NEC

MEDICAL CENTER SYSTEM

OPERATIONS MANUAL
(JAVA Edition)

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Chapter 1 INTRODUCTION

What is Medical Center System?

The Medical Center System (MCS) provides enhanced operator functions and call handling for a medical center environment. MCS combines the NEC Advanced Attendant Console with a general purpose computer equipped with a UNIX System V operating environment, the NEC Applications Manager support platform, and a comprehensive package of software components.

MCS operates with a SN716 Attendant Console. The illustration below (Figure 1-1) shows the MCS components in a typical configuration:

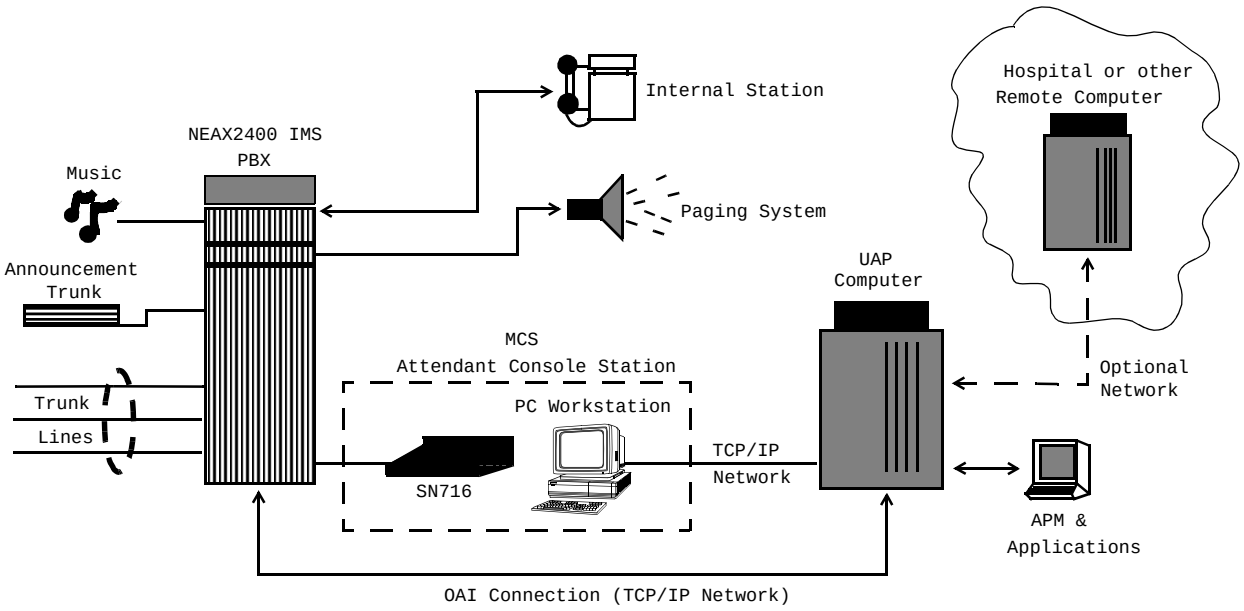


Figure 1-1 Medical Center System

MCS provides enhanced functionality by using the NEC Open Applications Interface (OAI) communication pathway between the UAP computer and the NEAX2400 PBX system. The PBX and UAP utilize standard TCP/IP network media for communication allowing flexible deployment options.

The MCS JAVA Edition (MCS-JE) includes a JAVA based client Graphical User Interface (GUI) that can be installed on any PC Workstation that supports Sun Microsystems JAVA Virtual Machine (JVM) Release 1.1.7 or greater. The MCS-JE client installation provides a compatible JVM runtime for Microsoft Windows 9x.

MCS-JE also supports previous MCS customers that do not use PC Workstations to connect to the MCS UAP. The MCS-JE software components can be configured with either PC Workstations and existing attendant console stations. This capability provides a choice for the customer of how and when to upgrade.

Telnet and JAVA Interfaces

The MCS-JE supports both JAVA GUI and the character based Telnet terminal session interfaces. The JAVA GUI is available for operator features and functions. Database administration between the PC Workstation (client) and the MCS UAP uses the character based Telnet interface.

To use the character based interface, a third-party terminal emulation program that supports the Telnet session protocols must be installed on the PC Workstation. The standard MS Windows Telnet program is NOT recommended as it does not adequately support colors and cursor positioning. Other commercial terminal emulation programs that support Telnet sessions such as PowerTerm or SCO TermVision are suggested.

Operator Functions

MCS provides up to 16 medical center operators with an on-screen display of caller information and an interactive screen for caller assistance using the functions:

- **Directory Assistance** – Provides information retrieval from a computer database and directs incoming calls to their destinations. The database contains patient, staff, and other information that is designed for either stand-alone use or for interactive transactions with a remote database server.
- **Park/Page Retrieval** – Allows the operator to transfer an incoming call to an announcement trunk or to a monitored number for later retrieval.
- **Beeper Connection** – Displays a database listing of beeper assignments. Automatic call placement and manual entry of message codes is supported. Alphanumeric beeper messaging is supported with an add-on beeper interface package.
- **Redial Caller** – Automatically attempts to reestablish connection with the most previous internal extension.
- **Emergency Response** – Displays a database of emergency response teams and agencies for operator selection, and automatically places the chosen call.

Supervisor Functions

MCS provides supervisory functions using password security access for the management of the MCS resources used by MCS operator functions. The Supervisor may perform the following functions by accessing the menu items listed below:

- **Database Administration** – Add, delete, modify, view, and print the large variety of database records that are required by MCS operator functions.
- **System Administration** – Make extension assignments, including the types of restrictions that affect their use, and direct inward dialing numbers controlled by MCS.
- **Configuration Management** – Modify or print configuration parameters that affect processing of time-outs and the Operator Functions display fields.
- **Login Maintenance** – Manage the MCS login and password security system as well as to activate specific operators.

- **Supervisor Reports** – View and print statistical reports generated from operator call processing activity.

Note: *The initial release of MCS-JE does not support JAVA GUI interfaces for all supervisory functions. Where not supported, the Telnet session interface will be used.*

In addition to these menu-driven capabilities, the supervisor can respond to an operator emergency alert by silently monitoring an ongoing conversation between a caller and an operator.

Password Security

The MCS menu system serves up to 16 operators and one supervisor. Operators can be configured with operator functions or with operator and database management capabilities. If operators are not configured for access to database functions, entering the operator password on the login screen automatically displays an Operator Functions screen.

The supervisor can access all operator functions as well as database, configuration, login name, and report management options. Authorized access by the supervisor displays the full MCS Main Menu.

How to Use This Manual

Manual Organization

This manual is organized around the MCS Main Menu illustrated in **Chapter 3** for the Telnet interface and **Chapter 4** for the JAVA GUI interface. The later chapters describe these Main Menu features and functions. Refer to the following chapters to install, configure, and operate MCS-JE:

- **Chapter 2, "SERVER INSTALLATION"**
- This chapter addresses the server hardware and software installation of MCS as well as the necessary configuration files, databases, and other data and equipment assignments that are required by MCS.

- **Chapter 3, "JAVA MCS CLIENT INSTALLATION"**
  If using the JAVA GUI, this describes the procedure to install the MCS-JE JAVA GUI on a PC Workstation.

- **Chapter 4, "TELNET OPERATOR FUNCTIONS"**
  This provides an illustrated reference and procedural guide to all of the functions provided to MCS operators using the Telnet protocol interface.

- **Chapter 5, "JAVA OPERATOR FUNCTIONS"**
  This chapter provide an illustrated reference and procedural guide to all of the functions provided to MCS operators using the JAVA GUI.

- **Chapter 6, "DATABASE ADMINISTRATION"**
  This chapter describes the procedures to manage the various types of database records used by MCS.

- **Chapter 7, "SYSTEM ADMINISTRATION"**
  This describes phone equipment numbers (e.g., extensions and trunk numbers) and the necessary assignments associated to them.

- **Chapter 8, "CONFIGURATION MANAGEMENT"**
  This chapter describes configuration parameters that affect MCS operation and that can be modified by the supervisor as necessary.

- **Chapter 9, "LOGIN NAME MAINTENANCE"**
  This describes the procedures for a supervisor to manage the login name and password security system.

- **Chapter 10, "SUPERVISOR REPORTS"**
  This chapter describes the procedures for the supervisor with information on how to view call processing statistics by operator on a daily basis.

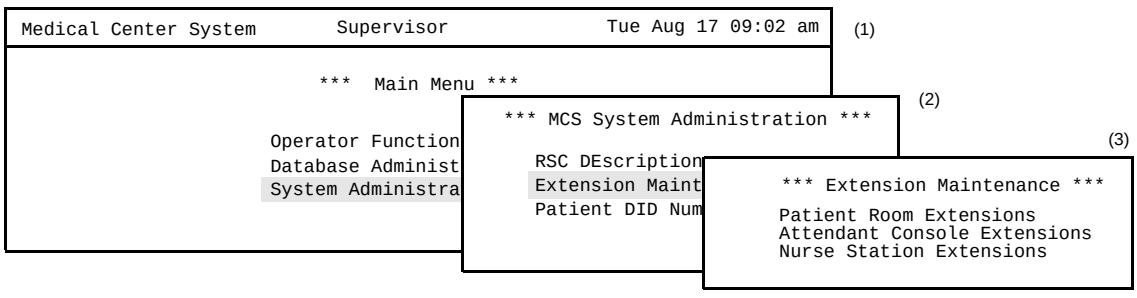
- **Chapter 11, "PROCESS AND ERROR MESSAGES"**
  This chapter presents an alphabetical list of the messages that might appear throughout MCS screen operations with a brief description of their meaning and recovery measures, if appropriate.
- **Chapter 12, "PLATFORM MANAGEMENT"**
  This chapter provides illustrated instructions for performing various tasks in support of MCS functions, including backing up the database on tape, managing the database indexes, resetting the colors seen on the MCS screens, and displaying MCS records and terminal assignments.
- **Chapter 13, "HOST INTERFACE ADMINISTRATION"**
  This chapter describes the options that are available for managing the communication interface between the MCS and the hospital information system, including log file access, initialization and termination of the interface, and configuration and statistical data.
- **Appendix A, "BEEPER INTERFACE"**
  This appendix describes the features and basic operation of NEC's MCS alphanumeric paging interface.

Chapter Layout

When using MCS, you can often choose a Main Menu option to display either a second-level menu of options (e.g., choose the System Administration option on the Main Menu to display the System Administration menu) or a new series of commands (e.g., Add, Delete, Modify). The chapters in this manual follow the same organization in that each second-level menu option or command is presented as a separate section.

Each multi-level chapter begins with an overview that describes the entire chapter and the options discussed within the chapter. Each section includes an illustration of the screen(s) or window(s) associated with the procedure, information related to performance of the procedure, and step-by-step instructions.

Some graphics illustrate the progression among a group of related screens.



The numbers in parentheses beside each screen graphic represent the number of the screen in the progression. These numbers are referenced in the procedural instructions, where applicable, to help you associate the action with the appropriate screen. In the illustration above, the Extension Main ten ace screen (3) displays after you select System Administration from the Main Menu (1) and Extension Maintenance from the MCS System Administration screen (2).

Option/Command Selection

Commands can be selected in either of two ways that are configurable through the Configuration Management option on the MCS Main Menu. Either you type the first letter of the command to immediately implement that command, or you type the first letter of the command followed by the **Enter** key. Instructions provided in this manual are all based upon entry of the first letter. When the first letter of a command or menu options has been used for another option on that screen, the next unused letter in the word is highlighted for use.

Procedures

Each section includes step-by-step instructions on how to select and move to the required screen and how to perform the available actions. The procedures are presented in a two-column layout. The left column contains the action to be taken. The right column contains the results of that action. Where there are field entries to be made on the screen, this manual provides field names in the left column and corresponding field definitions in the right column.

Action	Result
On the Main Menu, type **s** to select the System Administration option. (1)	The System Administration menu displays. (2)
On the System Administration menu, type **e** to select the Extension Maintenance option.	The Extension Maintenance menu displays. (3)

General Key Use

Throughout MCS, the following keys generally perform the actions described below.

Note: *Clear notation is made wherever other key or key combinations apply or these do not.*

Enter	–	Accepts a selection or field entry.
Esc	–	Generally exits the current screen or action to the last screen or action.
Arrow keys	–	Move the cursor in the direction shown.
Space bar	–	Selects an option when more than one is available in a field; serves to toggle among scrolled or side-by-side options in a field.
Backspace	–	Erases any data in a field.
Tab	–	Expands a data record to expose more information or provide other options that can be selected.

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Chapter 2 SERVER INSTALLATION

Introduction

This chapter provides a step-by-step description of the installation and setup of Medical Center System (MCS). The following steps must be taken before MCS can be installed:

1. The OAI/APM system must be installed on the SCO UNIX system.
2. The Informix Dynamic Server (IDS) Workgroup Edition Version 7.30 must be installed on the SCO UNIX system.

Note: *A system obtained through NEC CNG Division will normally have been preconfigured with these requirements. If reinstalling or upgrading a system, the installer should contact NEC to obtain the system staging procedures.*

The installation and setup of MCS involves the following procedure. Perform the installation in this sequence and refer to the listed sections for detailed instructions:

1. **Hardware Installation on page 11**
   Each attendant station consists of an NEC Advanced Attendant Console and a CRT. This section presents the attendant setup for each station and discusses how the hardware configurations are used to determine software characteristics.
2. **Software Installation on page 12**
   This section discusses installation and configuration of the MCS software components of the UAP.
3. **Application Configuration on page 19**
   MCS is internally supported by the Applications Manager (APM) and must therefore be set up in the APM environment. This section presents a detailed description of the required setup. Use the instructions provided in the *APM Operations Manual* to make the entries contained in this section.
4. **Database Requirements on page 32**
   MCS provides two default APM databases that are loaded during software installation. One of these databases can be changed through the APM Database Administration option. This section defines the fields and entries in this database. Use the instructions provided in the *APM Operations Manual* to make any required changes to the database presented in this section.
5. **MAT Assignments on page 34**
   Specific data settings must be assigned at the NEAX2400 Maintenance Administration Terminal (MAT) before MCS will function. This section specifies the necessary commands and the values to which they are to be set.
6. **Attendant Station Preparation on page 35**
   Attendant stations are set up via the MCS Main Menu. Enter from the UNIX login prompt during this step.

7. **Extension Installation**

   After the installation is performed as outlined in Steps 1 through 6, the extensions must be added to the Informix database. Each extension is assigned through the Extension Maintenance option, entered from the System Administration option on the MCS Main Menu.

Note: *In some cases, sequence is important in the assignment process. We recommend a review of Chapter 7, "SYSTEM ADMINISTRATION" before beginning these assignments.*

The *Applications Manager Operations Manual* provides detailed instructions for using the APM menus and for completing the data entry screens shown in this manual. *NEAX2400 IMS System* manuals provide the procedures for making the data assignments at the NEAX MAT.

Hardware Installation

The hardware configuration of each attendant station determines the software characteristics for the attendant configuration in JAVA MCS. Each MCS attendant station consists of an NEC Advanced Attendant Console and a PC Workstation, and each is identified by the following unique characteristics:

Attendant ID: An attendant console equipment number for each particular station ranging from 1 to 16.

Extension: A unique extension assigned to the attendant console on the PBX.

Number Attendant Station

Number each attendant station with a unique value between 1 and 16, and label each with its assigned Attendant ID. The easiest method is to make the station Attendant ID match the logical ID of each attendant console as it is assigned on the NEAX Maintenance Administration Terminal. (Refer to MAT Assignments on page 34 for more information.)

Software Installation

This section discusses the installation of MCS software from the release media and describes the required MCS software configurations. Before beginning this section, be sure to install the UNIX operating system, including the raw partition required for Informix, and the Applications Manager platform. Refer to the instructions provided with each of these software packages for more information.

Installation of MCS software is initiated from the Applications Manager (APM) Platform Maintenance Main Menu. To display this menu, type the login **apmadm** at the UNIX prompt and press **Enter**. When prompted, type the assigned password and press **Enter**. Using instructions in the *APM Operations Manual*, select and implement the **Installation of Applications/Packages** option from this menu to load MCS software from release media. As the installation process executes, follow the steps described below as they correspond to the screen display, and make entries as indicated. Required input is shown in **boldface** type.

Step 1: Superuser/ Root Password

Type the password for the root login and press **Enter** to continue. If you type an invalid password, the message "Error entering root password. Installation failed" displays, the installation cancels, and you must restart the installation.

```
                MCS Installation

Installation requires Super User (root) privileges.

NOTE: To re-run this script login as 'apmadm' get to 'Unix'
        and execute the following command '/oai/install/mcs.ins'.

su root:
Password: <root password> <Enter>
```

Figure 2-1 Super User Root

After entering a valid root password, the MCS user account installation will quickly display several screens as the install process continues. Some example screens are shown below:

```
Installing 16 mcs network users on SCO UNIX.
User (mcs1) installed.
User (mcs2) installed.
User (mcs3) installed.
User (mcs4) installed.
```

```
Deleting password for user: mcs1
Last successful password change for mcs1:  NEVER

Deleting password for user: mcs2
Last successful password change for mcs2:  NEVER
```

Figure 2-2 Example Install Screens

Step 2: MCS Login Names

The *mcs* and *mcsadm* login names are installed with the same user ID. (The default is *4001*.) Any change in the user ID value must be made for both login names, since they both use the same user ID value. Press **Enter** at each user ID prompt to accept the default value. A warning message displays when the 4001 user is being installed. Type '**y**' and press **Enter** at the warning prompt and continue the installation. The installation should default through this section. If another user is using the assigned ID, you will need to select another ID by adding one to the default until it can be assigned.

Step 3: MCS Installation Processing

The installation script performs several steps after you enter the login name. Information about these steps displays as they are performed. None of these steps require input. This process includes the following actions:

- Entering boot-up commands into UNIX boot-up sequence.
- Installing all remaining MCS files and directories as well as MCS host directories and executables.
- Entering MCS crontab information.

At the prompt, type '**y**' and press **Enter** to continue the installation.

```
.
.
.
Installing MCS system boot sequence...
mcs crontabs entries complete...
Installing gettydefs entry for MCS.
Installing MCS directories and executables...
Continue with installation of Mcs/Informix Database (y/n) [ ]
```

Figure 2-3 MCS Installation Processing

Step 4: Informix Database Installation

The figure below shows a normal execution of the Informix setup and includes the required input for each prompt. Type **y** and press **Enter** if this is the first time this installation is being performed.

The *informix* user must not have a password, as described in the APM Informix Installation section. If the informix user does have a password, this step will fail. Required input is shown in boldface type.

```
Please Enter su/informix Password: <Enter>
MCS Informix Database Installation

Bringing Informix Database Engine On-line...
Does.the Mcs Database already exist? (y/n) n <Enter>
Creating MCS Informix database...

Creating Mcs database: [mcsdb].
Mcs database [mcsdb] created.

MCS Informix database created.
Do the Mcs Database Indexes already exist? (y/n) n <Enter>
.
:
Building Mcs database indexes: [mcsdb].
Mcs database [mcsdb] indexes built.

.
.
MCS Installation Complete.
```

Figure 2-4 Informix Setup

The APM Main Menu displays. Select the **Logout** option from the Main Menu.

