programming & REMOTE UNLOCK
5. A menu will appear permitting you to configure the com port. Select Routine 3, Configure COM port. Follow the prompts to select the desired port, and to set up for direct programming or phone programming.
6. Select Routine 1 : PROGRAM Smart CARTRIDGE to begin programming. Smart Cartridge loading will now commence, and you will be able to observe the progress of the loading process on the screen. Block 1 deals with setting the correct time, block 2 and 3 programs cards and levels, and block 4 deals with anti-pass-back and transaction activated levels. If you do not use anti-pass-back or transaction activated levels, you can terminate the programming procedure after block 3. The amount of time required for programming and data retrieval depends on the card and level capacity of the system, and the number of transactions being downloaded respectively.

Remember to leave the Smart Cartridge connected to the 5 Volt source until you are ready to connect it to the card reader buss. This will insure maximum life of the battery.

### RETRIEVING TRANSACTIONS FROM THE SMART CARTRIDGE

The Smart Cartridge contains memory for transaction storage. The number of transactions it can store depends upon the amount of optional memory with which it is equipped. The storage memory can be visualized as a circular buffer. When the memory capacity is reached, the latest transactions overwrite the earliest. Therefore it is advisable to download transactions periodically in accordance with typical usage so that no transactions are lost.

1. Before removing the Smart Cartridge from the reader buss, be sure the battery is in place so that transactions will not be lost when power is removed.
2. Connect The Smart Cartridge to the cable assembly at the PC.
3. Load the Smart Cartridge program.

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4. Select FUNCTION 8 Smart Cartridge Transaction Data Retrieval
5. Verify proper Smart Cartridge to PC connections
6. When data transfer is complete you must now determine what to do with the transaction data. The default file in which to download transactions is: SCLOG.DTA, or the last file name used.

If previously downloaded transactions are already contained in this file, you have three choices:

1. Erase the existing transactions and overwrite the file with the new ones.
2. Append the file, which adds the new transactions to the end of the existing file. Be aware that if the Smart Cartridge's transaction buffer had not been purged after the last downloading session, you may be adding transactions that have already been downloaded from before. This can happen if there are fewer new transactions than were previously downloaded.
3. Name a new file.

To clear or empty the Smart Cartridge's transaction buffer after successfully downloading current transactions, select Routine 2, CLEAR Cartridge TRANSACTION MEMORY. Using this feature will insure that only current non-retrieved transactions are downloaded on the next session.

After the transaction buffer has been converted to a log file, select FUNCTION 9 from the main menu to review the transactions (see HARD DISK MANAGEMENT FUNCTIONS).

*SPECIAL NOTE: AFTER DOWNLOADING IS COMPLETE, WAIT 5 SECONDS BEFORE USING FUNCTION 9 TO REVIEW TRANSACTIONS. THIS INSURES THAT THE PROGRAM HAS SUFFICIENT TIME TO WRITE THE DATA TO THE HARD DISK.*

### Card Deck Programming

With the Card Programming Deck, you can instantly void a card from the Smart Cartridge that is valid in at least one level, and you can re-validate it again at a later time and it will assume the same status it did before. You cannot add a card to the system with the Card Programming Deck. The Deck simply voids cards that are already valid, and allows them to be re-validated after having been voided. It is a good idea to validate card numbers that have not yet been issued so they don't have to be programmed later.

The head end software has no affect on Card Deck Programming activity, so you cannot re-validate a card by re-programming the Smart Cartridge. The card will not be valid again unless you use the Programming Deck to re-validate it, or you remove the Smart Cartridge's battery which will erase all the cards from memory.

If you have more than one reader connected to the Smart Cartridge, you can use any reader to perform the programming without affecting the on-line status of other readers.

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Each time a card is voided or re-validated using the Card Programming Deck, the event is logged for later retrieval.

### Telephone Programming

#### Note:

*For remote dial up programming, you must use an external modem connected to a serial port, or if you are using a built-in modem, it must be configurable to match an existing com port. You cannot, for example, use an internal modem for com 2, if in fact no actual com 2 exists on the PC.*

At the remote site you will need a Telephone Programming Interface and a 9600 baud modem to program the Smart Cartridge.

**Instant Unlock:** This feature is intended for remote site applications where the Smart Cartridge is connected to a Telephone Programming Interface and modem. A "PC" equipped with a modem can call the remote site, and command one or more doors to unlock instantly. The remote reader(s) will report back immediately indicating whether or not they actually unlocked. This procedure does not affect the on-line functionality of the card readers. Menu items in the Smart Cartridge Software lead you through the steps.

## SYSTEM SOFTWARE OPERATING INSTRUCTIONS

### *Important Notes*

The ANSI.SYS driver must be installed in your CONFIG.SYS file in order to use the dBase Management and the History features. This can be added with a text editor, or you can create a new CONFIG.SYS file using a simple DOS command. The file ANSI.SYS is usually located in the DOS directory. If that is the case, use the following command to create a CONFIG.SYS file with ANSI.SYS:

```
COPY CON C:\CONFIG.SYS &  
DEVICE=C:\DOS\ANSI.SYS (F6) &
```

### BACKING UP DATA

Data crucial to your specific system is contained in all files with the extensions: .BAS or .DTA. It is wise to maintain a floppy backup of these files in the event of a computer failure. If you are backing up your transaction data on a regular basis, there is no need to maintain a separate backup of TCLOG.DTA which is the large file used for transaction storage. Should you experience a computer failure, or you wish to move your system to another computer, simply use the original installation program to start up the system, and then copy all the .BAS and .DTA files from your backups into the SC85DIR sub-directory.