Step 5: Jmcmp Server Software Installation

JMCMP Pre-Install

This installs the Java JMCMP server software. The JMCMP Pre-Install step of the installation checks for previous installed versions of JMCMP Server. If no previous versions exist, the following is displayed: Press **Enter** to continue.

```
JMCMP Server Pre-Install

Checking the system configuration....

JMCMP Server Pre-Install Complete

Press "Enter" to Continue Installation:
```

Figure 2-5 Jmcmp Pre-Install - 1st Install

Step 5: Jmcmp Server Software Installation (Cont)

However, if a previous version is detected, an option is given to either upgrade (leaving configured data alone), overwrite (completely overwrite all Jmcmp data), or abort the installation. Enter '**u**', '**o**', or '**a**' to upgrade, overwrite, or abort the installation and then press **Enter**.

```
JMCMP Server Pre-Install

Checking the system configuration....

JMCMP Server Ver1.0 Currently Installed

Do you wish to upgrade, overwrite the existing
JMCMP Server Installation or Abort? (u/o/a):
```

Figure 2-6 Jmcmp Pre-Install - Install Options

If the upgrade option is chosen, the following is displayed: Press **Enter** to continue

```
Saving Current JMCMP Server Applications and Configurations
To insure access to data please login as root

Login: root
Password:

Adjusting directory access ... Done.

JMCMP Server Pre-Install Complete

Press "Enter" to Continue Installation:
```

Figure 2-7 Jmcmp Pre-Install - Upgrade Option

If the overwrite option is chosen, the following is displayed: Press **Enter** to continue

```
Overwriting Existing JMCMP Server Installation
To insure access to data please login as root

Login: root
Password:

Adjusting directory access ... Done.

JMCMP Server Pre-Install Complete

Press "Enter" to Continue Installation:
```

Figure 2-8 Jmcmp Pre-Install - Overwrite Option

Step 5: Jmcmp Server Software Installation (Cont)

JMCMP Install

After the Pre-Install phase of installation, the following is displayed:

```
        Installation requires Super User (root) privileges.

    NOTE: To re-run this script login as 'apmadm' get to 'Unix'
        and execute the following command '/oai/install/jmcmpServer.ins'.
su root
Password:
```

Figure 2-9 Jmcmp Installation - Access to Data

Enter the root password and press **Enter** to allow proper access to configuration data. If this is a first install of Jmcmp Server, the following is displayed:

```
    Initial JMCMP Server Install

    Unpacking Install JMCMP Server Ver1.0.
```

Figure 2-10 Jmcmp Installation - Initial Installation

If the upgrade option is selected, as described in Figure 2-6, “Jmcmp Pre-Install - Install Options” on page 15, the Jmcmp Server application, the following is displayed:

```
    Upgrading JMCMP Server Ver1.0 to Ver1.1

    Unpacking Upgrade JMCMP Server Ver1.0
Installation Complete

    Hit "Enter" to continue:
```

Figure 2-11 Jmcmp Installation - Upgrade Installation

Pressing **Enter** installs the new applications, and then restores all configuration data from the previous installation. For the ‘**Upgrade**’ option, no other configuration is needed, and installation is complete.

Step 5: Jmcmp Server Software Installation (Cont)

If overwrite the existing installation is selected, the following is displayed:

```
Overwriting JMCMP Server Ver1.0

Unpacking Install JMCMP Server Ver1.0.
```

Figure 2-12 Jmcmp Installation - Overwrite Installation

This installs the new applications, plus sets all configuration data to default values. If the Jmcmp Server was previously installed, the APM application "JmcmpConnServer" may already be configured. If so, the following is displayed:

```
Application "JmcmpConnServer" is already configured.

Do you wish to overwrite current configuration
data with the new default data? (y/n)
```

Figure 2-13 Jmcmp Installation - Overwrite APM Application Configuration

To keep the same configuration parameters for the APM application "JmcmpConnServer", type '**n**' and press **Enter**. To set the configuration parameters to default values, which must be modified later, type '**y**'and press **Enter**.

If this is an "Initial" installation, or if overwriting the existing installation, the allowable client connections to the Jmcmp Server must be defined. The following is displayed:

```
                JMCMP Server Connection ID Configuration

For each Java Client connection, an identifier must be
defined.  The identifier can be either:

    (a) A fully qualified host name, or a hostname that can be
        resolved on the Server machine.
        (e.g., "clientmachine.domain.com")
    (b) The 32-bit IP address of the client machine.
        (e.g., "123.45.678.901")
    (c) The 48-bit MAC address (Ethernet address) of the client's
        Network Interface Card.
        (e.g. 00:20:af:9c:5a:b3)

Do you wish to edit the JMCMP Server Connection ID configuration
file at this time (vi editor) ? (y/n)

    NOTE: To exit the vi editor without saving, enter ":q!"
(Hit Enter to continue)
```

Figure 2-14 Allowable Client Connections Description

Step 5: Jmcmp Server Software Installation (Cont)

Entering '**y**' and pressing **Enter** starts up the 'vi' editor, allowing modifications to the User Address Mapping File:

```
#
#  User Address Mapping File
#
#     In
# POS  Use  Address
# ---  ---  ------------------
  01    0   localhost
  02    0
  03    0
  04    0
  05    0
  06    0
  07    0
  08    0
  09    0
  10    0
  11    0
  12    0
  13    0
  14    0
  15    0
  16    0
```

Figure 2-15 Allowable Client Connections Configuration File

For each client position, enter the hostname, IP address, or MAC address of the client machine. When the installation is complete, the following is displayed:

```
NEC America Inc     JmcmpConnServer Ver1.0 Installation     Wed - Aug 25, 1999


Installation Complete

      Hit "Enter" to continue:
```

Figure 2-16 Jmcmp Installation - Installation Complete

Step 6: Java Server/Client Component Installation

A Java software component must be installed on the server to enable communication with Java clients. This installation is initiated from the Applications Manager (APM) Platform Maintenance Main Menu. To display this menu, type the login **apmadm** at the UNIX prompt and press **Enter**. When prompted, type the assigned password and press **Enter**. Using instructions in the *APM Operations Manual*, select and implement the **Installation of Applications/Packages** option from this menu to load this software component from release media. When all release media has been loaded, the installation of this component is complete. No further setup is required for this component.

Application Configuration

MCS is internally supported by the APM and must be configured in the APM environment.

MCS uses an autoconfiguration utility program to automatically configure some MCS settings for the APM platform. This program utility runs upon installation. If the utility runs successfully, specific adjustments can be made to the application parameters, depending on site requirements.

Note: *If an error occurs during installation, you can try to run the autoconfig program again or you can enter the information into the APM manually using the information provided in this chapter.*

After the autoconfiguration utility has run successfully, the initialization time settings for the database processing applications must now be configured. Configuring these settings is described in three steps (*on page 28*, *Step 9: Mcs_Recluster Control Options on page 30*, *Step 10: Mcs_Host_ Statistics Control Options on page 30*) in the following pages.

MCS is configured into the APM system using the **Add** command on the Application Configuration screen. To access the Application Configuration option, use the following steps:

1. Type the System Administrator password at the APM password screen.
2. Select the **Application Configuration** option from the System Administration menu.

This section contains the data that should be entered to the configuration file for MCS. The following components must be configured:

Monitor – Controls call parking and retrieval, restrictions, and DID number management.

Server – Controls source caller data displayed on the attendant consoles, directory assistance, and beeper functions. You may need to set up more than one server, depending on the server ratio and the number of attendants. (Refer to the Server Ratio section in Database Requirements on page 32.)

Recluster – Periodically reclusters Informix system tables for more efficient processing of the database. You must schedule this component under Control Options on the APM Operations Menu in order for it to function automatically.

Host Statistics – Periodically creates a log that contains the count of records received from the Hospital Information System, including admissions, discharges, and transfers. All error transactions will appear in the log. You can display the log file from the Statistics option on the MCS Administration Menu (login: mcsadm).

Cleaner – Periodically cleans out any records of patients that have been discharged. It also makes available DID numbers that have been offered but not assigned to an admitted patient after a set amount of time. You must schedule this component under Control Options on the APM Operations Menu in order for it to function automatically.

Java Services – Controls the Java graphical user interface between the host server and the Java client workstations. All component parameters are automatically configured at installation.

For instructions on what these parameters mean and how to make these entries, refer to the *APM Operations Manual*.

Step 1: Application Characteristics

To add MCS to the APM Application Configuration file, set up each of its components exactly as follows:

Parameter	Monitor	Server	Cleaner	Recluster	Host Statistics	JAVA Services
OAI Application	Y	Y	N	N	N	N
CRT Application	N	N	N	N	N	N
Communication Queue	N	N	N	N	N	N

Parameter Definitions:

OAI Application – Whether (Yes or No) this component communicates with the NEAX2400 using OAI processes.

CRT Application – Whether (Yes or No) this component runs on the same screen as the APM, rendering the APM temporarily inaccessible.

Communication Queue – Whether (Yes or No) this non-OAI application needs an IPC queue to communicate with other processes.

Step 2: Monitor Configuration

Primary Configuration Parameters

On the APM Configuration Entry screen, make entries for each parameter shown below. The application name for the server is a derivation of the name configured in the Server Base Name field of the mcscfg database. For parameters shown with an asterisk (*) in the table below, make the entries exactly as shown. The other parameter entries are shown with sample entries that may be changed to meet site requirements.

Parameter	Monitor
Application Name	Mcs_Monitor
Executable Filename*	/oai/app/mcs/bin/mccdmn
Group*	MCS
Response Mode*	N(otify)
Initialization Batch	N(o)
Termination Mode*	M(essage)
Standard Output	/dev/null
Number of Restarts	*

Parameter Definitions:

Application Name – The name displayed in the APM menus. This name is displayed as it is entered here. You can use lowercase letters and punctuation but not spaces.

Executable Filename* – The path name of the executable file.

Group* – The group to which the component is tied.

Response Mode* – The action that the APM is to take with the component if a member of the group terminates.

Initialization Batch – Whether (Yes or No) the component is to be initialized automatically when the OAI system is initialized.

Termination Mode* – How the APM is to notify the component to terminate.

Standard Output – The file into which component output is redirected.

Number of Restarts – How many times the APM may restart the component after it terminates in error.

Facilities

According to instructions in the *APM Operations Manual*, name the following NEAX2400 facilities for the designated components using the **Facilities** command on the APM Configuration Entry screen:

FLF	Free Location	SMFN	Status Notification (N)
RCF	Restriction Control	SMFR	Status Request (R)
SCF	Switch Control		

Step 2: Monitor Configuration (Cont)

OAI Configuration

Use the **OAI-Conf** command on the APM Configuration Entry screen to make the necessary parameter entries. For parameters shown with an asterisk (*) in the table below, make entries exactly as shown. The other parameters are shown with sample entries that may be changed to meet site requirements. Use the instructions provided for this option in the *APM Operations Manual*:

Parameter	Entry	Description
Database Name #1*	/oai/db/cur/Mcscfg	The path name of the database containing setup information.
Database Name #2*	/oai/db/cur/Mcsfile	All the directory and file names needed by the MCS.
Timeout Value #1	10	How many seconds to wait before trying to place a call again on an ANT.
Timeout Value #2	5	Not Used
Tenant Number	1	Tenant for the conversation monitoring extension, attendant consoles, announcement and dictation trunks, and the parking monitored number.
Source Link Name	OAI1TCP	Port on the source side of the communication link. Entry should match a link name in the APM system configuration file.
Destination Link Name	PBX1TCP	Port on the destination side of the communication link. Entry should match a link name in the APM system configuration file.
Association Recovery	40	Number of seconds Mcs_Monitor waits before trying to reestablish an association with the NEAX that has been released.

Step 2: Monitor Configuration (Cont)

User-Defined Parameters

Make the additional parameter entries exactly as shown below through the **UserDefined** command on the OAI Configuration screen.

User Defined #	Entry	Description
1	5	Number of seconds to wait for a response from an attendant console before assuming that communication with it is not working.
2	600	Number of seconds between handshakes between the monitor and the attendant consoles.
3	15	Number of seconds that the attendant console has to respond to a handshake with the monitor before it is considered disabled.
4	600	Number of seconds between checks of Server function by the monitor.
5	0#	The operator to which all parked calls are recalled when the monitor is initialized.
6	5	Maximum number of Server restarts.
7		Priority access code used for multiple recall.
8	100	Maximum number of records to be retrieved in any one database search.
9	37121	Error code that is returned from the PBX indicating that the attendant is idle. Type **37125** for NEAX version J.4.02 or lower. Type **37121** for NEAX version J.4.10 or higher.
10	37122	On the MMG, the error code that is returned from the PBX indicating locked attendant memory. Leave this field blank for any other PBX version.
11	2	Number of times MCS is to retry after receiving error code 37122.

Step 3: Server Configuration

Primary Configuration Parameters

On the APM Configuration Entry screen, make entries for each parameter shown below. The application name for the server is a derivation of the name configured in the Server Base Name field of the mcscfg database. For parameters shown with an asterisk (*) in the table below, make the entries exactly as shown. The other parameters are shown with sample entries that may be changed to meet site requirements.

Parameter	Server
Application Name	Mcs_Server1
Executable Filename*	/oai/app/mcs/bin/mccsrv
Group*	MCS
Response Mode*	I(gnore)
Initialization Batch	N(o)
Termination Mode*	M(essage)
Standard Output	/dev/null
Number of Restarts	0

For information on parameter definitions, see page 21.

Facilities

According to instructions in the *APM Operations Manual*, name the following NEAX2400 facilities for the designated components using the **Facilities** command on the APM Configuration Entry screen:

SCF	Switch Control	SMFN	Status Notification (N)
SMFR	Status Request (R)		

Step 3: Server Configuration (Cont)

OAI Configuration

Use the **OAI-Conf** command on the APM Configuration Entry screen to make the necessary parameter entries. For parameters shown with an asterisk (*) in the table below, make entries exactly as shown. The other parameters are shown with sample entries that may be changed to meet site requirements. Use the instructions provided for this option in the *APM Operations Manual*:

Parameter	Entry	Description
Database Name #1*	/oai/db/cur/mcscfg	Path name of the database containing setup information.
Database Name #2*	/oai/db/cur/mcsfile	All the directory and file names needed by the MCS.
Timeout Value #1	5	Number of seconds to wait for a response from an attendant console before assuming that communication with it is not working.
Timeout Value #2	60	Number of seconds to wait before clearing lit LEDs after placing an emergency alert.
Tenant Number	1	Tenant for the conversation monitoring extension, attendant consoles, announcement and dictation trunks, and the parking monitored number.
Source Link Name	OAI1TCP	Port on the source side of the communication link. Entry should match a link name in the APM system configuration file.
Destination Link Name	PBX1TCP	Port on the destination side of the communication link. Entry should match a link name in the APM system configuration file.
Association Recovery	40	Number of seconds the monitor waits before trying to reestablish an association with the NEAX.

Step 3: Server Configuration (Cont)

User-Defined Parameters

Make the additional parameter entries exactly as shown below through the **UserDefined** command on the OAI Configuration screen.

User Defined #	Entry	Description
1		Dictation trunk number for conversation monitoring. If no dictation trunk is to be used, leave this field blank.
2	Mcs_Monitor	Monitor component logical name.
3	10	Call kind field that shows priority notification on the PBX.
4	3276	Number of the MCS shared memory key.
5	3276	Number of the MCS semaphore key.
6		If set to a value, this field enables the checking of a D^{term} for do-not-disturb status prior to call routing.
7	3	Enables MCS to process multiple recalls. Set to **3** for J.4.02 or earlier PBX firmware versions, **11** for later versions without multiple recall, or **19** for later versions with multiple recall.
8	37122	On the MMG, the error code that is returned from the PBX indicating locked attendant memory. Leave this field blank for any other PBX version.
9	2	Number of times MCS is to retry after receiving error code 37122.
10	/oai/app/mcs/ menus/ Mserver.cfg	Configured by MCS application

Step 4: Recluster Primary Configuration

On the APM Configuration Entry screen, make entries for each parameter shown below. The application name for the server is a derivation of the name configured in the Server Base Name field of the mcscfg database. For parameters shown with an asterisk (*) in the table below, make the entries exactly as shown. The other parameters are shown with sample entries that may be changed to meet site requirements.

Parameter	Recluster Entry
Application Name	Mcs_ReclusterTables
Executable Filename*	/oai/app/mcs/etc/update
Group*	
Response Mode*	I(gnore)
Initialization Batch	N(o)
Termination Mode*	K(ill)
Standard Output	/dev/null
Number of Restarts	0

For information on parameter definitions, see page 21.

Step 5: Host Statistics Primary Configuration

On the APM Configuration Entry screen, make entries for each parameter shown below. The application name for the server is a derivation of the name configured in the Server Base Name field of the mcscfg database. For parameters shown with an asterisk (*) in the table below, make the entries exactly as shown. The other parameters are shown with sample entries that may be changed to meet site requirements.

Note: *These parameters are initially configured by the MCS host interface.*

Parameter	Host Statistics_ Entry
Application Name	Mcs_Host_Statistics
Executable Filename*	/oai/app/mcs/host/bin/hoststats
Group*	
Response Mode*	I(gnore)
Initialization Batch	N(o)
Termination Mode*	K(ill)
Standard Output	/dev/null
Number of Restarts	0

For information on parameter definitions, see page 21.

Step 6: Cleaner Primary Configuration

On the APM Configuration Entry screen, make entries for each parameter shown below. The application name for the server is a derivation of the name configured in the Server Base Name field of the mcscfg database. For parameters shown with an asterisk (*) in the table below, make the entries exactly as shown. The other parameters are shown with sample entries that may be changed to meet site requirements.

Parameter	Cleaner Entry
Application Name	Mcs_Dbclean
Executable Filename*	/oai/app/mcs/bin/dbclean
Group*	
Response Mode*	I(gnore)
Initialization Batch	N(o)
Termination Mode*	K(ill)
Standard Output	/dev/null
Number of Restarts	0

For information on parameter definitions, see page 21.

User-Defined Parameters

User Defined #	Entry	Description
1	138	Discharge record release time in hours. (Records for discharged patients are removed from the database after the defined number of hours.)
2	72	DID number release time in minutes. (DID numbers for discharged patients are deleted from database after the defined number of minutes.)

Step 7: Java Services Primary Configuration

The APM configuration parameters are automatically set during the Java MCMP Server installation. Some of the user-defined parameters may need to be modified to reflect the installation site's configuration.

Parameter	Entry
OAI Application	N
CRT Application	N
Communication Queue	N
Application Name	JmcmpConnServer
Executable Filename	/oai/app/mcs/bin/jmcmpConnServ
Group	JMCMP
Response Mode	Ignore
Initialization Batch	Y
Termination Mode	T
Standard Output	/dev/null
Number of Restarts	5

User-Defined Parameters

User Defined #	Default Value	Description
1	2030 (Do not change this value unless this port number conflicts with another listening port.)	*JMCMP Server Port* - This is the TCP I/P port number on which JMCMP Server is listening.
2	/oai/app/mcs/bin/jmcmp (Do not change unless this application has been renamed.)	*JMCMP Application Path* - This defines the absolute path of the JMCMP process spawned by the JMCMP Server when a connection is made.

Step 8: Mcs_Dbclean Control Options

From the APM Administration Menu, select **Control Options**. When the Control Options screen displays, select the **Applications** command. Then, select **Mcs_Dbclean** and set up the schedule for its execution, as illustrated in the following example:

Initialize:

Minute (0-59): 1
Hour of Day (0-23): 0
Day of Month (1-31): *
Month of Year (1-12): *
Day of Week (0-6): *

When you have entered these choices, select **Quit** and then type **Y** to save the data. The Applications menu redisplays.

Mcs_Dbclean automatically ends processing when it has cleaned up the database.

Step 9: Mcs_Recluster Control Options

From the APM Administration Menu, select **Control Options**. When the Control Options screen displays, select the **Applications** command. Then, select **Mcs_Recluster** and set up the schedule for its execution, as the sample shows below:

Initialize:

Minute (0-59): 5
Hour of Day (0-23): 0
Day of Month (1-31): *
Month of Year (1-12): *
Day of Week (0-6): *

When you have entered these choices, select **Quit** and then type **Y** to save the data. The Applications menu redisplays.

Mcs_Recluster automatically ends processing when it has reclustered the database.

Step 10: Mcs_Host_ Statistics Control Options

From the APM Administration Menu, select **Control Options**. When the Control Options screen displays, select the **Applications** command. Then, select **Mcs_Host_Statistics** and set up the schedule for its execution, as illustrated in the following example:

Initialize:

Minute (0-59): 10
Hour of Day (0-23): 0
Day of Month (1-31): *
Month of Year (1-12): *
Day of Week (0-6): *

When you have entered these choices, select **Quit** and then type **Y** to save the data. The Applications menu redisplays.

Mcs_Host_Statistics automatically ends processing when it has generated the statistics.

This completes the configuration of MCS in the APM. Now go to the Database Requirements on page 32 to prepare its database support.

Database Requirements

MCS requires two APM databases that were installed with default values when the software was loaded from the release media. Only one (*mcscfg*) can be modified. The other database (*mcsfile*) should not be changed at all without first consulting technical support. You can change the *mcscfg* database through the **Database Administration** option on the APM System Administration Menu.

The contents of the **mcscfg** database are described below. Using instructions provided in the *APM Operations Manual*, enter the APM System Administration Menu and change *mcscfg* database entries as required through the **Database Administration** option. Any messages displayed during these steps are described in the Process and Error Messages chapter of the *APM Operations Manual*.

Note: *Remember to process and install mcscfg after any of the following field information has been changed through the Build Master Database option.*

MCSCFG Database Information

Remember to configure each additional Server (i.e., Application Configuration.)

Server Base Name = Mcs_Server#

The name of the Server component. The # marks the position of the actual number of the Server process.

Server Ratio = 8

The number of attendants that can be served by any one Server component. This is the default value. Given that there are 16 attendants at most, there should be at least two Server components configured (**Mcs_Server1** and **Mcs_Server2**).

Max Number of MCMP's = 16

The maximum number of attendants this system can handle. Changing this value has no effect. The maximum is always 16.

Conversation Monitoring # = 7207

The extension number of the D^{term} used during a Supervisor Alert operation to silently monitor an attendant conversation. If conversation monitoring is not used, this field should be left blank.

Parking Number = 7000

The OAI monitored number assigned to MCS. It can be defined on the PBX MAT using the command AMNO. The default value should be changed to a monitored number defined on the PBX. This value must be assigned correctly or the MCS will not go on-line.

Announcement Message # = 0

The number of the announcement trunk (ANT) as configured on the PBX to which all parked calls are to be parked. If an ANT is not to be used, this field should be set to 0.

Park Call Timeout = 60 seconds

MCS checks the call parking queue periodically. Any call parked for longer than this period of time is recalled.

Note: *The caller could stay parked approximately 30 to 45 seconds longer than the Park Call Timeout since the database checks are periodic, to avoid excessive system loads.*

Park Abandon Timeout = 1800

The amount of time that park records remain in the MCS database after the party has been recalled or released. This time period is also measured in seconds and is checked in the same way as the Park Call Timeout.

Recall Timeout = 90

This value is used by MCS to determine if a call answered by an attendant has been recalled by the PBX. This value should be adjusted according to the value configured in the PBX for recalls. It should be roughly equal to the amount of time set up for recalls in the PBX plus the amount of time it takes an attendant to answer the recall.

MCMP Queue Maximum = 10

The maximum number of messages allowed on the MCS IPC queue at any given time. Do not change this value without first consulting an NEC representative.

MCMP Queue Load = 5

The maximum number of messages that can be outstanding for an attendant process at any given time.

MCMP Queue Key = 9009

The IPC queue used by the MCS attendant processes.

Max Stations in Recall List = 100

The maximum number of stations that can be in the circular recall list maintained by the MCS. This variable directly affects IPC shared memory structures used by the MCS. It should not be changed while the MCS system is running. Do not change this value without first consulting an NEC representative.

Max Trunks in Recall List = 200

The maximum number of trunks that are stored in the circular recall list maintained by the MCS. This variable directly affects IPC shared memory structures used by the MCS. It should not be changed while the system is running. Do not change this value without first consulting an NEC representative.

This completes the database support in the APM. Now go to MAT Assignments on page 34 to make the necessary MAT assignments.

MAT Assignments

This guide assumes that data settings that affect the operation of all OAI software on a system-wide basis have already been assigned on the NEAX Maintenance Administration Terminal (MAT). Such settings include system index values and assignment of Interface I/O Port Data in the Interface Processor (IP). For more information about these system data settings and the MAT commands described below, refer to the *OAI Module Installation Manual for the NEAX2400 IMS*.

AMNO – Assignment of Monitored Number

MCS uses one OAI Monitored Number for use in parking calls. Failure to assign this number correctly prevents the MCS from establishing communication with the PBX.

ASAT – Assignment of Attendant Data

Each MCS attendant console must be assigned a unique station number. For instance, ATT #1 may have 3100, ATT #2 may have 3101, etc. Use this command to assign a number to each advanced attendant console.

This completes the MAT assignments. Now go to Attendant Station Preparation on page 35 to configure the Attendant Stations.

Attendant Station Preparation

To Configure Attendant Stations

From one of the configured terminals, log into the MCS by entering the login name **mcs** at the SCO UNIX login prompt and press **Enter**. The following screen displays from which you can enter the MCS Main Menu:

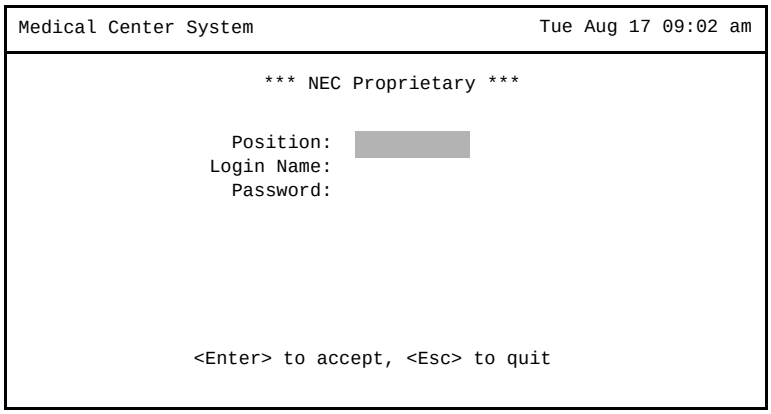

Figure 2-17 MCS Login Screen

Press <**Enter**> for the position data. The following error prompt will display at the bottom of the screen:

```
Enter Offline Maintenance Mode? (Y/N)
```

At the prompt, enter **Y** and press <**Enter**>.

Type **MCS** in the *Login Name* field and **MCS** in the *Password* field to log in as the supervisor. When the MCS Main Menu displays, perform the following tasks in the order shown:

1. Select the **System Administration** option, then the **Extension Maintenance** option, and then the **Attendant Console Extensions** option. This sequence displays the Attendant Console Extensions data entry screen for input. Add the extension numbers that have been assigned to the attendant consoles through the ASAT command at the NEAX MAT.

After all of the attendant console extensions have been entered, exit to the MCS Main Menu. Select the **Database Administration** option and then the **Attendant Stations** option, displaying the Attendant Station data entry screen for input of a configuration for each attendant. Each record requires the attendant ID (1-16), the extension just configured for that attendant (via the MAT and System Administration option), and the name of the terminal used by that station. Note that when entering terminal names, **/dev/** preceded the name.

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Chapter 3 JAVA MCS CLIENT INSTALLATION

Overview

This chapter provides step-by-step procedures to install and configure the JAVA MCS Client application. Descriptions and step-by-step instructions are found in the following sections of this chapter:

The JAVA MCS Client software can be installed on the workstations used by JAVA MCS agents to assist them in processing calls. This element can be installed on any workstation that is networked and connected to the JAVA MCS Server.

Installing the JAVA MCS Client

Use the following steps to install the JAVA MCS Client software:

1. Access the NEC UNIX OAI Applications site from your web browser. The address for your NEC UNIX OAI Application site consists of your UAP name and your domain name.

   For example, if your UAP name is “myuap” and your domain name is “mydomain.com”, then enter “myuap.mydomain.com” to access the UNIX OAI Applications Page, as shown in Figure 3-1.

Figure 3-1 NEC UNIX OAI Applications Installation Page

2. Select **Download Java1.2.2 Runtime Environment** from the “Getting Help” section to install the Java Runtime Environment on your workstation. Follow the prompt to install the Java Runtime Environment. Run the program from its current location, then select **Yes**. After the Java Runtime Environment installation is complete, the NEC UNIX OAI Applications Installation Page (Figure 3-1) is again displayed.
3. Select the **JAVA MCS Client** from the “Install OAI Apps From Web” section to begin installing the JAVA MCS Client. A security warning message will display, click **Yes** to continue. The Java Virtual Machine option dialog box (Figure 3-2) is displayed.

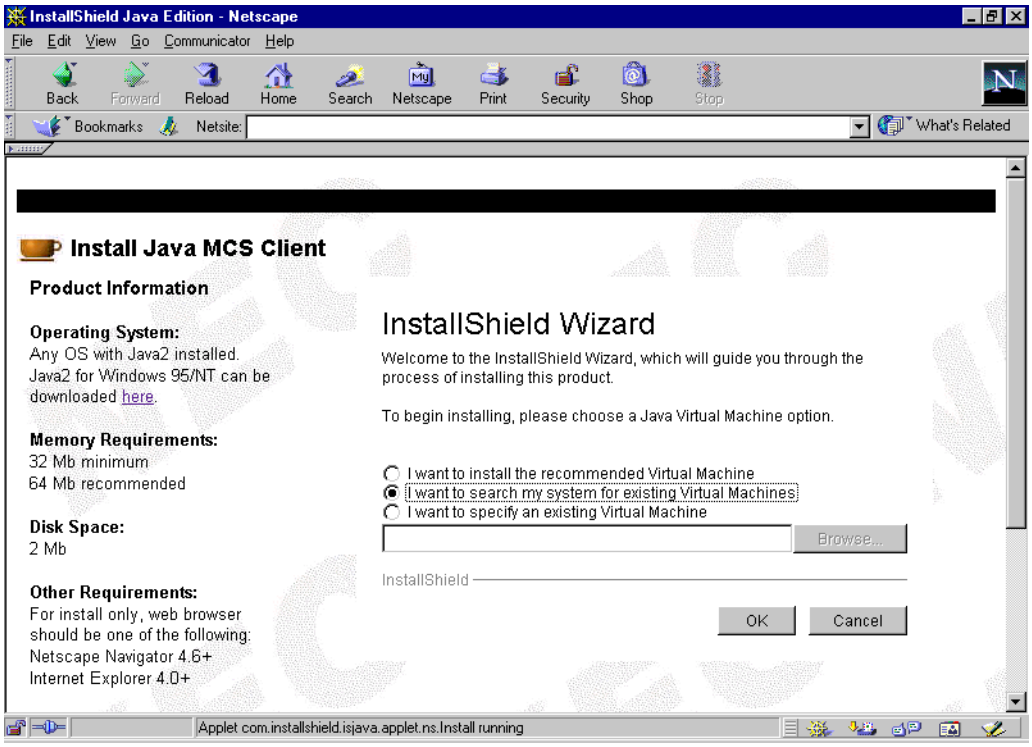

Figure 3-2 Java Virtual Machine option dialog box

4. Select the **I want to search my system for existing Virtual Machines** option. The Searching for VMs dialog box (Figure 3-3) is displayed.

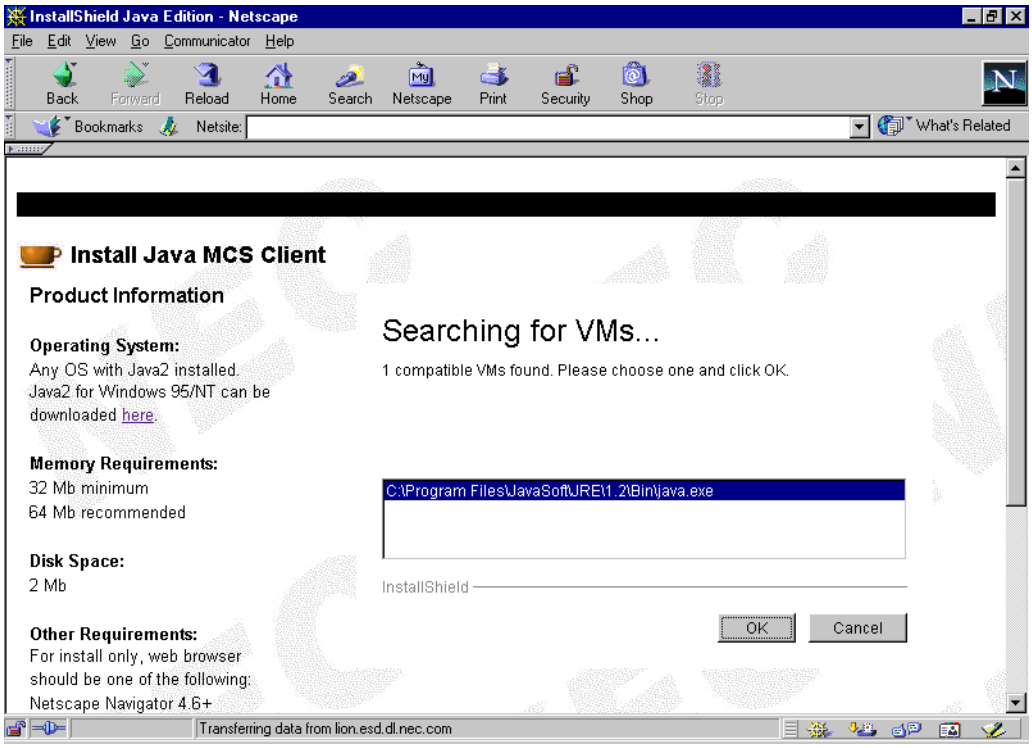

Figure 3-3 Searching for VMs dialog box

The installation program searches for installed virtual machines and displays the installed virtual machines in the window.

Select the virtual machine, then click **OK**.

The application is installed to the default directory. A progress indicator in the browser window indicates how much of the installation is complete, as shown in Figure 3-4.

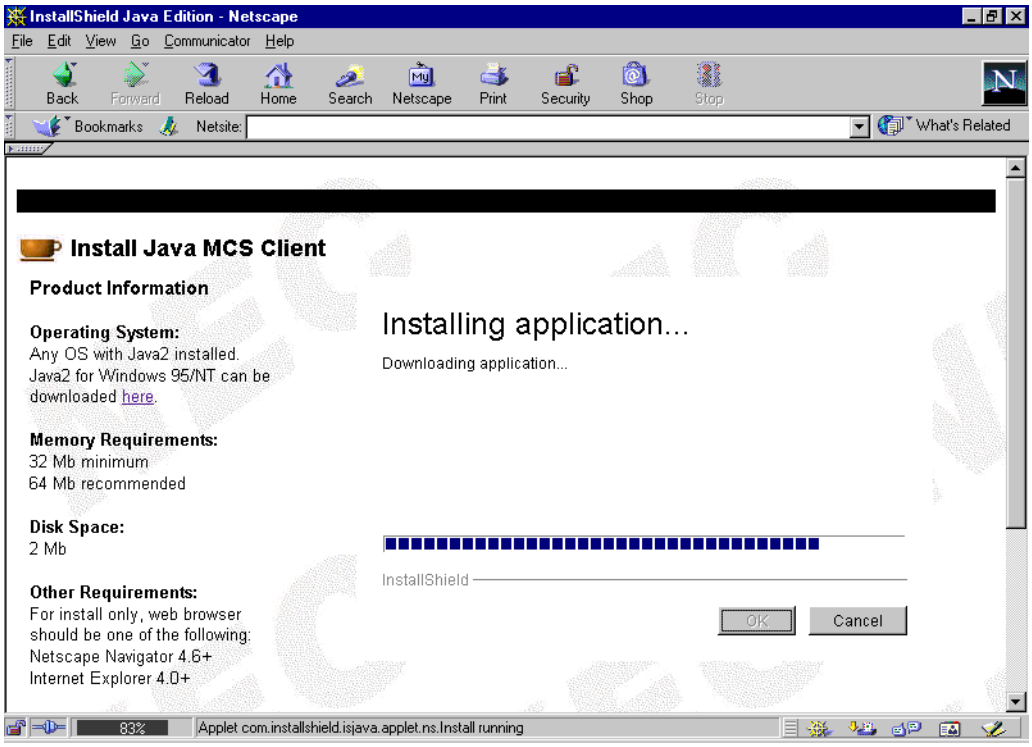

Figure 3-4 Installing Application progress indicator

5. When the virtual machine installation is done, click **OK**. The Welcome dialog box (Figure 3-5) is displayed.

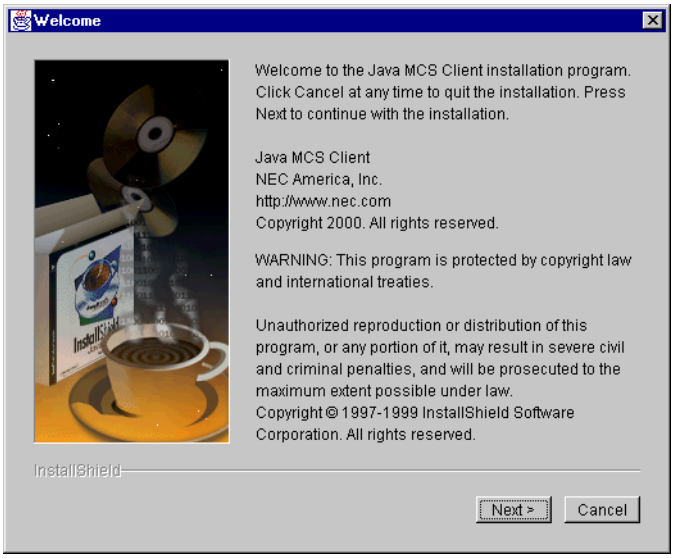

Figure 3-5 Welcome dialog box

6. Click **Next** to start the installation. A progress indicator shows how much of the installation is complete, as shown in Figure 3-6.

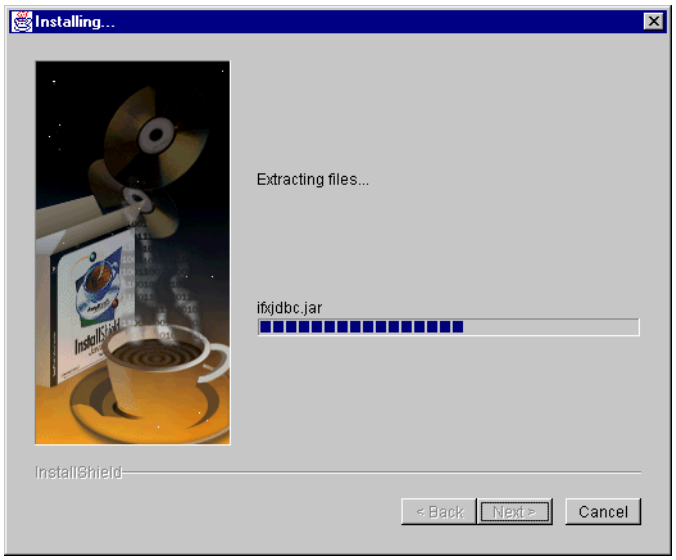

Figure 3-6 Installing Files progress indicator

7. When the installation program is finished, the Installation Complete dialog box (Figure 3-7) is displayed.

Figure 3-7 Installation Complete dialog box

8. Click **Finish** and close your browser window. The JAVA MCS Client is now installed. Refer to the *MCS (JAVA Edition) User Guide* for more information about the JAVA MCS Client application.

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Chapter 4 TELNET OPERATOR FUNCTIONS

Login

An operator or supervisor must login by entering **MCS** at the UNIX prompt. This login displays the MCS password entry screen where access security is implemented.