### DEFINING A SYSTEM

The software program permits the user to custom define all access control parameters. These parameters are called SECURITY LEVELS. A SECURITY LEVEL is a convenient way to define the common access status of a group of

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cardholders. For example, LEVEL #1 might be for executives. Any person assigned to LEVEL #1 would have access to all doors at any time day, night and holidays (day 8). Instead of laboriously programming executives into each and every door individually, the operator need only assign the card once to LEVEL #1. LEVEL #2 might be defined for first shift production employees. That LEVEL would designate certain authorized entry points, a start time, a stop time, and the applicable days of the week, such as Monday through Friday but not on holidays. If a cardholder's access status does not fit one of the predefined levels, then you can program the card into a combination of levels which will create the exact access status you desire.

Security Levels can be created for specific date ranges in case you want to automatically validate a group of cards on a specific date and time, and then automatically void those cards at another date and time. This feature might be useful for controlling access to temporary groups such as contractors.

While Security Levels define the access authorization for cardholders. The same kind of levels are used to define the desired status of field modules. These are called Module Levels. There are Module Levels available to program relays, alarm shunt periods, elevator outputs, and keypad activation times. Like Security Levels, Module Levels can be programmed for specific date ranges also. A parking lot gate could automatically be opened on a specific Sunday for a special event for example.

To examine these levels, select FUNCTION 5 from the FUNCTION MENU.

### **PROGRAMMING CARDHOLDERS INTO THE SYSTEM**

There are two ways described here to program cardholders into the system. With some precautions, you can use either or both methods together.

#### *External Programming*

If you followed the 5 Minute Start Up routines, you are already familiar with External Programming. When you selected the "B" key for dBase Memory Management, you were actually exiting the access control screens and entering an external dBase program. The program you entered is the default dBase program that comes with the system. If you prefer to use another commercial dBase program such as dBase III or Foxbase you can.

When you exit the dBase program, your database is automatically sent to the Smart Cartridge program and saved to the hard disk if you answered Yes to the prompt upon entering dBase Memory Management.

Using the dBase Memory Management feature to program and maintain the access control system provides simple but powerful functions. You can custom design your data entry screens, include virtually any kind of cardholder data, search records by virtually any criteria, display the contents of the database in different sort orders, and you can use standard off-the-shelf dBase report writer programs to manipulate data and to create more extensive reports.

### *Internal Programming*

There are a number Internal Programming techniques that cannot be performed efficiently by a dBase program such as block voiding or validating using a specific range of card numbers. If for example you want to instantly preprogram a group of cards to be valid in Level 1, and another group of cards in Level 2, you can perform this operation in seconds. To do the same thing in a dBase program would require manually entering the appropriate data in each individual cardholder record.

With certain precautions, you can take advantage of the simplicity and convenience of *External Programming*, and the flexibility and immediacy of *Internal Programming*.

### **THE FIRST STEP**

The best way to familiarize yourself with the structure of the system is to follow the 5 Minute start up routine. Once you see how easy it is to program the system, you can make your programming scenarios as involved as you wish.

To begin, make copies of the Level Definition Work Sheet included in this manual. Now fill out a work sheet showing the descriptions of your entry points. To the left of the description, enter the two digit location code. This code is the Remote Command Module code already selected during installation. The Component Installation Manual shows how to set the Module Codes.

Next, create a few hypothetical levels. These will be common access categories shared by several individuals. If you want certain cardholders to enjoy virtual carte blanche access, you might want to define a master level and describe them as Grand Masters, or Executive Management. Each such group needs to be assigned a level number.

Now enter your Levels on the main work sheet showing appropriate module codes, applicable days of the week, and start and stop times. If a particular Level defines more than 12 readers, use additional lines to define that Level.

With entry points and access level categories defined, the information can now be compiled for easy entry into the computer. Select Function 5 from the FUNCTION Menu. Select Routine 1 to Define Levels.

### **THE SECOND STEP**

With at least one level defined, one or more cards can be programmed into these levels, or into any combination of levels using the dBase Memory Management feature , or the Internal Programming Routines.

A more detailed explanation of these programming options is discussed later.

*NOTE: The sequential card serial number stamped on the outside of the card may not necessarily be the number encoded in or on the card. Always use the random number (Memory Number) shown on the Card Log for programming purposes unless you are sure that the outside serial number is in fact the same as the one actually encoded in the card.*

## **RUNNING UNDER WINDOWS**

The Smart Cartridge Program is a DOS application that will operate in a window under Microsoft Windows 3.1/95/and 98

## **SOFTWARE FUNCTIONS: as they appear on the Function Menu.**

### **P : PASSWORD Protection**

This function protects specific system Functions from unauthorized use. Any combination of ten characters may be used for a password. The selected passwords can be saved along with other data on the hard disk so password protection is unaffected by re-booting. It is best to wait until all system parameters are programmed before selecting passwords and saving them.

Passwords are mutually exclusive so that any combination of FUNCTIONS may be protected by any password. In addition, each password can include the ability to program cards into restricted levels. Restricted levels provide an additional password layer so that persons whose password enables them to program cards in unrestricted levels cannot also program cards in restricted levels.

The use of dBase Memory Management overrides these restrictions, so if Restricted levels are utilized, it is important to also password protect dBase Memory Management, and not allow access to this Function by anyone who is not also authorized to program cards in Restricted Levels.

There are four levels of passwords available. Knowledge of the Master password is required to change other passwords. The Password Function is used to:

1. Define each Password (visible or invisible)
2. Define which Functions are to be protected by each password.

Knowledge of the master password provides access to any menu item (Function). Knowledge of other passwords provides access to only those menu items protected by that password.