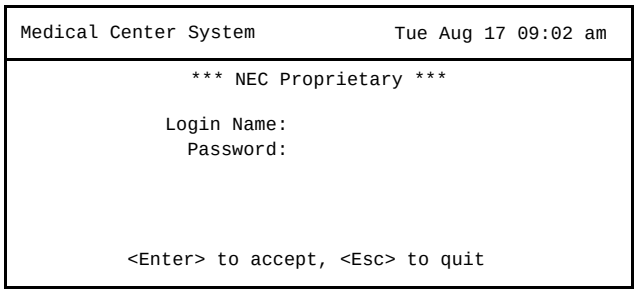

Figure 4-1 Password Entry

Screen Format

The MCS Telnet Main Menu is illustrated below in Figure 4-2. The screen parts that are common to all levels of the menu hierarchy are identified in the figure and are described below:

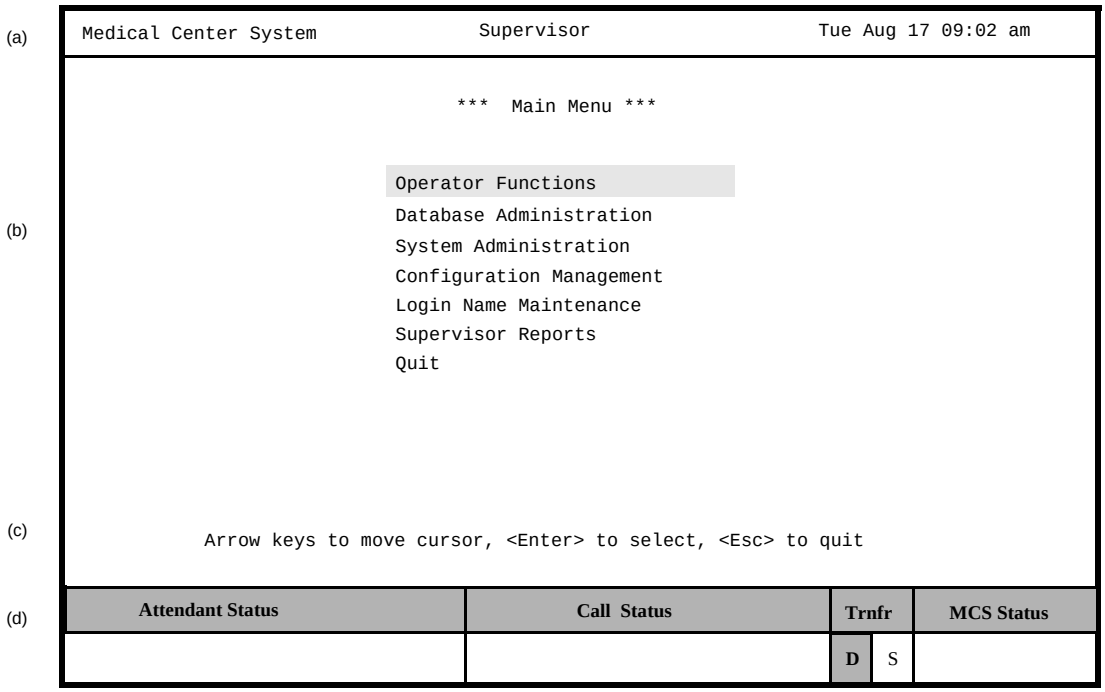

Figure 4-2 Screen Format

(a) **Header** – The top line contains the name of the menu system (Medical Center System), identification of the attendant console (in this case, Supervisor), and a time and date notation that is periodically updated. This line remains the same no matter what kind of changes take place in the rest of the screen.

(b) **Interactive Window** – This is the working area of the screen in which several different formats are displayed, including lists of choices, data input windows, and information displays. When the Operator Functions option is selected from the Main Menu, this area is further divided into multiple areas for Source Caller and Destination information.

(c) **Command Line** – Some menus contain action choices in this area of the screen (*Arrow keys to move cursor, <Enter> to select, <Esc> to quit*). Other menus display a set of available commands (e.g., *DirAsst, Park, Join/Rtrv, Beeper, Redial, Emerg, Clear,* and *Quit* commands on the Operator Functions screen).

(d) **Status Area** – The bottom area of the screen contains labeled areas in which information about the attendant, status of the current call, the type of transfer in effect, and the current MCS system status displays.

Selecting Operator Functions

Select the **Operator Functions** option from the MCS Main Menu to display the Operator screen, making MCS call processing functions accessible to the operator. If the operator is not set up for database capabilities, type the operator password at the login prompt to display the Operator screen directly.

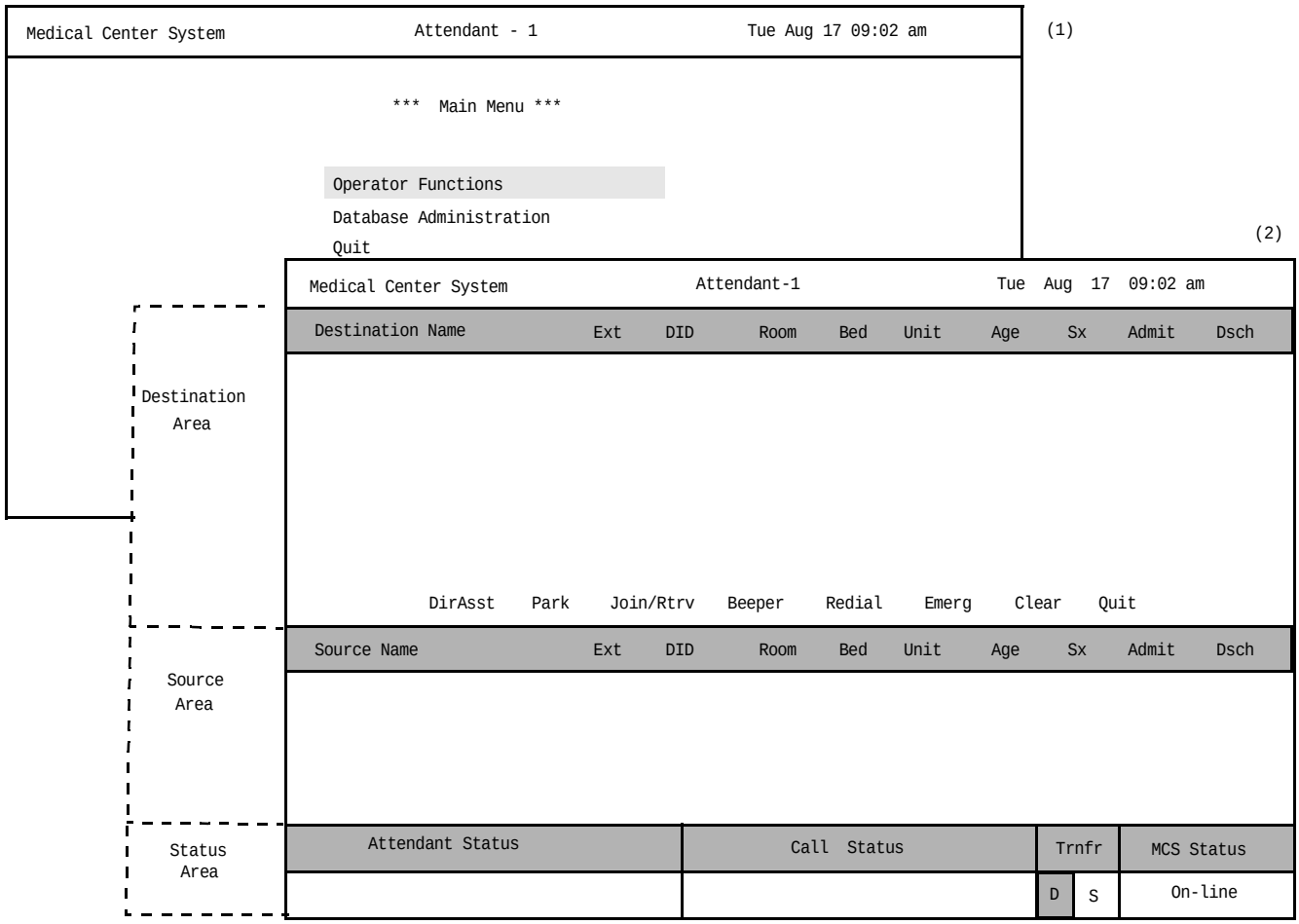

Figure 4-3 Operator Screen

On the Operator screen, the interactive window is divided into the Destination and Source areas. The Status area at the bottom of the screen shows the status of MCS operator functions. These areas are discussed below, as they relate to operator activity.

Status Area

The following sections in the status area display information about the current call processing environment.

MCS Status Window

This window in the bottom right corner of the screen displays the operational status of the MCS system. Whenever there is a change in status, the new status notation replaces the old, and a beep is sounded on the CRT. Any of the following notations can be displayed:

On-line: The OAI that enables communication between the attendant console and the CRT is initialized; the MCS and NEAX2400 are in full communication, with all screen functions available; and call events at this station are now being monitored. This is the normal status when the user enters the Operator Functions option.

Dir off: The Directory Assistance, beeper, and emergency functions are not operational, but Park/Retrieve is available.

Park off: The Park/Retrieve functions are not operational, but Directory Assistance and the other command functions are available.

Off-line: The OAI is not initialized, so the attendant console is operating independently of the MCS CRT. In this status, the operator can perform directory searches and message operations but not automated call processing. Therefore, all call placement functions must take place through the attendant console. When OAI functions are restored, the *Off-line* notation is replaced with a message showing a change in status, and the CRT beeps once. Operations can then be carried out normally with the degree of automated call placement shown by the new status.

Attendant Status Window

This window on the bottom left corner of the screen is reserved for real-time messages that relate directly to attendant-to-attendant communications. For instance, when a call is transferred between attendants, this area displays the message “Call transfer from Att-3”. This area also displays attendant supervisor alerts and error conditions that require special attention. Messages in this area clarify any events that affect the attendant console and communications among the attendants.

Call Status Window

The Call Status Window displays messages about all current call events. For example, an incoming call from an extension with more than one patient in the room generates a message here. The message “Extension Busy” shows an attempt to perform a Directory Assistance transfer to an off-hook extension.

Trnfr Window

This window at the bottom right of the screen allows operators to toggle between the following types of transfers:

Screened (S): Places the source caller on hold with music while the operator call is being placed to the destination number. The operator hears a ring-back tone (RBT) while the destination station phone is ringing. The operator is connected to the destination station when it is answered. Thereafter the operator may use the SRC, DST, TALK, CNCL, or Release keys to manipulate the call.

Direct (D): Causes the source caller to hear a RBT while the destination station phone is ringing. The operator is automatically disconnected from both parties, and the source caller is directly connected to the destination party without operator screening of the transfer.

The default transfer type is configurable through the **Configuration Management** option on the Supervisor Main Menu. The type of transfer currently in effect is highlighted.

Source Area

When the attendant console is on-line, MCS monitors all incoming calls. As each incoming call is answered, MCS automatically performs a database search for the dialed number. If the number is found, any information associated with it in the database displays in the Source area of the screen. When more than one person is assigned to an extension, a message showing the number of additional people is displayed in the Call Status window. Pressing the down-arrow key displays the next person in the list and the up-arrow key displays the previous person. The kind of information that is displayed depends upon the source of the call, as described below.

Patient

When an operator answers a call from a patient, information about the calling patient automatically displays below the Source Name label line if patient room extensions are available in the database. (See Figure 4-4.) Two more lines of Source information can be set up through the **Configuration Management** option on the Supervisor Main Menu.

Source Name	Ext	DID	Room	Bed	Unit	Age	Sx	Admit	Dsch
Taylor, Frederick	2201		220	1	A2	62	M	08-15	

Visitors: Yes
Comment: No solids until 08-17.

Attendant Status	Call Status	Trnfr		MCS Status
		D	S	On-line

Figure 4-4 Patient Caller

Staff or Non-Patient

Figure 4-5 below shows Caller information for non-patient or internal staff extensions. The comment field consists of up to two lines of information, as set up through the **Configuration Management** option on the Supervisor Main Menu.

Source Name	Ext	Dept	Room	Unit	Note
X-ray Department	3042	X-ray	321	3	Radiologist on-call 24 hrs/day.

Comment: Only accessible after hours with security card.
Comment: Located on 2East.

Attendant Status	Call Status	Trnfr		MCS Status
		D	S	On-line

Figure 4-5 Internal Staff or Non-Patient Caller

External

Figure 4-6 shows how trunk and route information on an incoming call from an external source is displayed. If a name for this particular trunk number has been entered in the database or if source number information is received for the call, it is also shown under Trunk Name. Each trunk listing contains one note field and up to two comment lines.

Trunk Name	Trunk Number	Note
Information	3000	Detour north parking lot Friday.

Comment: Never give out patient's home phone or address.
Comment: Transfer to main desk if needed.

Attendant Status	Call Status	Trnfr		MCS Status
		D	S	On-line

Figure 4-6 Incoming From an External Trunk

Destination Area

The destination area of the Operator screen changes as necessary to display information and to prompt for entry of the data that is necessary to complete a call transaction. The command line contains the actions that can be taken. The remainder of this chapter provides descriptions and step-by-step instructions on how to use each of these actions. Each action is discussed in a separate section, as noted below:

Directory Assistance – Search the database for destination information and then transfer internal, external, and attendant calls to the selected destinations. (See page 50.)

Call Park – Place a call on an announcement trunk or a monitored number for paging purposes. (See page 55.)

Parked Call Retrieval – Communicate with a previously parked call. (See page 57.)

Beeper – Contact a beeper-holder with a coded message. (See page 59.)

Redial – Use this command during Idle status to automatically dial the station that most recently called the operator. (See page 61.)

Emergency – Select a supervisor or an expert from a displayed menu to contact in case of emergency. (See page 62.)

Clear – This command removes all entries to the Destination and Source areas.

Note: *This command is not discussed further in this chapter.*

Directory Assistance

Use the **DirAsst** command to access the MCS directory assistance database to identify the destination of a call. This command can be selected from the Operator Screen when it is in idle status or while the operator is connected to a source caller.

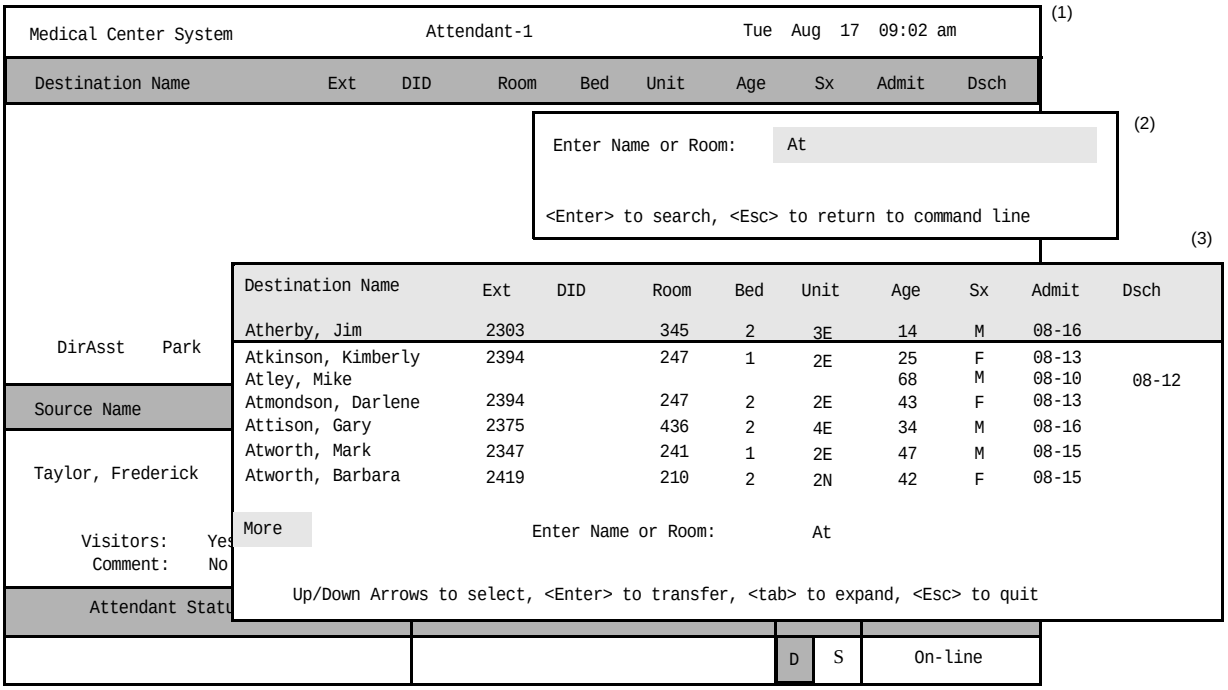

Figure 4-7 Directory Assistance

General Process

When a call is answered, the Source Name area automatically displays any information available on that calling number. Selection of the **DirAsst** command displays a prompt for a name or a room number to be used as a database search pattern. You can enter all or part of the name or number. MCS displays a list of matches from which the desired destination can be selected and the call transferred.

Note: *Pressing **Enter** on a blank field at the name or room prompt displays the full list of destinations in the database.*

Hot Key

Instead of entering the name or room number, the operator may press the MCS Hot Key to replace the command line with the following options. The hot key is a period (.) by default.

```
Pat's    Doc's    Employ's    Intrnl    Extrnl    Tests    Master
```

Selection of one of the options leads to a more specific search. For instance, selection of the **Patients** option allows the attendant to search only among the Patient database records. **Internal** refers to all extensions within the hospital phone system that are not assigned to patients, doctors, employees, or test/procedures. **External** refers to all telephone numbers that lie outside of the hospital phone system. **Master** refers to the full list, including the information available through all other command options.

To change the MCS Hot Key, select the Configuration Management option from the MCS main menu. If you enter the ampersand character (@) as the hot key character, the sub-directory look-up screen automatically appears after the Directory function is activated.

Directory Information

Directory Assistance information that is displayed in the Destination window consists of the following fields from the database:

Destination – A name from the database that matches the pattern entered at the prompt; may be the names.

Name – Name of patients, internal departments, non-patient extensions, external locations, or other attendants.

Ext – The phone extension tied to the displayed name.

Note: *No extension is displayed for patients in rooms without phones. An asterisk appears next to an extension of a patient who has not contracted for phone service or whose presence is confidential. To expand the record and display the reason for the '*' , press the Tab key. Patients whose presence is confidential are displayed in a different foreground color or, on monochrome terminals, blink.*

Dept – The medical department in which the assigned room is located.

Room – The number of the room to which the patient has been assigned.

The Ext., Dept., Room, and Bed fields are empty in the display when a patient has been discharged. When patient names are displayed, the following fields are also included in the Destination window:

Bed – The number of the bed to which the patient has been assigned.

Age – The three-digit age of the patient.

Note: *If the patient is months or days old, the third character is either an "m" or a "d" respectively -- for example, 100, 34, 12m or 1d.*

Sex	–	The gender of the patient.
Adm	–	Date that the patient was admitted to the hospital, in the format *mm/dd*.
Dsch	–	Date that the patient was discharged from the hospital, in the format *mm/dd*.

Special Destinations

Some destination names that are displayed from the database appear differently from the others in the list. These names are of patients to whom calls are generally not to be transferred. These "special" destinations are described below:

1. Extension preceded by an *: A patient who has either not paid for phone service or wishes to have no phone calls but is in a room that contains a phone. The expanded version of this record shows whether the patient wants to keep the number confidential or did not contract for phone service.
2. Extension field blank: If a patient has been assigned a DID, the extension number does not display. If no extension or DID is displayed, the room cannot receive calls.
3. Record is highlighted: A patient who has expired. This patient listing will have an *x* next to the *Ext* field.

Note: *The highlighting options are selected by the user.*

Expanded Display

Press the **tab** key while a record in the list is highlighted to display any additional information available about the selection. Enter and Esc are used to exit the window, and arrow keys move the cursor within the window.

Type of Transfer

Use the left- and right-arrow keys to select between direct or screened transfer. In a *direct* transfer, press **Enter** to transfer the source caller to the extension that is currently selected. This will release the operator and clear the Operator screen. In a *screened* transfer, place the source caller on hold, and connect to the destination. The operator can stay on the line as long as desired, but must release, cancel, or join the call manually via the attendant console. Operator release causes the source and destination parties to be connected.

Operator Transfer

Any time a call is transferred between two operators, the source information shown on the original operator's screen is transferred to the recipient operator when the call is answered. A message that is displayed in the Attendant Status window shows when the transfer has taken place.

Transfer Failures

Transfers to patients that have been discharged will always fail. Transfers also fail if the destination station is busy or set to Do Not Disturb. If a transfer fails, the Call Status window displays an error message, and the search list remains displayed.

Off-Line Mode

If the OAI connection between the attendant console and the CRT is down for any reason, the Directory Assistance functions perform as usual, except that when you press **Enter** to transfer a call, a message displays showing that the system is off-line, and the call is not transferred. The system displays the destination number information, but the call must be placed manually via the actual console. The destination menu is only cleared by selection of the **Clear** command. Once the OAI is reestablished, all functions return to normal.

Key Function Summary

Below is a list of the typical functions of the support keys:

Enter	–	Begins the designated action (e.g., search or transfer).
Up/down arrows	–	Moves the highlight up and down the list for selection purposes; also scrolls the list up and down for display on the screen.
Right/left arrows	–	Select the type of transfer (i.e., direct or screened).
Esc	–	Returns the cursor to the previous position (e.g., from displayed search results back to name or number prompt).
Tab	–	Opens a window display of additional information about the current selection.
Hot Key	–	When pressed while at the “Enter Name or Room” prompt during Directory Assistance, replaces the command line with options for specific directory searches.

Procedure

Although possible destinations of a call may vary (i.e., a patient, physician, location, or test), the following procedure for transferring a call is the same for all destinations:

Action	Result
After an incoming call is answered and source information displays, type **d** to select the DirAsst command. (1)	The "Enter Name or Room:" prompt displays and highlights for data entry. (2)
Type all or part of the name or room number to be called and press **Enter**. To display all names and their room numbers, press **Enter** on the blank entry field.	All of the matching records in the database display. (3)
If desired destination is displayed in list: Using the up- and down-arrow keys, move the highlight to the desired name or number. If more than one screen full of names are found, press the down arrow to scroll the list upwards and the up arrow to scroll the list downwards. Press **Enter** to begin transfer of the call to the chosen destination. Expand Current Selection: Press the **Tab** key to display any additional information available about the current selection in a window that is positioned over the list. (Press the **Enter**, up or down arrows, or **Esc** key to exit the expansion window.)	The transfer begins, according to the type of transfer shown in the Trnfr Window: • **Direct** – the attendant console and screen are automatically released from the call and cleared of all information concerning it. • **Screened** – the call must be manually released, joined, or cancelled. If the call is cancelled or joined, the source information stays on the screen until a new source caller displays or you select the **Clear** command.
If desired destination is not displayed in list: Begin entering data to append to the existing pattern, or press **Ctrl w** to erase the existing entry. Type a new search pattern and press **Enter**. Use the up- and down-arrow keys as described above to select the destination, and press **Enter** to transfer the call.	All of the matching records in the database display.

Call Park

Use the **Park** command to place a source call on an announcement trunk or a monitored number for paging purposes. Activating the **Park** command from the Operator Screen displays the Call Parking window. Remember, the Source area of the screen contains information about the caller.

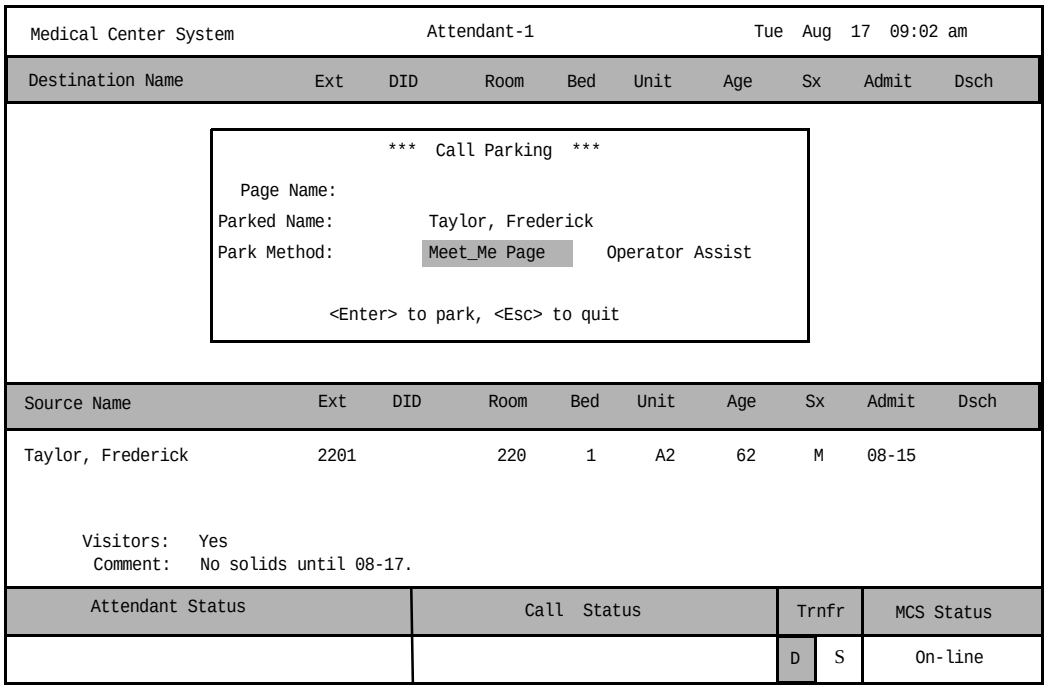

Figure 4-8 Call Park Function

General Process

To park an incoming call select the **Park** command, enter the name of the party to be paged, and press **Enter**. The cursor moves to the *Parked Name* field and can be changed if required. If the field does not need to be changed, press **Enter**. The cursor moves to the *Park Method* field and the configured default park method is highlighted. Press the **Space Bar** to change the park method, or press Enter to select the default method. The attendant is released to either page the called party or receive the next incoming call. The name of the party being paged is entered as the call identifier. If the Directory Assistance window is open, press **Esc** to return to the command line and then select the **Park** command.

The *Meet_Me Page* park method displays a station number that the Paged party must dial to be connected with the party being parked. This method removes the attendant from the park connection process. The *Operator Assist* method requires the Paged party to call the attendant. With this method, the attendant must find and connect the paged and parked parties manually.

Park Recall

If the Park Recall feature is activated during MCS installation, the attendant who originally parked a call is notified when a parked call times out. MCS automatically transfers the parked call from the monitored number or announcement trunk back to the original attendant, and beeps the CRT once. The message "Parked Call Time-out [#]" flashes in the Attendant Status window until the call is either answered or abandoned. When the call is answered, the Call Window displays a message showing that it is a recall.

If another parked call for the same attendant times out during this process, another beep is sounded and the number in the brackets of the message increases by one. The calls are returned to the attendant and are answered in a first-come, first-serve order. The message remains on display until all timed-out parked calls have either abandoned or been answered. Any other messages that must be displayed in the Attendant Status window replace the time-out message temporarily, but the time-out message returns in blinking display when the other messages clear. If the original attendant is no longer on-line, the next on-line attendant is notified of the timed-out parked call.

Cancel and Exit

Pressing the **Esc** key at any time cancels the call park function and returns control to the display from which the Call Parking window was opened. However, escaping the Call Parking window, however, does not release the source caller. The release must be done from the attendant console.

Procedure

Action	Result
After an incoming call is answered and source information displays, type **p** to select the Park command.	The Call Parking window displays.
Type the name to be paged and press **Enter**. **Note:** *Use the Up/Down arrows to move as necessary between the two fields in the Call Parking window.*	**If the call is from an internal extension:** The source caller is parked on an announcement trunk, information about the parked call is placed in the database, and the operator screen is released and cleared. **If the call is from an external number:** The cursor is placed in the *Parked Name* field for data entry. A new entry can be made to the field, any name already displayed can remain, or the field can be left blank. Press **Enter** to accept the field as displayed, park the source caller, and clear the screen.
Select a park method, either Meet_Me Page or Operator Assist.	The *Meet_Me Page* park method displays a station number that the Paged party must dial to be connected with the parked party. With the *Operator Assist* method, the Paged party must call the attendant, and the attendant connects the parties manually.

Parked Call Retrieval

Use the **Join/Rtrv** command to communicate with a previously parked caller. Selection of the **Join/Rtrv** command from the Operator Screen displays Park Retrieval information in the destination area and information about the station used by the paged caller in the Source area.

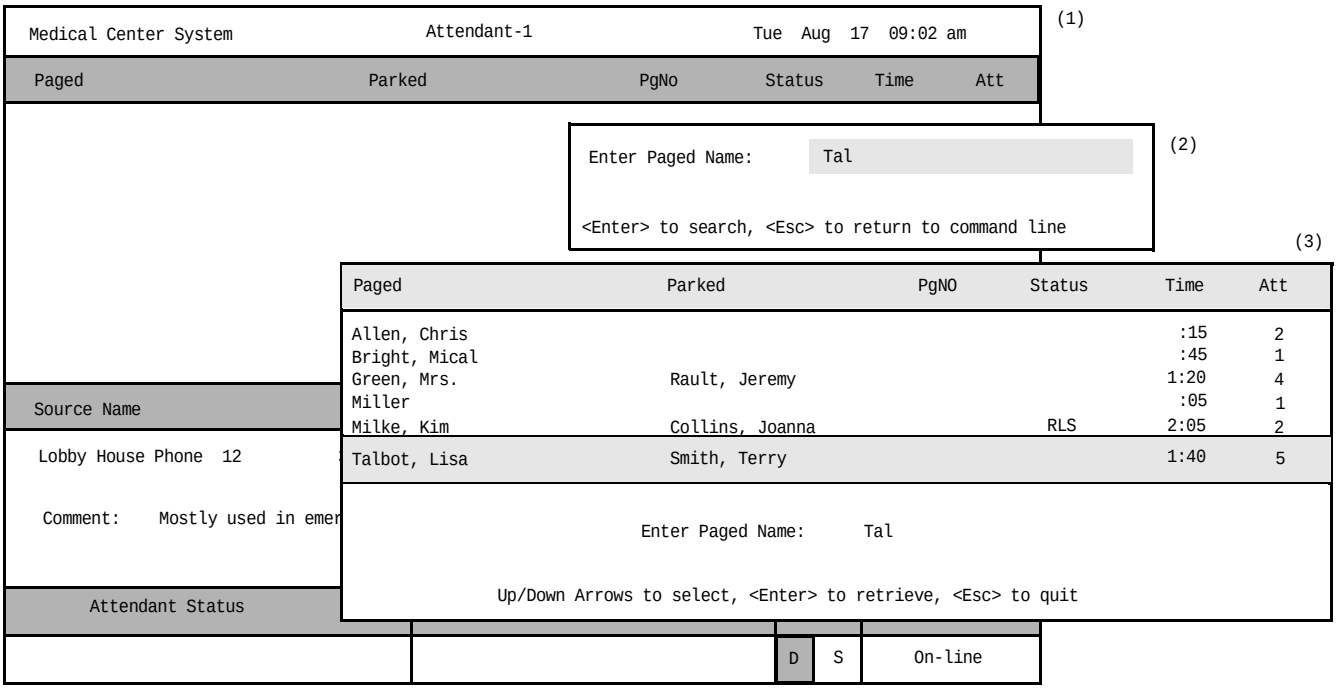

Figure 4-9 Parked Call Retrieval

General Process

To retrieve a parked call, select the **Join/Rtrv** command and enter the name of the paged party at the displayed prompt. MCS searches among the parked calls for the paged party and displays an alphabetical listing of matches. (Press **Enter** on a blank prompt field to display the entire list of parked calls.) Select the name from among those displayed in alphabetical order to begin the transfer.

Retrieve from Idle Screen

The procedure for retrieving a parked call from an idle screen (no incoming call) is the same as from a screen displaying source caller information on an incoming call. However, after the operator presses **Enter**, the caller is routed to either the attendant requesting the park retrieve or to the priority key, depending upon how MCS was configured during installation. The attendant then answers the call.

Park Call Abandon

If a call is abandoned while it is parked, it still appears in the list of parked calls for a preset amount of time. When the Park Retrieval function is activated, the display of any call that has abandoned includes a time notation in the *Time* field that shows when the party abandoned the call, and the *Status* field displays *RLS*. MCS automatically removes the call listing from the display after a time-out. As long as the list is on display, the deleted call remains on the list. When the list is exited and displayed again, the call no longer appears on the list.

With *Meet_Me Page* park method, the paged party will be connected with the operator if the parked party abandons before being connected with the paged party.

Cancel and Exit

Press the **Esc** key at any time to cancel the call park retrieval function and return control to the display from which the retrieval was begun. If the operator exits the Call Park Retrieval window using the **Esc** key, the paged caller is not released. The release must be done from the attendant console.

Procedure

Action	Result
After an incoming call is answered and source information displays, type **j** to select the Join/Rtrv command. (1)	The “Enter Paged Name:” prompt displays and highlights for data entry. (2)
Type part or all of the name of the paged party and press **Enter**. To display all names and their room numbers, press **Enter** when the blank entry field is highlighted.	All of the matching extensions in the database display. (3)
Using the up- and down-arrow keys, move the highlight to the desired name. If more than one screen full of names are found, press the down- arrow key to scroll the list upwards and the up- arrow key to scroll the list downwards. Press **Enter** to begin transferring the call.	The join is begun according to the type of transfer shown in the Trnfr Window. • If **Direct,** the attendant console and screen are automatically released from the call and cleared of all information about it. • If **Screened**, the parked and paged parties are connected only when the call is manually released via the attendant console.

Beeper

Use the **Beeper** command to place a call to a specified beeper number and to display codes that can be manually entered once a connection is established with the beeper holder.

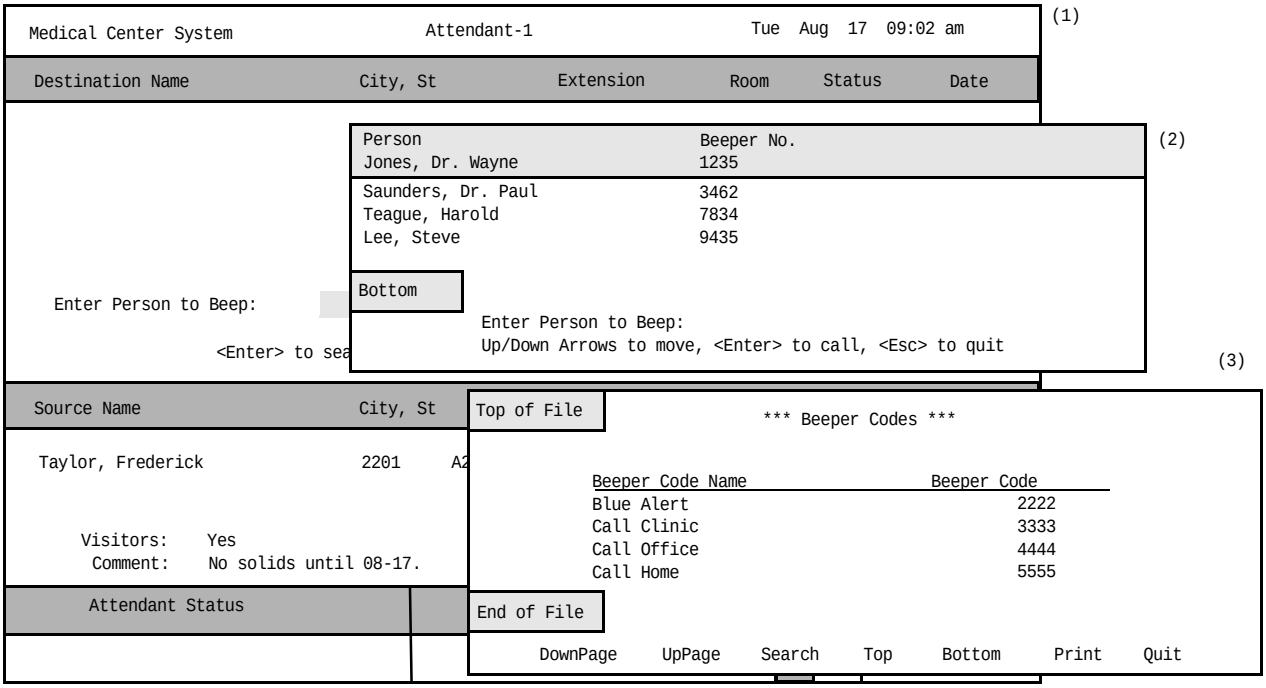

Figure 4-10 Beeper Function

General Process

When you select the **Beeper** command, a prompt displays for the name of the person to be beeped. When you type all or part of the name at the prompt, a list of names displays with the beeper number associated to each name. Use the arrow keys to position the highlight on the desired beeper and press **Enter** to attempt the call. If the beeper call is successful, a list of codes representing various call types displays on the screen. Type the code that describes the purpose of the beep and press **Enter**. Press **Esc** to exit the screen.

Procedure

Action	Result
Type **b** to select the Beeper command.	The "Enter Person to Beep:" prompt displays and highlights for data entry. (1)
Type part or all of the name of the person to be beeped and press **Enter**. To display all names and associated room numbers, press **Enter** when the blank entry field highlights.	All of the matching extensions in the database display. (2)
Using the up- and down-arrow keys, move the highlight to the desired name. Then, manually call the selected beeper number and press **Enter**.	The beeper code list displays, containing codes and their definitions. (3)
Use the **DownPage** command to move forward one page, the **UpPage** command to move back one page, the **Top** command to move to the beginning of the display, and the **Bottom** command to move to the end of the display. Search the Display: Type **s** to select the Search command and press **Enter**. Then type the desired pattern and again press **Enter**. Print the Display: Type **p** to select the Print command. To print the entire file of codes, type **f** and press **Enter**. To print only the current screen display, type **s** and press **Enter**. Press **Esc** to cancel the print request and return to the previous command line.	All occurrences of the pattern shown on that page highlight in the display. The printing is performed and the display command line returns.
To exit the Beeper Code list, type **q** (quit).	The Operator screen displays.

Redial

Use the **Redial** command to place a call to the last caller received by the attendant.

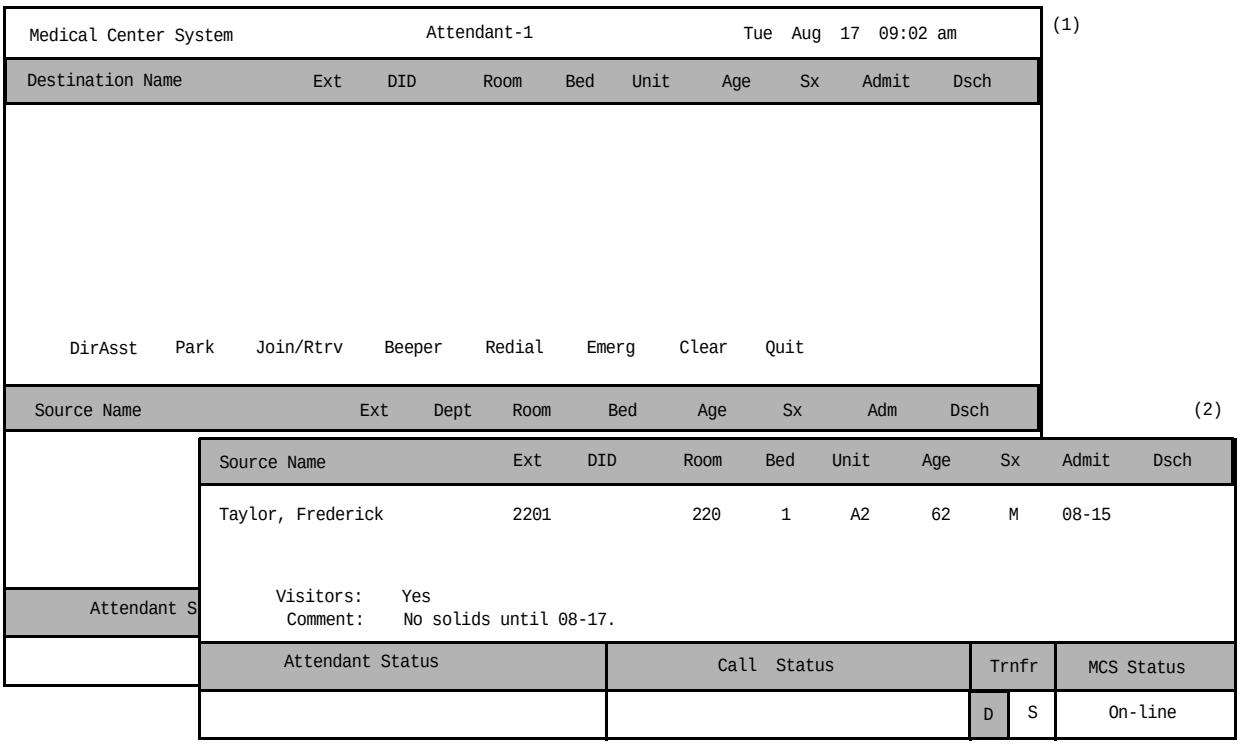

Figure 4-11 Redial Function

General Process

An operator may activate the Redial function any time the station is idle (not connected to a caller). The MCS maintains a record of the last incoming call for this purpose. If the called extension is busy or the attendant console is connected with another party when this function is selected, the operation fails, and an error message displays.

Procedure

Action	Result
Type **e** to select the Redial command. (1)	Connection is made to the last caller received by the attendant. If connection is successful, information about that caller is displayed in the Source Name area. (2)
Refer to the instructions corresponding to the service that is requested by the caller.	

Emergency

Use the **Emerg** command to contact either a “specialist” or the supervisor while connected to a source caller.