Passwords are "case" sensitive which means that if an upper case character is selected initially, a lower case character cannot be substituted when entering the password.

## **1: TIME & HOLIDAY Definitions**

### *Routine 1. Set Date and Time*

Setting the time is not necessary with systems equipped with correctly set perpetual clocks. If the perpetual clock is incorrect, or an instant time change is desired, use Function 1. to change the time.

### *Routine 2. Holiday Definitions*

The enhanced software provides for holiday exceptions for its security and

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command levels. This means that you can automatically override a level or a command that might ordinarily be good on Thursdays, but if Thursday happens to be a holiday such as Thanksgiving, the computer will reject access to any level not good for Day 8, (Holiday) authorization. Any level you wish to remain active on holidays must include day 8.

At the Holiday Screen, enter the date of all company holidays, and on those days, only LEVELS designated for Day 8 will be active. Holidays may be entered in any order up to the year 2099. To remove a date from the screen, simply reenter it.

### *Routine 3. Automatic Daylight Savings Time*

When enabled, this feature automatically changes the system clock for the new time. The actual time of change is displayed on the screen and may vary depending on locale.

Only the system clock is altered, and not necessarily the computer's perpetual clock. Some computers such as the IBM AT have perpetual clocks that will be reset by this function, others have special commands. Be sure the perpetual clock is reset, otherwise the system will revert to the old time following a power failure.

## 3 : MEMORY Programming & Verification

*Routine 1. PROGRAM Card MEMORY* is used to program individual cards into their respective Security LEVELS. When programming cards, it is possible to enter more than one level so that cards can be simultaneously programmed into multiple levels. In addition, you can program all cards into selected levels at once, or a range beginning with one number and ending with another.

Software options are available to accommodate 4 , 5, and 9 digit numbers. When entering individual memory codes for programming, type the full number of digits. If you have the 9 digit software, you can use numbers that have fewer than 9 digits as long as you precede them with the appropriate number of zeros.

*Routine 2. LOAD Card MEMORY* from Disk, transfers all data contained on the disk into the computers memory.

*Routine 3. SAVE Card MEMORY* on Disk, transfers the contents of the computer's memory onto the disk. **Always use this Routine following changes to the program.** You do not need to use this Routine to save changes to cardholder text, or when using dBase Memory Management.

*Routine 4. List LEVELS per Card* provides a listing of all LEVELS in which a given card is programmed.

*Routine 5. List CARDS per Level* provides a listing of all Cards assigned to a given level.

*Routine 6. Cardholder TEXT* permits the entry of names or other text to be printed

out with every card transaction. Simply enter the cardholder's memory code found on the card log, and enter the person's name and/or other information.

*Routine 7. ALARM TEXT* allows you to identify incoming system alarms with up to 32 text characters. Until text is assigned to an input, that alarm point is not activated and will not report. Assigning at least one character of text to an input activates the alarm. These alarm inputs may originate from Command Modules, 16 Input Modules, or Multi-Point I/O Modules.

### *Alarm Descriptions*

Up to 32 characters of text may be entered for each alarm. This text will be displayed and logged each time the input changes state. The actual display will also include either the text: ALARM OPEN, OR Alarm Secure.

Alarm inputs may originate from a Command Module, a Dual I/O Module, or a 16 Input Alarm Module. For monitoring alarms originating from a Command Module or Dual I/O Module, simply enter the two digit Module code followed by 71 or 72 depending upon which input you are monitoring. To define text originating from a 16 Input Module, enter the two digit module code followed by the two digit input. When using both Command Modules, and Dual I/O Modules, you must not duplicate Module Codes since they are essentially the same type of device. You may however assign these same two digit module codes to 16 Input Modules without conflict.

### *Routine 8 Smart Cartridge Programming & Remote Unlock*

1. Program Smart Cartridge
2. Send a Remote Unlock Command to a door. (requires modem)
3. Configure COM port for remote programming

Note: For remote dial up programming, you must use an external modem connected to a serial port, or if you are using a built-in modem, it must be configurable to match and existing com port. You cannot configure an internal modem for com 2 when there is in fact no actual com 2 exists on the PC.

## **4: ANTI-PASS-BACK Definitions & Space Counters**

### *Routine 1. Anti-Pass-Back Definitions*

Any reader in the system may be defined as an entry point or an exit point for the purposes of detecting multiple entries by a single card. If the Anti-Pass-Back feature is enabled, a card will be denied passage if an attempt is made to use it for a second entry if it has not first passed through an exit reader, and vice versa. For Anti-Pass-Back to be enabled, you must define at least one entrance reader, and one exit reader.

### **Timed-Anti-Pass-Back (Optional, must be factory programmed)**

Timed Anti-Pass-Back is designed to control entrance tailgating where there are no on-line exit readers. In addition, the Timed Anti-Pass-Back feature may be used for automatic once per day resynchronization with or without on-line exit readers.

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When timed Anti-Pass-Back is enabled, all cards are resynchronized at the time interval specified. You may select a resynchronization interval from 1 minute to 2400. For resynchronization every 15 minutes, simply enter 15. For once per hour, enter 60. For automatic resynchronization once per day at 1 AM, simply enter 0100. To disable Timed Anti-Pass-Back, enter 0.

If Timed Anti-Pass-Back is to be used without an exit reader, you must select a bogus exit reader location in order to initiate Anti-Pass-Back.