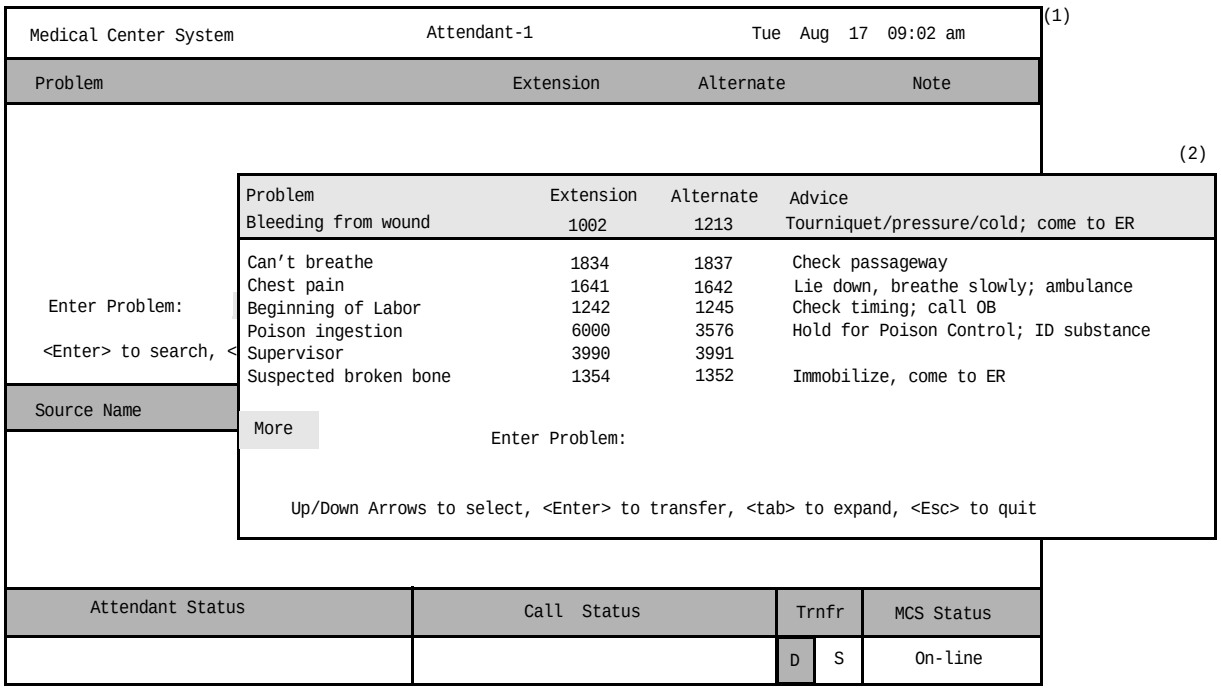

Figure 4-12 Emergency Function

General Process

You can activate the Emergency function any time during interaction with a source caller. When activated, the Emergency function displays a prompt for a brief name or description of the presenting problem. The matches from a directory of emergencies display when you enter a name or description. From this displayed directory, select either the problem shown and the extension(s) associated with it or the supervisor entry. The results of these selections are described below:

Problem: MCS attempts a conference call to the extension shown for the selected problem. If the extension is busy, the alternate extension is called. A three-way conference call is automatically established when the specialist answers the call.

Supervisor: An alert message (e.g., Att3 Supervisor Alert) is broadcast in the Attendant Status window at all active stations, and the Supervisor D^{term} rings. Silent monitoring of the call begins when the supervisor answers, and the attendant is notified that the supervisor is listening to the call. At the same time, the supervisor’s CRT displays the same source and destination information currently displayed on the alerting attendant’s CRT.

Supervisor Equipment

The station from which the supervisor monitors calls must be equipped with a D^{term} V. The D^{term} can be configured to ring automatically whether or not the supervisor is logged in. When the D^{term} is configured to ring automatically, conversation monitoring begins as soon as the phone is answered.

Supervisor Capability

If the supervisor is already connected to a call when monitoring is enabled, the source information on the alerting attendant console is not displayed until the supervisor releases the call. The MCS can also be set up to have all monitored calls connected to a dictation trunk that begins recording at the same time that the call monitoring begins.

Expanded Display

Press the tab key while a record in the displayed list is highlighted. This will display any more information available about this selection in a window positioned over the list. Use the arrow keys to move within the window. Use the Enter and Esc keys to exit the window.

Procedure

Action	Result
Type **m** to select the Emerg command.	The "Enter Problem:" prompt displays and highlights for data entry. (1)
Type the problem and press **Enter**. To display all names and associated room numbers, press **Enter** when the cursor is on the blank entry field.	All of the matching problems in the database display. (2)
For an emergency problem: Using the up- and down-arrow keys, move the highlight to the appropriate problem and press **Enter**.	A call is begun to the extension tied to the problem. (OAI key lamps blink and a chime rings.) When the call is answered, the specialist joins the emergency call, making it a three-way conference call.

Action	Result
For a supervisor alert: Using the up- and down-arrow keys, move the highlight to the supervisor record and press **Enter**. The supervisor can stop listening in on (and recording) the conversation at any time by hanging up.	The Attendant Status window of all stations displays a supervisor alert notation. If set up to do so, the supervisor's D^{term} automatically rings. As soon as the supervisor answers the ringing D^{term}: 1) The supervisor connects to the initiating operator's call in silent monitoring mode. 2) The message "Supervisor Monitoring" displays in the initiating operator's Attendant Status window. 3) The supervisor's D^{term} LCD displays the message "Monitoring Att ##". 4) The source and destination information displays on both the attendant and supervisor CRT.
Release the call manually. If no other incoming call displays, use the **Clear** command to remove the previous call information from the screen.	

Chapter 5 JAVA OPERATOR FUNCTIONS

Login

1. From the workstation desktop, double-click the **JAVA Client** icon to start the JAVA MCS application. The Password Entry screen (Figure 5-1) will be displayed.

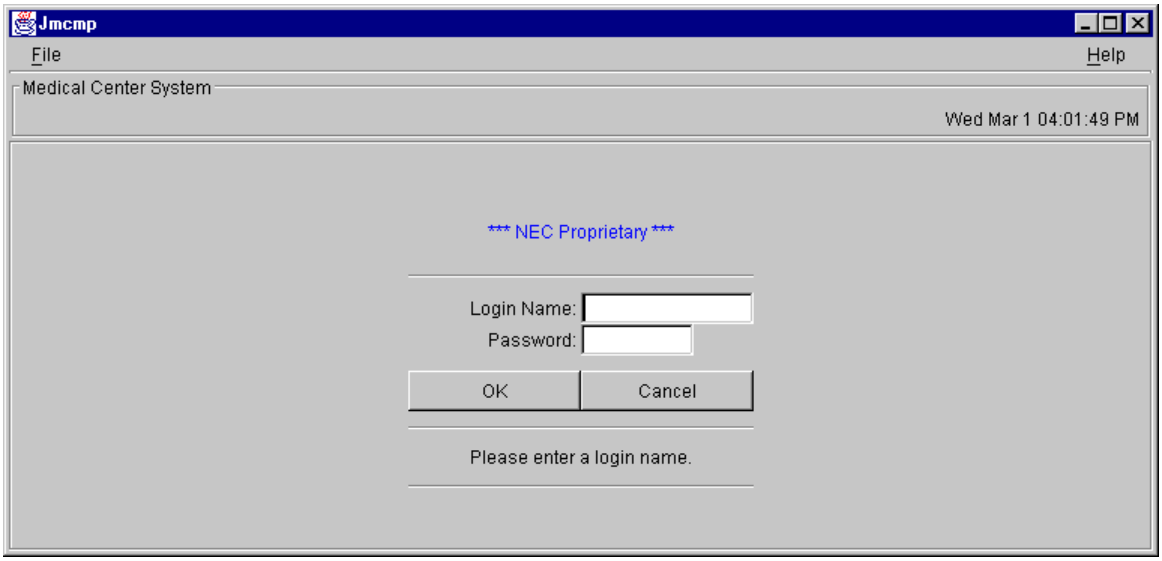

Figure 5-1 Password Entry Screen

2. Enter your assigned operator or supervisor login name in the **Login Name** field. (If you do not have an assigned name, see your system administrator.)
3. Enter your password in the **Password** field, and select the OK button. (If you do not have a password, see your system administrator.) The JAVA MCS main screen (Figure 5-2) will be displayed.

Screen Format

The JAVA MCS main screen is illustrated below (Figure 5-2). The major screen components are identified in the figure and described below.

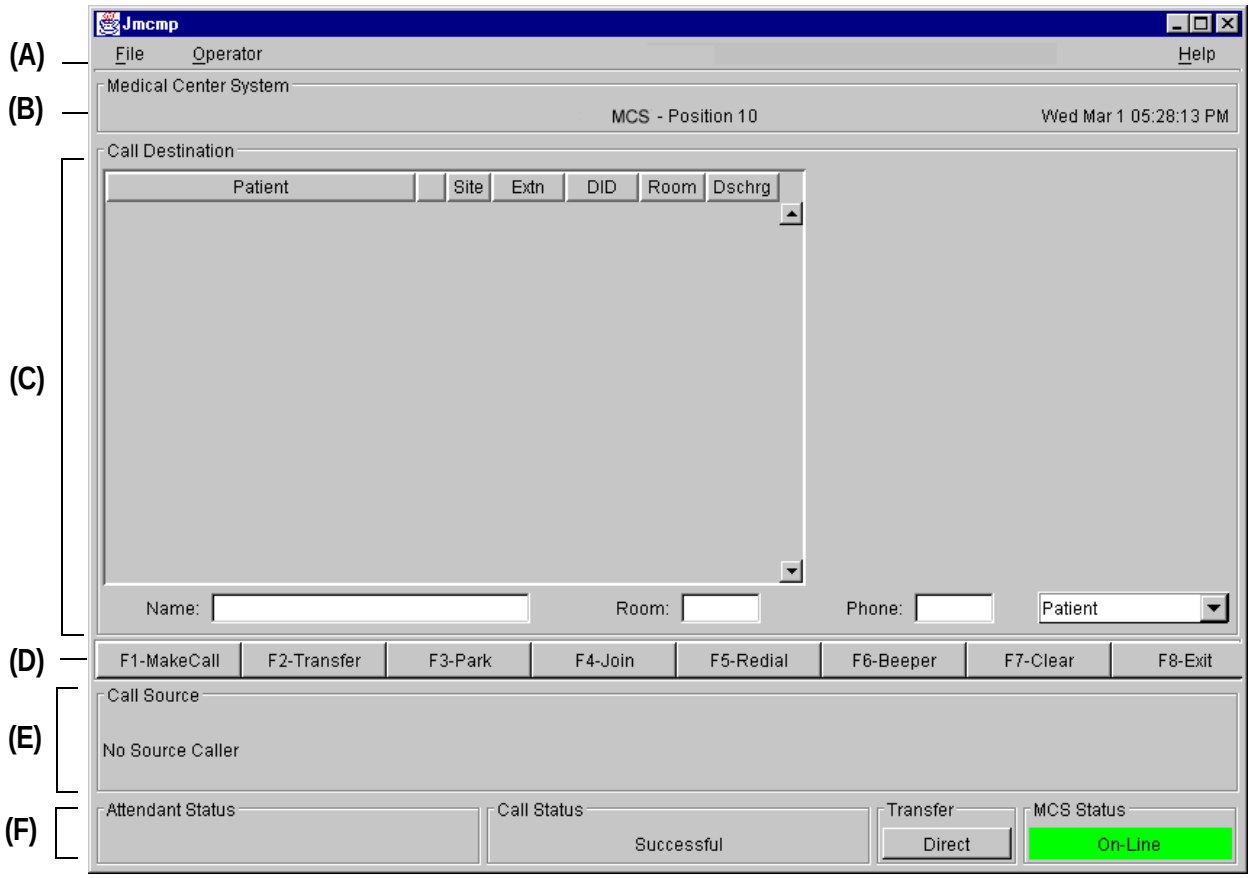

Figure 5-2 JAVA MCS Main Screen

Screen Components

(A) **Menu Bar** – Provides access to operator, directory database and administrator functions.

(B) **Header** – Displays the name of the application (Medical Center System), identification of the workstation position, and the current system time and date.

(C) **Call Destination Panel** – Directory list and detailed information of selected destination caller.

(D) **Tool Bar/Command Buttons** – Command buttons (also showing keyboard Hot Key) to select the operator functions.

(E) **Call Source Information Panel** – This panel displays source caller information including status of the current call and any transfer information.

(F) **Status Panel** - Displays the Attendant status, current call status, type of transfer and current MCS system status.

These panels and associated functions are further described in the following sections of this manual.

Selecting Operator Functions

After user login, the JAVA MCS Operator screen is displayed (Figure 5-2). Access to Administration functions are dependant on the privileges of the user. The Operator screen is divided into Status, Call Source and Call Destination areas. These are described in the following sections.

Status Area

The Operator screen Status Area displays information about the attendant, current call processing and the MCS system. A detail of the Operator screen Status Area is shown below (Figure 5-3):

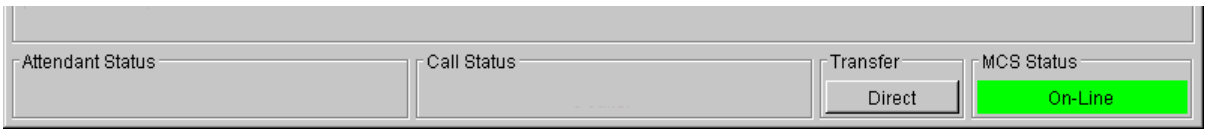

Figure 5-3 Operator Screen - Status Area

Attendant Status Window

This window on the bottom left corner of the screen is reserved for real-time messages that relate directly to attendant-to-attendant communications. For instance, when a call is transferred between attendants, this area displays the message “Call transfer from Att-3”. This area also displays attendant supervisor alerts and error conditions that require special attention. Messages in this area clarify any events that affect the attendant console and communications among the attendants.

Call Status Window

The Call Status Window displays messages about all current call events. For example, an incoming call from an extension with more than one patient in the room generates a message here. The message “Extension Busy” shows an attempt to perform a Directory Assistance transfer to an off-hook extension.

Transfer Window

This window at the bottom right of the screen allows operators to toggle between the following types of transfers:

Screened (S): Places the source caller on hold with music while the operator call is being placed to the destination number. The operator hears a ring-back tone (RBT) while the destination station phone is ringing. The operator is connected to the destination station when it is answered. Thereafter the operator may use the SRC, DST, TALK, CNCL, or Release keys on the console to manipulate the call.

Direct (D): Causes the source caller to hear a RBT while the destination station phone is ringing. The operator is automatically disconnected from both parties, and the source caller is directly connected to the destination party without operator screening of the transfer.

The default transfer type is configurable through the **Configuration Management** option on the Supervisor Main Menu. The type of transfer currently in effect is highlighted.

MCS Status Window

This window in the bottom right corner of the screen displays the operational status of the MCS system. Whenever there is a change in status, the new status notation replaces the old, and a beep is sounded on the CRT. Any of the following notations can be displayed:

On-line: The OAI that enables communication between the attendant console and the UAP is initialized; the MCS and NEAX2400 are in full communication, with all screen functions available; and call events at this station are now being monitored. This is the normal status when the user enters the Operator Functions option.

Dir off: The Directory Assistance, beeper, and emergency functions are not operational, but Park/Retrieve is available.

Park off: The Park/Retrieve functions are not operational, but Directory Assistance and the other command functions are available.

Off-line: The OAI is not initialized, so the attendant console is operating independently of the PBX. In this status, the operator can perform directory searches and message operations but not automated call processing. Therefore, all call placement functions must take place manually through the attendant console. When OAI functions are restored, the *Off-line* notation is replaced with a message showing a change in status, and the CRT beeps once. Operations can then be carried out normally with the degree of automated call placement shown by the new status.

Source Area

When the attendant console is on-line, MCS monitors all incoming calls. As each incoming call is answered, MCS automatically performs a database search for the dialed number. If the number is found, any information associated with it in the database displays in the Source area (Figure 5-4) of the screen.

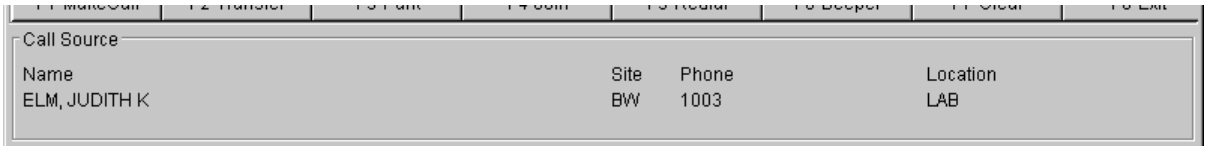

Figure 5-4 Operator Screen - Call Source Area

When more than one person is assigned to an extension, a message showing the number of additional people is displayed in the Call Status window. Pressing the down-arrow key displays the next person in the list and the up-arrow key displays the previous person. The kind of information that is displayed depends upon the source of the call.

Destination Area

The Destination area (Figure 5-5) of the Operator screen changes as necessary to display information and to prompt for entry of the data that is necessary to complete a call transaction. The command line contains the actions that can be taken.

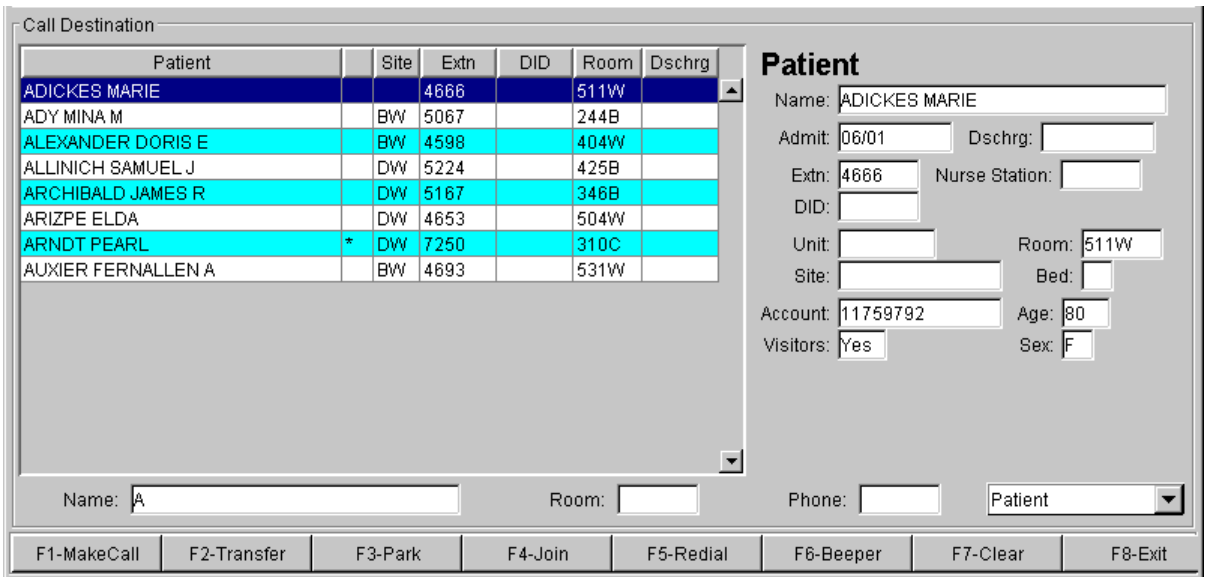

Figure 5-5 Operator Screen - Call Destination Area

The remainder of this chapter provides descriptions and step-by-step instructions on how to use each of these actions. Each action is discussed in a separate section, as noted below:

Directory Assistance – Search the database for destination information and then transfer internal, external, and attendant calls to the selected destinations. (See page 72.)

Make Call – Attempt to place a call from the attendant console to the selected directory entry.

Transfer – After receiving a call at the attendant console, the attendant can transfer the call to a selected destination directory entry.

Call Park – Place a call on an announcement trunk or a monitored number for paging purposes. (See page 77.)

Parked Call Retrieval – Communicate with a previously parked call. (See page 80.)

Beeper – Contact a beeper-holder with a coded message. (See page 82.)

Redial – Use this command during Idle status to automatically dial the station that most recently called the operator. (See page 83.)

Clear – This command removes all entries to the Destination and Source areas.

Note: *This command is not discussed further in this chapter.*

Directory Assistance

The directory assistance options (Figure 5-6) allow the operator to locate a specific destination entry in a database directory.

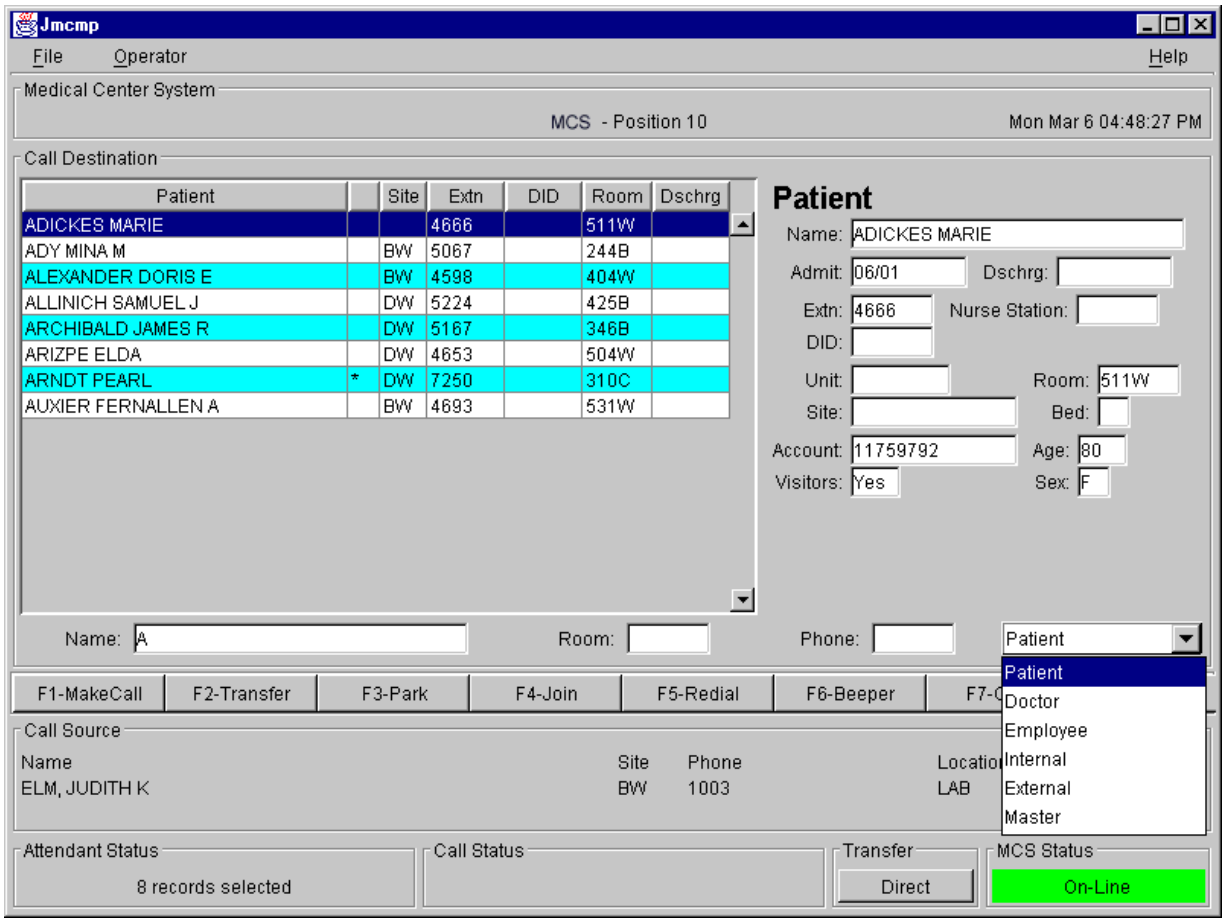

Figure 5-6 Operator Screen - Directory Assistance

General Process

The operator can select a specific directory type (Patient, Doctor, Employee, Internal, External and Master) from a pull-down menu (see Figure 5-6). The Call Destination area display will change depending on the type of directory selected.

The selected directory can be further searched by moving the cursor to the **Name**, **Room** or **Phone** fields where specific information can be entered. All or any part of the name or number can be entered. Following a search, use the UP and DOWN arrow keys to select a specific directory entry.

When a specific entry is selected, the operator can then make a call or transfer a source call to the selected destination entry. With a pending source call, pressing the **ENTER** key on a selected destination entry will transfer the call.

Directory Information

Directory Assistance information displayed in the Destination area is dependent on the type of directory selected. A listing for a selected directory or directory search is displayed in the left of the Destination area (see Figure 5-6). When an entry is selected, further information detail for the entry is shown on the right of the Destination area. The various information fields in the directory listings are defined below:

Patient Directory

- Patient – The Patient's name.
- Site – Abbreviation for a facility site or location of the patient room.
- Extn – The phone extension number of the patient room.

Note: *The **Extn** field is empty in the display when a patient has been discharged. No extension is displayed for patients in rooms without phones. An asterisk appears next to an extension of a patient who has not contracted for phone service or is restricted. Patients whose presence is confidential are displayed in a different foreground color, and may also display a 'C' in the column after the name. (Also see "Special Destinations" on page 74.)*

- DID – The Direct Inward Dialed number of the patient.
- Room – The room number assigned to the patient.
- Dschrg – Date that the patient was discharged, in the format *mm/dd*.

Doctor Directory

- Physician – The physician's name.
- Site – Abbreviation for a facility site or location of the doctor.
- Office – The phone number of the doctor's office.

Employee Directory

- Employee – The employee's name.
- Site – Abbreviation for a facility site or location of the employee.
- Extn – The phone extension number assigned to the employee.

Internal Directory

- Internal – The name of an Internal department, group, function, service, or other person within the facility.
- Site – Abbreviation for a facility site or location of the Internal entry.
- Extn – The phone extension number of the Internal entry.

External Directory

- External – The name of an External (outside the medical facility) entry. (For example: These could be any outside companies, service providers, equipment service, other medical facilities, outside emergency numbers, etc.)
- Phone – The phone number of the External entry.

Master Directory

The Master directory lists all database directory entries.

- Name – The name for the specific entry.
- Phone – The phone or extension number for the entry.
- Site – Abbreviation for a facility site or location of the entry.
- Type – The type of directory entry (Patient, Doctor, Employee, Internal or External.

Special Destinations

Some destination names that are displayed from the database appear differently from the others in the list. These names are of patients to whom calls are generally not to be transferred. These "special" destinations are described below:

- Extension preceded by an *: A patient who has either not paid for phone service or wishes to have no phone calls but is in a room that contains a phone. The expanded version of this record shows whether the patient wants to keep the number confidential or did not contract for phone service.
- Extension field blank: If a patient has been assigned a DID, the extension number does not display. If no extension or DID is displayed, the room cannot receive calls.
- Record is highlighted: If a patient has expired, an *'X'* will be displayed in the column to the right of the name column. A Confidential patient will have a *'C'* displayed in this column.

Expanded Display

The Expanded display is always shown in the right Destination area when a record entry is selected.

Type of Transfer

Use the left- and right-arrow keys to select between direct or screened transfer. In a *direct* transfer, press **Enter** to transfer the source caller to the extension that is currently selected. This will release the operator and clear the Operator screen. In a *screened* transfer, place the source caller on hold, and connect to the destination. The operator can stay on the line as long as desired, but must release, cancel, or join the call manually via the attendant console. Operator release causes the source and destination parties to be connected.

Operator Transfer

Any time a call is transferred between two operators, the source information shown on the original operator's screen is transferred to the recipient operator when the call is answered. A message that is displayed in the Attendant Status window shows when the transfer has taken place.

Transfer Failures

Transfers to patients that have been discharged will always fail. Transfers also fail if the destination station is busy or set to Do Not Disturb. If a transfer fails, the Call Status window displays an error message, and the search list remains displayed.

Off-Line Mode

If the OAI connection between the attendant console and the PBX is down for any reason, the Directory Assistance functions perform as usual, except that when you press **Enter** to transfer a call, a message displays showing that the system is off-line, and the call is not transferred. The system displays the destination number information, but the call must be placed manually via the actual console. The destination menu is only cleared by selection of the **Clear** command. Once the OAI is reestablished, all functions return to normal.

Key Function Summary

Below is a list of the typical functions of the support keys:

Enter – Begins the designated action (e.g., search or transfer).

Up/down arrows – Moves the highlight up and down the list for selection purposes; also scrolls the list up and down for display **on the screen.**

Right/left arrows – Select the type of transfer (i.e., direct or screened).

Esc – Returns the cursor to the previous position (e.g., from displayed search results back to name or number prompt).

Tab – Moves cursor to the next field.

F1-F8 screen buttons – Call processing command buttons. (These functions are described in the following sections.)

Make a Call

Originate a call from this attendant position. Follow the steps below to Make a Call.

1. Use the Directory Assistance feature to select a specific destination for the call. Select a specific directory type and then select the specific entry, from the directory listing, for the call destination.
2. Press the **ENTER** key (or select the **F1-Make Call** screen command button) to make a call to the selected destination. View the status of the call in the Call Status area at the bottom of the screen.

Transfer a Call

Transfer an incoming call to a destination number. Follow the steps below to Transfer a call.

1. An incoming source call is answered and any specific source information will be displayed in the screen Call Source area.
2. Use the Directory Assistance feature to select a specific destination for the call. Select a directory type and then select the specific entry for the call destination.
3. Press the **ENTER** key (or select the **F2-Transfer** screen command button) to transfer the call to the selected destination. View the status of the call in the Call Status area at the bottom of the screen.

Transfer Type

Any transfer starts according to the type of transfer shown in the Transfer field area at the bottom of the screen.

- **Direct** - The attendant console and screen are automatically released from the call and cleared of all information concerning the call.
- **Screen** - The call must be manually released, joined or cancelled. If the call is cancelled or joined, the source information will continue to be displayed until a new source call is received or the **F7-Clear** command button is selected.

Select the button in the transfer status area to toggle between these two options as needed.

Park a Call

Use the **Park** command to place a source call on an announcement trunk or a monitored number queue for paging purposes. Follow the steps below to park a call.

1. An incoming source call is answered and any specific source information will be displayed in the screen Call Source area.
2. Select the **F3-Park** screen command button. The Park Caller window (Figure 5-7) will be displayed.

Note: *This Call Park function can be canceled at anytime by pressing the **Esc** key, or selecting the **Cancel** button on the Park Caller window. The source call must still be processed.*

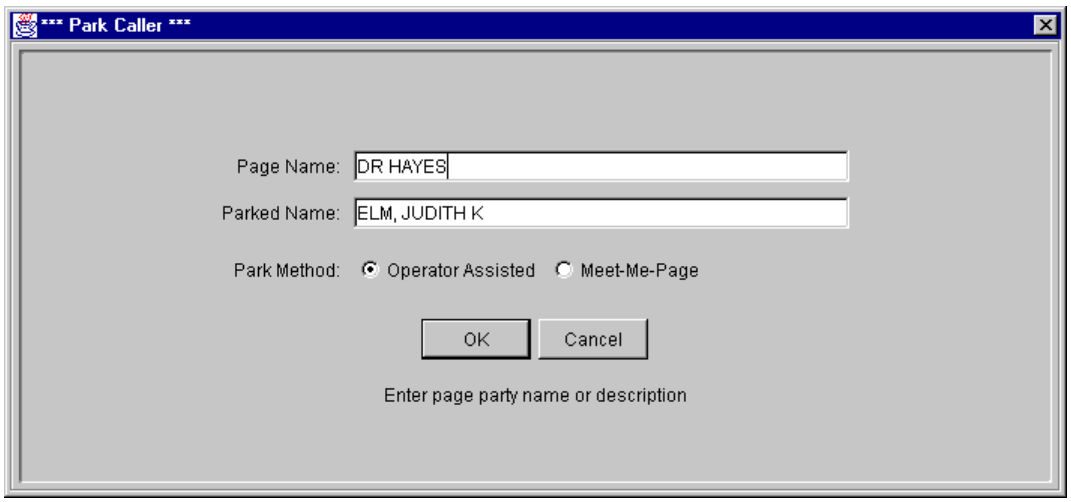

Figure 5-7 Park Caller Window

3. At the Park Caller window, enter the name of the party that will be paged in the *Page Name* field. This page name becomes the call identifier in the database. Press **Enter** to continue.
4. A name may already be displayed in the *Parked Name* field. If the source caller is listed in the database, their name will be displayed here. Press **Enter** to accept the displayed name or change the name as needed and then press **Enter**.

   If no name is displayed, a name can be entered or this field can be left blank. Add a name and press **Enter**, or press **Enter** to continue with no name.

5. The *Park Method* option shows two methods of parking a call. The *Operator Assist* method (default) requires the Paged party to call the attendant. The attendant must find and connect the paged and parked parties manually.

   The *Meet_Me Page* method uses a system station number (Orbit) that the Paged party must dial to be connected directly with the party being parked. This method removes the attendant from the park connection process.

   Press **Enter** to select the default method (*Operator Assist*), or select *Meet_Me Page* and press **Enter**.

6. Select the **OK** button to park the call. The call is parked and information on the call is placed in the database.

   If *Operator Assist* method was used, the attendant can now page the party instructing them to call the operator, etc.

   If the *Meet_Me Page* method was used, the station (Orbit) number assigned for this parked call is displayed in the Attendant Status area. The attendant can now page the party instructing them to call this station (Orbit) number.

Note: *This Orbit number is displayed on the Parked Call Retrieval screen (Figure 5-10). Refer to the later section on Parked Call Retrieval.*

Park Recall

If the Park Recall feature is configured, the attendant who originally parked a call is notified when a parked call times out. MCS automatically transfers the parked call from the monitored number or announcement trunk back to the original attendant, and beeps the attendant once. A message is displayed in the Call Status window indicating the time-out (Figure 5-8).

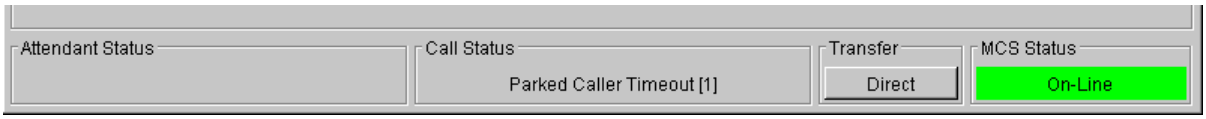

Figure 5-8 Parked Caller Time-out Status

When the call is answered, the Attendant Status window displays a message showing that it is a recall (Figure 5-9).

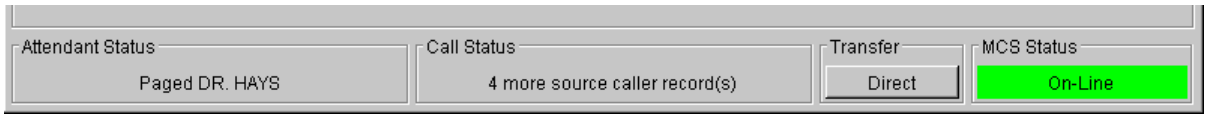

Figure 5-9 Answer a Park Recall Status

If another parked call for the same attendant times out during this process, another beep is sounded and the number in the brackets of the message increases by one. The calls are returned to the attendant and are answered in a first-come, first-serve order. The message remains displayed until all timed-out parked calls are answered or been abandoned. Any other messages displayed in the Call Status window will temporarily replace the time-out message. However, the time-out message returns (blinking) when any other messages clear. If the original attendant is no longer on-line, the next on-line attendant is notified of the timed-out parked call(s).

Retrieve Parked Call

1. To retrieve a previously parked call, select the **F-4 Join** screen command button. The Call Destination area will now show a window of all calls currently parked in the system (Figure 5-10).

Note: *This Call Park Retrieve function can be canceled at anytime by pressing the **Esc** key, or selecting the **F7-Clear** screen command button. The source call must still be processed.*

Note: *If the operator exits the Call Park Retrieval window using the **Esc** key, the paged caller is not released. The release must be done from the attendant console.*

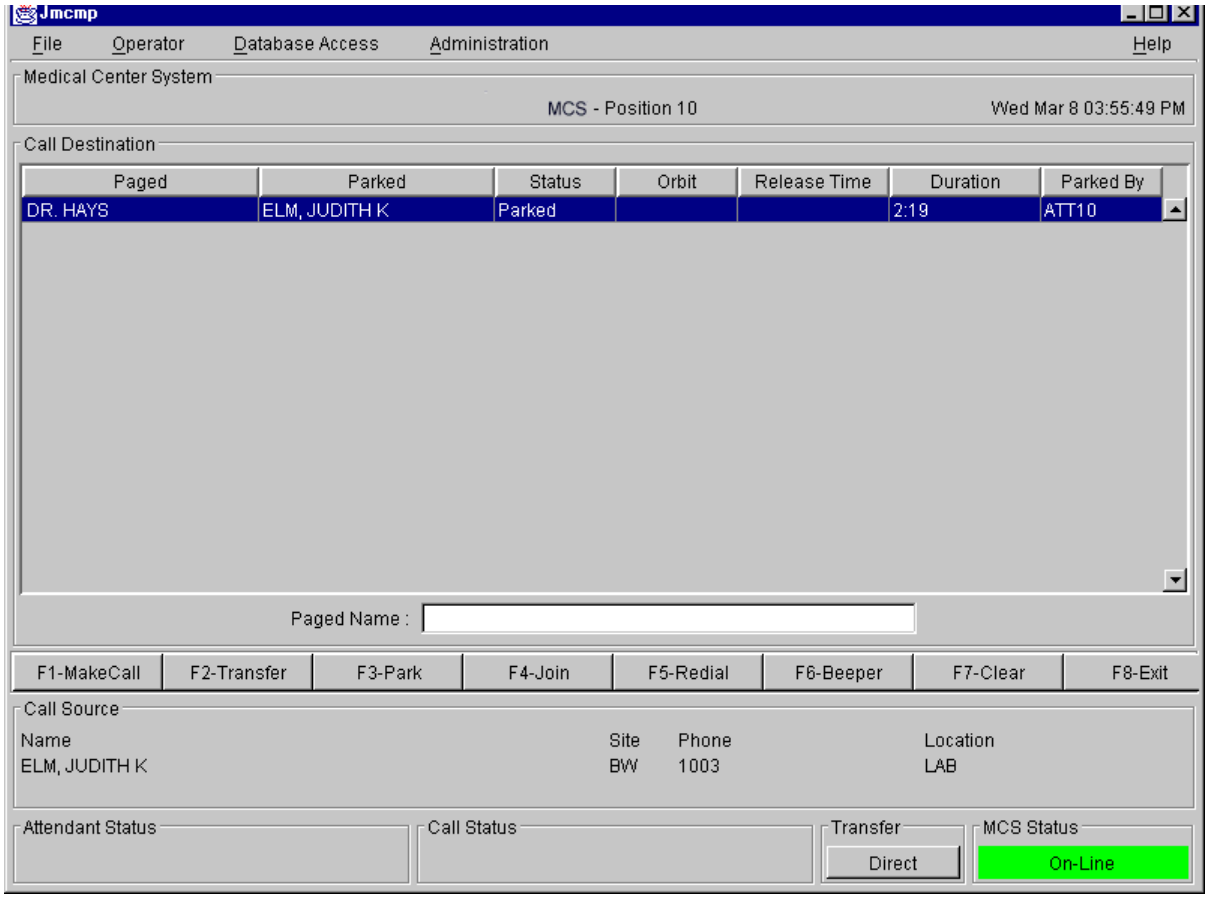

Figure 5-10 Parked Call Retrieval Window

This window displays all Parked Caller information including the *Paged* name, the name of the *Parked* caller and the current *Status* of the parked call. The *Orbit* number is the Meet-Me Page station number assigned for the parked call. The *Release Time* shows the time that the source caller abandoned the call, the *Duration* indicates how long the call has been parked, and the *Parked By* field shows which attendant originally parked the call.

2. From the window, select the specific parked call to retrieve (or enter a name in the *Paged Name* query field at the bottom of the Parked Call window to select the call) and press **Enter**. The parked call will be transferred to the attendant. The parked call status will now show *talking* to the attendant. The attendant can now process the call as needed.

Retrieve from Idle Screen

The procedure for retrieving a parked call from an idle screen (no incoming call) is the same as from a screen displaying source caller information on an incoming call. However, after the operator presses **Enter**, the caller is routed to either the attendant requesting the parked caller retrieve or to the priority key, depending upon how MCS was configured during installation. The attendant then answers the call.

Park Call Abandon

If a call is abandoned while it is parked, it still appears in the list of parked calls for a preset amount of time. The display window of parked calls will show a time notation in the *Release Time* field that shows when the party abandoned the call, and the *Status* field will display **Abandoned**. MCS automatically removes the call listing from the display after a preset time-out. As long as the window is displayed, the deleted call remains on the list. The abandoned call will be cleared when the display is cleared back to the directory.