### Hard and Soft Anti-Pass-Back

When any reader module code is entered as either an entrance or exit location, all cards using that reader automatically become subject to anti-pass-back detection. If anti-pass-back is disabled, "soft" anti-pass-back will be in effect which means that violations will be logged as exceptions, but passage will not be denied. If anti-pass-back is enabled, "hard" anti-pass-back will be in effect denying passage to violators. It is possible to invoke "hard" anti-pass-back at exits, and "soft" anti-pass-back at entrances, or any combination.

### Valet and Special Anti-Pass-Back Exceptions

Specific cardholders can be programmed to be exempt from anti-pass-back control. Simply select FUNCTION 5.3, and define the highest available level. Transaction Activated levels are not subject to Anti-Pass-Back control, so any cardholder programmed into these levels will be exempt. Transaction activated levels require an Output to be defined. Enter 2001 for the output code.

## 5: SECURITY LEVEL & OUTPUT RELAY Definitions

### *Routine 1. SECURITY LEVEL Definitions*

This function is the key to the system's ability to manage access authorization conveniently. Access levels may be defined by simply entering the desired location(s), applicable week day(s), and time parameters. After LEVELS have been defined, individual cards, or all cards can be quickly programmed into one or more of these levels.

Each LEVEL is independent of all other LEVELS (there is no hierarchy between levels). The number of available levels is determined by the size of the memory.

A work sheet is provided to assist in defining access levels. These parameters can be modified at any time.

Programming cards into the Levels you define can be password protected. A second layer of password protection may be added to certain levels so that programming can be restricted. This capability is designed for users who may have two different operators. For example, a hospital may want all its security levels restricted so that parking personnel who must also perform programming functions for parkers cannot program cards in or out of security levels. A level automatically becomes restricted when any card is programmed into it using the restricted level option.

Once levels have been defined, they must be saved to avoid loss in the event of power failure.

### *Routine 2. COMMAND MODULE LEVELS:*

While Security Levels define the status of cardholders, Command Levels define the status of Command Modules. Each Command Module Level can be defined to perform one of the following commands:

- Timed Unlock
- Timed Alarm Shunt
- Timed Keypad activation

For entry points equipped with only a Keypad, a Command Level must be defined in order to activate it for use. If a Keypad Level is not currently active, the Keypad will not permit access. This insures against off-hour tampering.

### **Keypad Operation**

#### *Keypad Only*

For entry points with a Keypad and no card reader, it is necessary to both create a Command Level to activate the Keypad as described above, and a Security Level To authorize Keypad use just as you would for cardholders. You must then program the active Keypad numbers into this Security Level. When an individual enters a valid Keypad number into the Keypad, entry will be granted.

A Keypad transaction begins with the star key (\*), followed by the Keypad number, and ending with the pound key (#).

#### *Keypad Or Card*

If the Command Module firmware is set up to accept either the use of a Card or Keypad Code, the instructions above for *Keypad only* apply.

#### *Card Plus Keypad*

When the Command Module firmware is set up for Card Plus Keypad you must first enter a valid Keypad number when a Keypad Command Level is active. If a Keypad Command Level is not active, access will be granted based only on a valid card.

A detailed explanation of the Keypad option is contained in the Component Installation Instruction Manual.

Any command can be changed from one type of command to the other by simply hitting "A", "U", or "K".

A command definition can include up to 127 entry points, one or more days of the week, and a specified time interval.

For increased security, the computer checks every programmed module once per minute to insure that its output relay is in compliance with the programmed parameters. When programmed commands are initiated, they will be transmitted to their respective modules on the minute.

### *Routine 3. OUTPUT MODULE LEVELS: Transaction Activated*

### *Transaction Activated Levels for Elevators*

Selective programming of individual cardholder access to authorized floors can be accomplished with the 16 relay Output Module. The Output module may be used for either continuous time programmable output commands, or for momentary activation in response to authorized cards, but not for both at the same time.

For elevator control applications, when a card is inserted into the car's reader, all the relays applicable to that cardholder's authorization LEVEL will activate for a period of time pre-selected at the Output Module. The time selected should give the cardholder time to select a floor button. A separate timer adjustment screw is provided for each bank of 8 relays. If the button pressed matches an active relay, then the elevator control logic should provide the cardholder access to that floor. This system provides relay outputs only, and interfacing to actual elevator control circuitry should be coordinated with the manufacturer of the elevator equipment.

An output relay should be dedicated for each controlled floor per reader. For example: One elevator car with a reader serving 10 floors requires 10 relays. If two elevator cars access the same 10 floors, then 20 relays should be dedicated. If more than one elevator car has access to the same relay, a possible contention could exist when there are simultaneous card insertions in both cars. If this is not considered to be a problem, then up to 16 readers can be programmed to address the same relay.

Up to 63 Output Modules may be used providing 1008 relays each with a unique code. A relay output code is a four digit number consisting of the two digit Module code plus the specific two digit relay number indicated along the terminal strip. Any Module code may be selected from 00 to 3F except for the code 20 which cannot be used.

Transaction Activated Levels are used to define the various access categories of floor authorization in which cardholders will be programmed. The levels dedicated to elevator control must be numbered between 801-900.

Programming these levels is similar to Access LEVEL Definitions used for entry control.

A Transaction Activated Levels is defined as follows:

- One Reader/Command Module Location Code (One elevator car except as noted)
- One or more days of the week
- A time parameter
- One to 78 Output Relay codes (Floors).
- A start and stop date if required

As stated earlier, each car should have exclusive outputs, however there is no problem applying many different levels to the same Outputs. For example, a single output for a given floor may be included in a master level for top

executives, and also included in a level intended for more restrictive cardholder use. Any cardholder may be assigned to one or more levels, or all the levels.

After at least one Elevator LEVEL is defined, individual cards may then be programmed using FUNCTION 3.1 or by entering them in the dBase database.

### *Routine 4. OUTPUT MODULE LEVELS: Time Program Activated*

Output LEVEL Definitions apply to the 16 relay Output Modules. These levels are handled exactly like the Remote Command Definitions used for Command Modules, except that a four digit number is used to define these levels instead of two. If both 16 Relay Output Modules, and Programmable 16 Input Alarm Modules are used on the same system, care should be taken not to duplicate module codes (See hardware installation instructions).

Output Levels defined for Relay Modules simply activate and deactivate the relays when programmed to do so. Output Levels defined for the Programmable 16 Input Alarm Modules deactivate or shunt the alarm inputs when programmed to do so. There are up to 100 available LEVELS numbered from 1-100.

An Output LEVEL consists of the following:

- One or more output address (Up to 78)
- One or more days of the week
- A time parameter
- A start and stop date if required

When each of these three parameters are entered, the command will be transmitted at the next one minute update. Every output in the system which is defined in at least one LEVEL, is automatically updated once per minute on the minute to insure maintenance of the programmed status in the event of a remote power interruption. Only locations programmed into properly defined levels (active or inactive) will receive the update, so a location should not be removed from an active level (relay pulled in or alarm shunted) unless it is also programmed into an inactive level, otherwise it will not receive a command to change states.

### *Routine 5. ALARM MODULE LEVELS: Programmable Shunting*

Alarm Module Levels apply to the 16 Zone Alarm Input Modules with codes ranging from 00-3F for a total of 1008 shuntable alarms. Module code 20 is not usable.

These levels simply deactivate (shunt) alarm inputs when programmed to do so. Alarm Module Levels are handled exactly like Output Module Levels. If both 16 Relay Output Modules, and Programmable 16 Input Alarm Modules are used on the same system, care should be taken not to duplicate module codes (See hardware installation instructions).

An Alarm Module Level consists of the following:

- One or more input addresses (Up to 78)
- One or more days of the week
- A time parameter
- A start and stop date if required

When each of these three parameters are entered, the command will be transmitted at the next one minute update. Every input in the system which is defined in at least one LEVEL, is automatically updated once per minute on the minute to insure maintenance of the programmed status in the event of a remote power interruption. Only locations programmed into properly defined levels (active or inactive) will receive the update, so a location should not be removed from an active level (alarm shunted) unless it is also programmed into an inactive level, otherwise it will not receive a command to change states.

If an Alarm Level expires when its input is open (in alarm), that alarm will be annunciated, and will display as an open alarm.

### 9: HARD DISK MANAGEMENT Functions

Note: You must have the ansi.sys driver installed in order to run Hard Disk Management

This FUNCTION provides the following utilities:

- Display and print archived transactions by any search or filter criteria
- Export archived data to a dBase file
- Backup selected archived transactions to another file
- Search cardholder text file
- Import cardholder name, number and levels from another dBase file
- Setup utilities for dBase Memory Management
- Soft Nesting Reports

### CONDUCTING A SEARCH

The opening screen is used to set the search parameters for past transactions stored on the hard disk. Answer the prompts as follows:

- Include Access Transactions?
- Include Alarm Transactions?

Answering Y (yes) to both will produce a search of all transactions without regard to specific Alarm or specific Cardholder criteria that may be entered. For this reason, always answer yes to one or the other, but not both when specific search parameters are desired. For example, if you are searching a particular door, or a particular person, be sure not to include Alarm Transactions in the search. Conversely, if you are searching for particular alarms, do not include Access Transactions in the search.

### SEARCH PERIOD

For a new system with few transactions, it is best to begin with the date of the first transaction, and some future date. To insure that your first searches will

## Smart Cartridge Software Instructions

not be limited by time, enter 00:00 and 24:00 as the start and stop times. If the time and date are left blank, the search will automatically apply to transactions that have occurred during the last fifteen minutes.

### SPECIFIC ALARM POINTS

Enter an alarm location code if you want your search to exclude all but transactions from that alarm point.

### LIMITING THE SEARCH BY ACCESS TRANSACTION STATUS

The "-" sign limits the search to access transactions that were denied because the cardholder was not valid in a level applicable to the attempted entry.

- "A" limits the search to cards denied due to Anti-Pass-Back violations.
- "K" limits the search to cards rejected because of an incorrect Keypad P.I.N. code or a failure to use a code during an active Keypad Level.
- "S" limits the search to cards rejected because of wrong system codes.

If left "blank" the search will be limited to only valid authorized transactions.

- "V" is for all transactions not limited by any exceptions.

### SEARCHING BY READER LOCATION

Enter a reader module location code to limit the search to transactions from that one location. If you want to search for transactions from 2 or more specific readers, you may do so by conducting the search from the Transaction Audit screen (F7).

### SEARCHING BY MEMORY CODE

For cardholder searches by memory code

### SEARCHING BY TEXT

Searches may be conducted by exact match, or by random character string. If the character location of the text being searched is unknown, choose N (no) for Exact Match, and the program will find every entry with the specified characters no matter where in text they may be. For example, entering the characters "on" will produce a list of transactions that might include:

Don Jackson  
Billy Johnson  
Bonnie Badilla  
Bob Pearson

If exact match is specified, nothing would be found unless the characters "on" were typed @ positions 10 and 11. The computer would then find Jackson and Pearson only because the other two have names with other characters in positions 10 and 11.

If department numbers always occupy the first four characters, than a search

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of all department 1234 activity would not accidentally pick up transactions for someone in department 5678 but whose license number is ABC1234. If you did not specify an exact match, then that transaction would be included.

### INITIATING THE SEARCH

Once the search parameters have been specified, press Function key 6 or 10 and select the file to be searched. As noted on the Input/Output screen, transactions stored to the hard drive use the default file name: SCLOG.DTA. If you are searching a file with another name, simply specify the drive and file name to be searched.

The actual search provides an opportunity to concurrently display, print out, and/or to store the search on a floppy. In addition, you can send the data to a dBase file that has been predefined to accept the data.

If periodic backups are saved to the same disk and to the same file, the newest information will write over the previous file. This is a quick way of keeping your backup current. The backup file name can simply remain on the screen as a default.

### dBase EXPORT

dBase Export is a utility that lets you populate a predefined dBase file with transactions recorded by the access control system. Transferring the transactions will append the existing D-Base file.

The information to be transferred can be selected and filtered just like any other search. Therefore it is a good idea to view the search before actually making the transfer.

The first step is to define a dBase file into which you want to transfer the transactions. The following are the fields together with the field lengths:

<b>FIELD</b>	<b>CHARACTERS</b>	<b>DESCRIPTION</b>	<b>FIELD LENGTHS</b>
DAY	2	DAY OF THE WEEK	
DATE	8	DATE	
TIME	8	TIME	
STATUS	1	VOID, VALID, ALARM	
MOD	2	MODULE CODE	
FAC	4	FACILITY CODE	
MEM	4 OR 5	MEMORY NUMBER	
ALARM	4	ALARM ADDRESS	
ALARM_STAT	12	ALARM STATUS	
NAME	32	CARDHOLDER TEXT	

You may label your fields in the dBase file with any name you desire. Normally all fields will be defined as "character fields" even though they may contain numbers. Consult your dBase manual for field types.

For fuel dispensing applications, the FAC field is used to record the number of fuel units dispensed. Therefore it is a good idea to define that field as a

"numeric field" in the dBase program so that calculations can be made.

After a dBase file is defined, enter the access control program and select FUNCTION 9. Set the search criteria and view the results of the search to insure that is what you want exported. After viewing the initial search, press the F6 key (I/O). Select Y (yes) for "Write to dbase File."

While the cursor is on the "Y", select F6 to bring up screen S024. Here is where you tell the program what you have named each field. Simply enter the field names you have selected for your dbase file.

To initiate the export functions, simply press the F10 key. The program will now populate your dbase file, and if data already exists in this file, it will append it.

### SEARCHING THE TEXT DATABASE

Press the F3 key from the Management Package opening screen to search the computer's current text data base.

This feature permits a rapid text search and displays and/or prints a list of cardholders in memory code order of all entries matching the entered search criteria. If no search criteria is entered, then every entry containing at least one text character is displayed. If cardholder memory codes have been entered without text, they will not be displayed.

### TRANSACTION AUDITING (F7 Key)

Nesting Enforcement-Cardholders Present

Transaction auditing provides instant reports of controlled parking "nesting" violations, and will provide instant verification of cardholders present. In both cases, the controlled areas must be equipped with card readers at both entrance and exit locations.

### NESTING ENFORCEMENT

Nesting is a term which refers to special rate parking areas. Nesting enforcement is a method used to assure that special rate parkers actually park in the special rate area (nest), and not in regular parking areas.

The program is designed to audit the length of time a parker remains in a regular parking area. If the time exceeds the customer's specified grace period, it is assumed that the special rate parking criteria has been violated.

A parker must exit the regular parking area by entering the special rate area (nest), or exiting the entire parking facility before the grace period in order to avoid detection as a nesting violator.

Designating Special Rate Parkers In The Data Base

Cardholders subject to special rate restrictions should be identified by a word or a symbol typed into the text data base. Always use the same character location for this designator. For example, a "\*" in the first character position could delineate a special rate parker. If there are several categories of special

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rate parkers, other characters could be used as well. Be careful not to use the designated character for other none restricted parkers. In other words, if the character "W" is used in the first character position to delineate a certain group of parkers, any cardholder with a "W" in the first position would be assumed to be a special rate parker, like "William Smith".

### Entrance-Exit Definitions

For the purposes of Nesting Enforcement only: An entrance location is any gate which permits entry into the regular parking area.

It could be a gate from outside the parking lot, or it could be a gate leaving a special rate area (nest) which enters the regular parking area.

An exit location is any gate that exits the regular parking area. It could be the main parking lot exit, or it could be a gate which permits entry to the special rate area.

### RUNNING A NESTING ENFORCEMENT REPORT

To set the parameters for a nesting report, enter the date of the report, or leave blank for today's activity. For time, it is best to specify the start time as 0000, and the end time 2400.

Enter the grace period in minutes. This period can be changed at will, and should be adjusted to reflect a reasonable transition time from the main entrance to the special rate area. One way to establish this figure would be to run several reports using different grace periods to determine a typical transit time. If 5 minutes picks up too many violations, try 10 etc.

The Access Transaction Status should be left blank.

Text string to search should contain the designated special rate parking character symbol such as "\*\*". You can also enter the name of any cardholder if you want to check for nesting violations of just that person.

Enter YES "Y" to exact match.

Finally, enter the reader module code of the Entrance Locations, and the Exit Locations.

These parameters will remain unless changed, providing instant verification of nesting violations with only a few key strokes.

To run the report, press the F10 Function Key, set the prompts, and hit the F10 key again.

To inspect the entire pattern of a nesting violator, simply hit the F5 Key which returns you to the Transaction Management screen. Enter the person's name, then hit F10 to see that person's complete entry/exit record.

### dBase IMPORT

This utility lets you import cardholder information from another dBase file.

Although the Import utility contained in this program is limited to the industry dBase III standard, most other database programs include a conversion utility that can save the data to dBase so that it can be imported into the access control program.

The access control software is able to import all information necessary to completely program individuals into the system. This includes card number, name, and security level assignments.

To use the dBase Import feature, select FUNCTION 9 from the Function Menu. Then press the F3 key (CARD). Select F7 (import).

Now simply enter the path and name of your dBase. Enter the name of the field from which the card memory number is to be imported, and the name of the field from which the cardholder's name is to be imported. If you would also like to program cardholders into specific security levels, enter the name of the fields that contain these levels. Press F10 to start the import.

If you are maintaining your cardholder database in an external database program, you can configure the access control system to automatically import the data whenever changes are made. See Dbase Memory Management.

### D: dBASE MEMORY MANAGEMENT Functions

(Not available for 9 digit systems)

There are two ways to program and maintain the access control cardholder database; *internally* by using the programming utilities located in FUNCTION 3, or *externally* from a dBase file. When you use internal programming, changes you make go directly from the keyboard into the "PC"s memory as you make them. When you use a dBase program, the changes you make take place in an external database and are actually imported into the access control system when you exit the dBase program. With certain precautions, you may program the system both *internally* and *externally* without restriction.

This section explains exactly how the dBase Memory Management feature works. If you are using both the *internal* and *external* programming utilities, it is extremely important to understand how they both function with respect to one another.

**1. Internal Programming:** There are routines available internally that are not possible with *external* programming such as block voiding and validating by card number range, instant verification of cards in levels, or levels assigned to cards, and restricted security level programming. If you decide to maintain your data base externally, it is still important to be familiar with all the features contained under FUNCTION 3 so that you can use them when necessary. When you program cards *internally*, you enter only the minimum information the system needs to perform access control functions, such as the cardholder's name, memory number, and level assignments. When you use *external* programming, you can maintain an entire profile of each cardholder such as address, phone, card serial number, type vehicle, etc.

**2. External Programming:** This built-in database contains fields that you can relabel to reflect the information about each cardholder that you would like to maintain in the system.

The built-in database is an actual dBase program containing the basic functions necessary to enter data, search, add, and delete records. It is not intended to emulate a full featured database program containing high end dBase functions. But, because it is in fact a dBase III compatible program, you can easily perform high end dBase functions using any of several available commercial programs such as dBase III, and Clarion Report Writer. These third party programs let you index, sort, filter, and create displayed and printed reports based on any combination of parameters.

To illustrate the simplicity and power of such utilities, this program includes three database reports created in Clarion Report Writer. Once you have populated your database with cardholder information you can try these reports. Instructions follow later in this section.

It is very important to recognize that the dBase Memory Management feature is intended to provide convenient access to dBase records, and to automate the process of importing and saving this data into the access control system in one step. It is in fact an *external* dBase file that is not an interactive part of the access control program. For this reason, data contained in the dBase file may not necessarily reflect the programming status of the access control program if both *internal*, and *external* programming functions are utilized.

You may for example want to initialize your access control system quickly by validating every cardholder in one or more levels using the *internal* programming routines. This gets the system going immediately giving you plenty of time to begin the process of entering individual cardholder data. Once you have entered all the cardholder information into the dBase program, you can now import it into the access control system, but you will first need to clear the system's memory so that after the import, it reflects only the programming parameters contained in the dBase file. This operation takes only seconds to do:

Enter FUNCTION 3.1. Select Routine 1, F2 for All Levels, F3 for all cards. Type VOID to remove every card from the system.

Now enter dBase Memory Management, answer yes to import upon exiting. When you exit the dBase file, the *internal* memory will be programmed to match every record in the database. Any cardholder not in the dBase file will be void.

The dBase Memory Management feature performs the following import functions for each record:

1. Program a card to be VALID in every security level. (Type VALID in the *All field*)
2. Program a card to be VOID in every security level. (Type VOID in the *All field*)
3. Add or delete any combination of 10 security levels at a time. (*Level fields*). The *All field* must be blank.

The All field (VOID OR VALID) is intended for instant action. If you want to remove a card instantly without modifying the cardholder's record, typing VOID in that field will remove the card from the system regardless of what other levels might be entered above it. The same is true for the use of VALID. Once a card has been voided from the system, it is strongly recommended that you use the Delete Key

### Using dBase Memory Management

The following explains the use of the Function Keys located at the bottom of the screen:

*FUNCTION KEY F1:* Cancels any changes you have made to the data that has not been saved. If no changes have been saved, this key exits dBase Memory Management.

*FUNCTION KEY F2:* Select the name of the database to be viewed, and the display form. The default database will be CARDS.DBF. The default display form is CARD1.FOR.

As previously noted, you can modify the field names on any form by using a text editor. When you display the form in a text editor, you will notice two references to each field. The first is the name you wish displayed for that field, and the name in brackets is the name of the field as defined in the database. The name you wish displayed for a field shows on the form, and the location on the form that the field name appears will be substituted for the actual data you have entered into the field. For example, the form will show NAME: [NAME]. The field name in the brackets tell the database where to display the data you have entered. The word NAME simply provides the label for the data. You can edit the word name and replace it with CARDHOLDER if you wish. The new form when viewed by a text editor would appear like this: CARDHOLDER: [NAME]. The field name stays the same.

*FUNCTION KEY F3:* Takes you to the first record in the database, or if you are using the F9 filter feature, it takes you to the first record that meets the filter criteria.

*FUNCTION KEY F4:* Allows you to DELETE and UN-DELETE a record. If the record is deleted, the data it contains will be ignored by the access control system, but the record will still be visible for future reference and can be found in a search. If you delete this record because the individual to whom it belonged is to be cancelled permanently, you can use the same record for someone new. It is advisable to delete records that have been voided. This will increase the import processing time since the system will not have to repeat the voiding process every time an import occurs.

*FUNCTION KEY F5:* Takes you to the previous record, or if you are using the F9 filter feature, it takes you to the prior record that meets the filter criteria.

*FUNCTION KEY F6:* Takes you to the next record, or if you are using the F9 filter feature, it takes you to the next record that meets the filter criteria.

**FUNCTION KEY F7:** Takes you to the last record in the database, or if you are using the F9 filter feature, it takes you to the last record that meets the filter criteria.

**FUNCTION KEY F8:** Creates a blank record into which you can add a new cardholder.

**FUNCTION KEY F9:** Takes you to a blank record into which you can enter filter values. If you place the cursor in the VEHICLE field, only records in that field will be filtered. If you enter FORD, you will be taken to the first record in the database with the word FORD in that field. If you hit the F6 Key, you will be taken to the next record that meets the criteria and so on. To cancel the filter, hit F9, and again select F9 for all.

So locating records in your database is simple. You can find a record by virtually any search value you choose. If you want to pull up a record for card serial number 8974, simply select F9:, and enter 8974 in the serial number field.

**FUNCTION KEY F10:** Should be used to save changes and additions as you make them. The F10 KEY is also used to execute a search after having entered a filter value.

### Adding Records To Your Database

To add cardholder records, you can type over an existing record if it is no longer in the system, or hit FUNCTION Key F8 to add a new record.

1. The NAME field contains 32 characters. Whichever 32 characters you place in this field will be displayed on the transaction log each time the card is used.
2. The MEMORY NUMBER FIELD contains the encoded number to be used by the access control system for programming purposes. For security reasons, this number may not be the number printed on the outside of the card. If it is not, your cards would have been delivered with a log showing both the MEMORY NUMBER and the outside SERIAL NUMBER. Be sure to verify this before beginning.
3. The Level Assignment Fields allow you to program the cardholder into predefined security levels. You can program the card in up to 10 levels at a time, or in all levels at once. If you have already programmed cards using the *internal* programming procedures found in FUNCTION 3.1, they will be unaffected by additional levels you enter here. Any level you enter will be imported regardless of what other levels might already be programmed for that cardholder. Simply type the level number you wish in any field. It is not necessary to precede the level numbers with zeros. You can remove a cardholder from a level by preceding the level number with a minus sign.

The field labeled Program All Levels at Once (VOID or VALID) should be left blank when importing specific levels. If you type VALID in this field, the card will be validated into every level, not just the ones specifically indicated. If you type VOID, the card will be removed from every level regardless of any specific levels indicated. Once a card has been voided, it is advisable to delete the record to avoid unnecessary processing time. If the word VOID remains in the ALL field in an undeleted record, the software must repeatedly void it from each and every

level every time an import occurs. If the database contains numerous undeleted records containing the word VOID, import processing time is dramatically affected.

All the other data fields are for convenience and have no relevance to the system, and may be used in any manner.

### Reports

The built in data base does not produce reports. You can print out individual records one at a time if you wish by using the print screen key.

If you require reports that list your data in various forms, and in a certain order, there are a number of simple dBase utility programs that can do this easily. One such program is Clarion Report Writer.

### Running a Clarion database report

Six Clarion reports are included with this system. Three reports are designed for viewing, and three for hard copy reports. You can run the reports from a DOS prompt: c:\sc85dir, or find the bat files in that directory and place shortcut icons on your windows desktop.

- Type the word **ALPHA** to view a report that lists all records in alphabetic order. Type **ALPHAP** to print the report.
- Type the word **NUM** to view a report that lists all the records in numerical order. Type **NUMP** to print the report.
- Type the word **LEVEL** to view a report (**LEVELP** to print) that lists cards by their specific level. After typing LEVEL, you will be prompted to enter the number of the level for which you want a listing. If you type "1" for example, you will receive a list of all card holders currently assigned to level 1. It will also show additional levels for which that cardholder might be assigned.
- To display a list of all cards that have been voided from the system, type the word **LEVEL**, and when prompted, type the word VOID. Every record with the word VOID in the All field will be displayed.

It should be noted that Clarion Report Writer disregards records that have been deleted even though the access control database will display them.

## TROUBLESHOOTING

### "PC" and Smart Cartridge Software

#### *DOS ERROR CODES*

The following are some common error codes you may encounter:

- 25 Device Fault. This could be a printer that is faulty or turned off.
- 27 Printer out of paper
- 51 Internal computer error—RE-boot
- 53 File not found: Check the path and syntax of your command
- 57 Device I/O error: Hard disk faulty
- 61 Disk full
- 68 Device unavailable

## Smart Cartridge Software Instructions

- 71 Disk not ready: No floppy inserted, floppy door open.
- 72 Disk-media error. Bad or un-formatted disk.
- 76 Path not found

### Smart Cartridge

**Datalink error:** The Smart Cartridge is not communicating: Check the wiring connections and the power to the RS-232 Converter and to the Smart Cartridge. Occasionally you might see this error in the middle of a data transfer session. This can happen because of an unnoticed power or communication transient, and may not be due to a wiring problem. Simply try again.



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