With the *Meet_Me Page* park method, the paged party will be connected with the operator if the parked party abandons before being connected with the paged party.

Call a Beeper

Use the **Beeper** command to place a call to a specified beeper (pager) number. This function allows alpha-numeric message input for a pager. Follow the steps below to call a beeper.

1. Use the Directory Assistance feature to select a specific destination entry to beep. Select the directory type and then select the specific entry for the person to beep.
2. With a destination selected, select the **F6-Beeper** screen command button.

   If the selected destination has a *Beeper #*, a **Make Call** operation will place a call to the Beeper # (phone #) if the attendant console is idle. If the attendant has received a caller, a **Transfer** operation will be initiated to transfer the caller to the Beeper #. (If the attendant console is off-line, the call must be dialed manually. This manual dial status will be displayed in the Call Status area at the bottom of the screen.)

   If the selected destination does not have a Beeper #, but only has a Beeper ID, the Pager Message window (Figure 5-11) will be displayed.

Note: *This Beeper function can be canceled at anytime by pressing the **Esc** key, or selecting the **Cancel** button on the Pager Message window.*

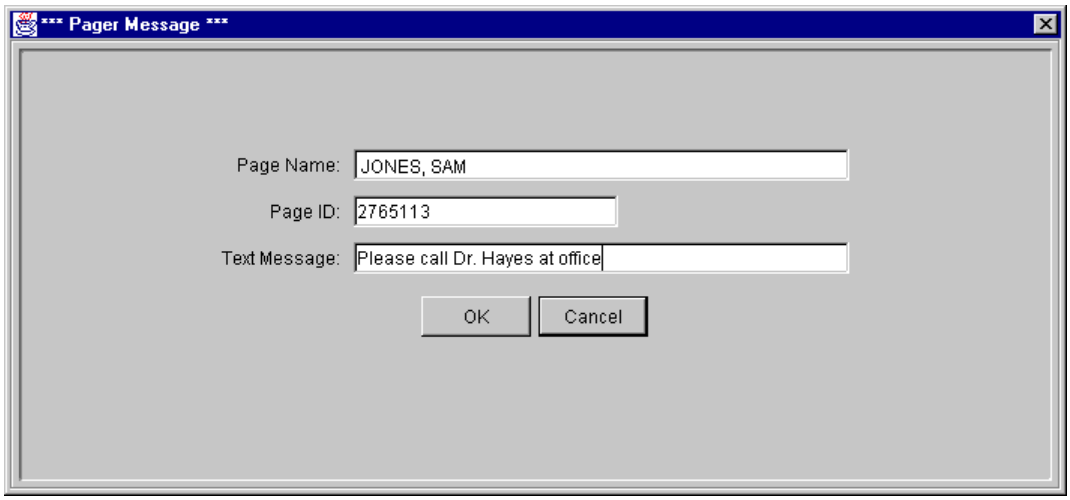

Figure 5-11 Beeper Function Window

3. From the Pager Message window, a text message can be entered in the *Text Message* field. This message will display on a text messaging pager.
4. Select the **OK** button to make the call to the selected beeper/pager.

Redial

Use the **Redial** command to place a call to the last caller received by the attendant. JAVA MCS maintains a record of the last incoming call for this purpose. An attendant can activate the Redial function anytime the attendant station is idle (not connected with a caller). Follow the steps below:

1. Select the **F6-Redial** screen command button. A call will be placed from the attendant to the last call received by this attendant.

   If the called extension is busy or the attendant console is connected with another party when this function is selected, the call operation fails, and an error message will be displayed in the Call Status area.

2. Communicate with the last caller as needed.

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Chapter 6 DATABASE ADMINISTRATION

Introduction

Use the **Database Administration** option on the Main Menu to add, modify, delete, view, and/or print MCS database records.

Note: *Before extensions can be entered to the database records through this option, the extensions must be inserted into MCS through the Main Menu System Administration option. (Refer to Chapter 7 SYSTEM ADMINISTRATION, RCS Descriptions for more details.)*

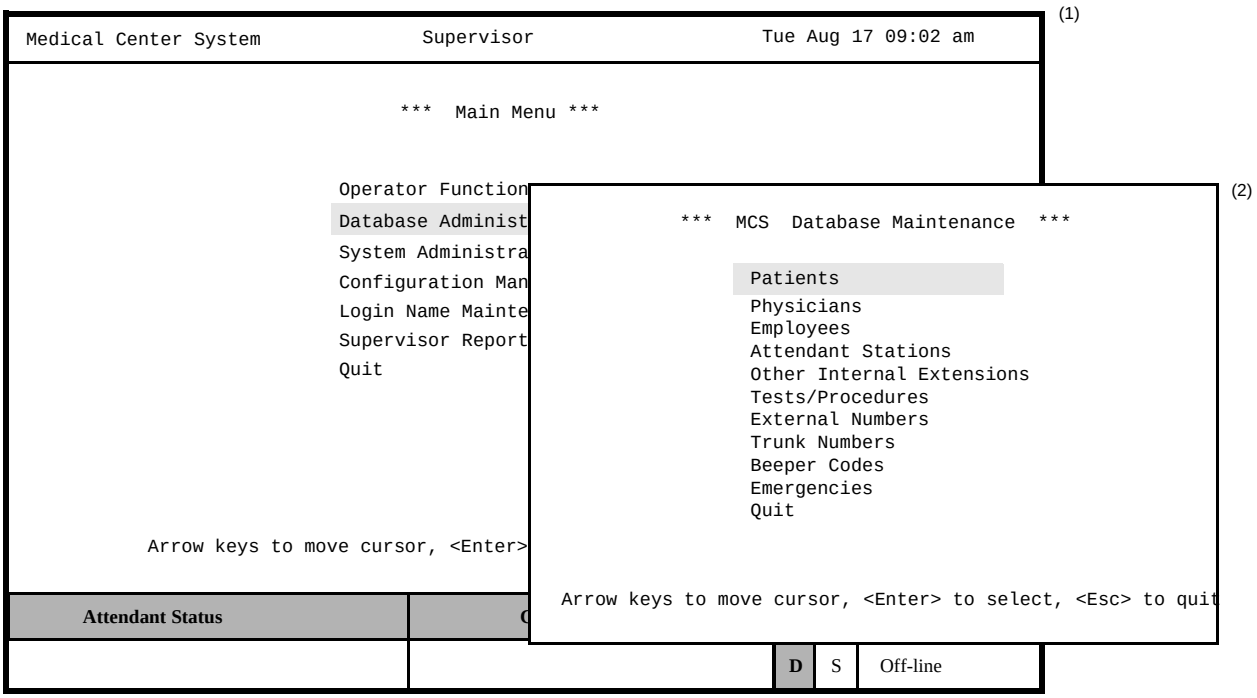

Figure 6-1 Database Administration

Types of Database Records

The MCS Database Maintenance menu reflects the different kinds of records with which MCS provides the variety of data used by the operator during call processing. In response to operator activity, MCS pulls records from the database to display source caller data, results of Directory Assistance searches, and expanded versions of displayed items. To accommodate this data, the database contains different types of records. For instance, the data entered and stored for patients differs from the data entered and stored for physicians or for hospital services.

Procedures

The steps by which data is entered, deleted, changed, viewed, and/or printed are the same regardless of what kind of data is being handled. The fields and expected entries differ, but the procedures are the same. Note slight differences, such as patients are admitted (using the **Admit** command), whereas all other types of records are added (using the **Add** command). This chapter provides steps for handling the data in the database in this section and then describes the different types of records that the database can contain in Database Procedures on page 88.

Extension Assignments

Internal hospital extensions must first be assigned through the **Extension Maintenance** option before patient, physician, employee, and other assignments can be made to them. (See *Chapter 7 SYSTEM ADMINISTRATION, RCS Descriptions* for more information on assigning internal hospital extensions.) Extension Maintenance records identify the internal extensions that have been assigned on the PBX Maintenance Administration Terminal (MAT) by the type of phone (e.g., patient room, nursing station, or attendant console), their location, and, for some, their default restriction class.

Although MCS assignments to the extensions may change (i.e., patients, employees, etc.), changes to these basic Extension Maintenance records should be rare and probably required only by changes that are made at the MAT.

View Command

A **View** command makes it possible to display a selection, or range, of records. A beginning pattern and an ending pattern specify the range. The pattern can be either a partial or full entry of a number or word, according to the type of record selected from the MCS Database Maintenance menu. When you select the **View** command, a pop-up window prompts for the key by which the records are to be retrieved and displayed.

Menu Access

The Supervisor is always authorized to enter this menu option. An Operator can enter it only if access is authorized through the **Configuration Management** option on the Main Menu.

Screen Samples

Figure 4-2 shows several of the database records for which the procedures on the following pages apply:

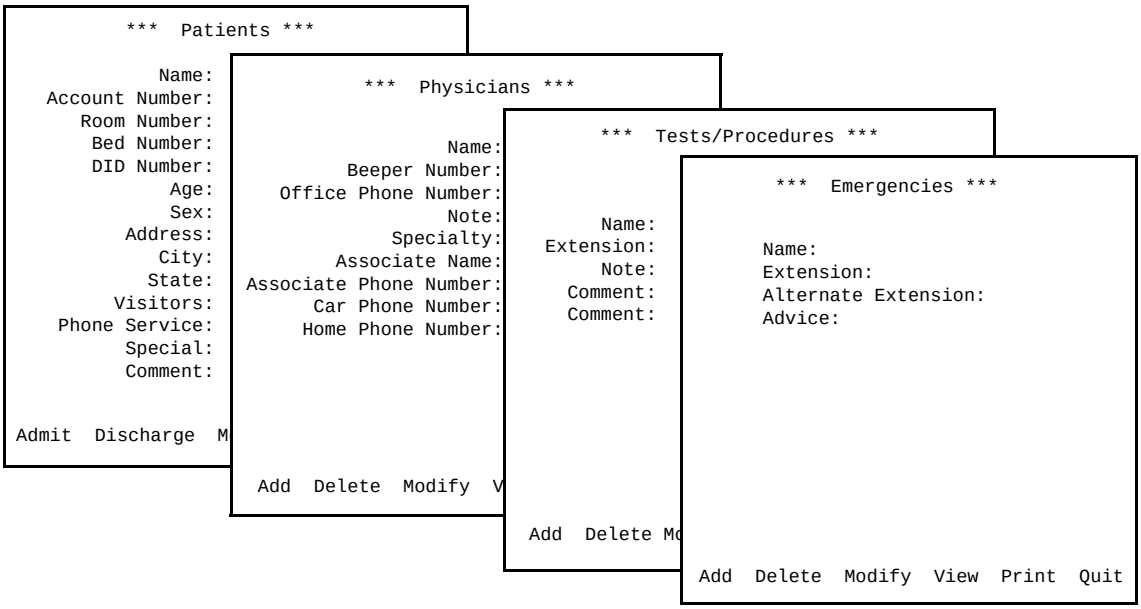

Figure 6-2 Record Field and Command Line Samples

Database Entry and Exit Procedure

Action	Result
On the MCS Main Menu, type **d** to select the Database Administration option.	The MCS Database Maintenance menu displays the types of database records.
To select the desired type of database record, type the highlighted letter. **Note:** *In most cases, the highlighted letter is the first letter of the word. When the word begins with a letter that has been used before, the second or even third letter may be highlighted.*	The fields of the selected record type and a new command line display. (Figure 6-2)
Refer to the following pages for descriptions of each function provided by the new command line.	
To exit the MCS Database Maintenance menu, type **q** (quit).	The MCS Main Menu displays.

Database Procedures

Add a Record / Admit a Patient

Use this procedure to add a new record of the type selected or to admit a new patient to the database.

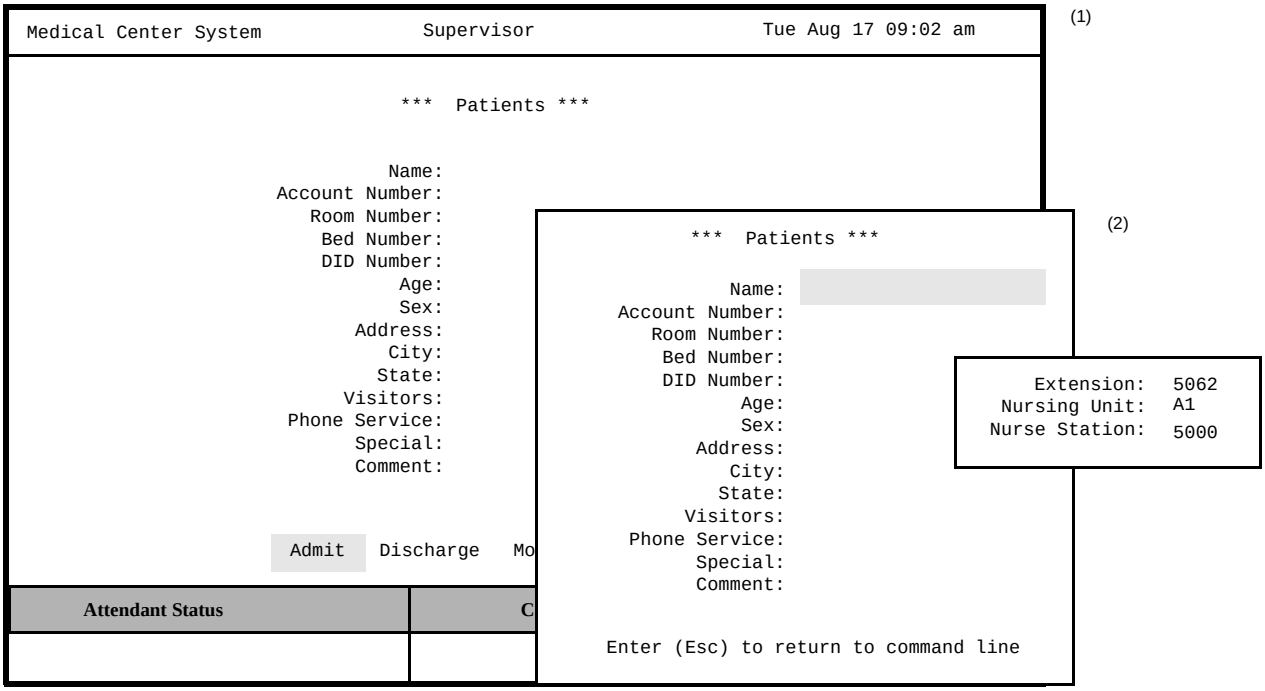

Figure 6-3 Add a Record/Admit a Patient

Effect of Data Entry

Patient admissions occur immediately and are stamped with the current date. If a patient is admitted with a DID number, this number is turned on as soon as the data entered to these screens is saved.

Pop-up Windows

On several record types, after identification of the room/bed and/or extension number, a pop-up window displays data that has previously been assigned to the extension number through the Extension Maintenance option on the MCS System Administration menu. This data is for display only; it cannot be changed through any action in these database screens.

Empty Fields

Not all of the fields in a record require an entry. However, the record is considered complete only when you press **Enter** in every field, regardless of whether or not you have made an entry in that field. Pressing the **Esc** key before completing a full record erases any data entered up to that point.

Manual Entry

Patient data is usually obtained when the patient is admitted to the hospital and sent to the MCS database from the Hospital Data System (HIS). Use this menu option when patient data must be added manually to the database.

Error Message

If any error occurs while attempting to add the new record to the database, an error message appears in the Attendant Status window.

Procedure

Action	Result
Type **a** to select the Add (or Admit, if adding a patient record) command.	The first field highlights for data entry. (2)
Type data into each field, according to the field definitions in Database Procedures on page 88, and press **Enter** after each entry. (In fields that provide choices, use the space bar to toggle among the options.)	The message “Do you want to insert this? (Y/N)” displays.
Type **Y** and press **Enter** to confirm the addition. Type **N** and press **Enter** to cancel it.	If the addition is confirmed, the word “Inserted” displays under Attendant Status. “Record not inserted” displays if the addition was cancelled. The cursor is positioned on the command line.
Type **q** (quit) to exit a particular type of record.	The MCS Database Maintenance menu of record types displays.

Delete a Record/ Discharge a Patient

Use this procedure to delete a record of the type selected or to discharge a patient from the database.

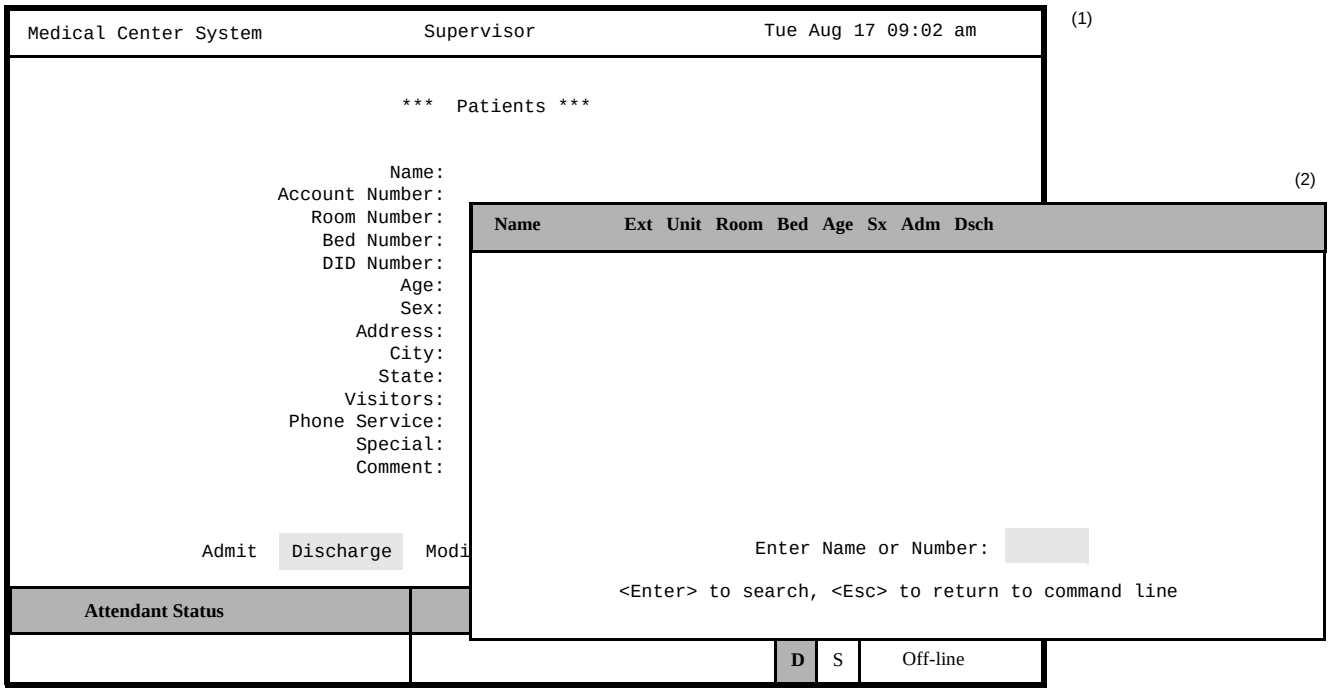

Figure 6-4 Delete a Record/Discharge a Patient

Effect of Discharge on DID

When a patient with a DID number is discharged, MCS notifies the PBX to route that DID number to the configured discharged patient as configured in *Chapter 8 CONFIGURATION MANAGEMENT*. After the discharge time has expired, the record will be removed from the database.

Error Messages

An error message appears in the Attendant Status window if any error occurs while attempting to add the new record to the database.

Service Unavailable

If an attempt to change a DID number to the configured destination or to change the patient's extension from having phone service to not having phone service is unsuccessful, the message "Service Unavailable" appears in the Attendant Status Window. This message shows that the PBX did not receive the change. The unsuccessful change is recorded in the Outstanding RSC or DID database.

Procedure

Action	Result
Type **d** to select the Delete (or Discharge if deleting a patient record) command. (1)	A name or number entry field displays at the bottom of the screen, and a highlighted heading displays at the top of the screen. (2)
Type part or all of the name or number and press **Enter**. To display all the matching records, press **Enter** on the blank entry field.	All of the matching names or numbers in the database display.
Using the arrow keys, move the highlight to the desired name or number and press **Enter**.	The field entries display. The message “Do you want to delete this? (Y/N)” displays below.
Type **Y** and press **Enter** to confirm the deletion/discharge. Type **N** and press **Enter** to cancel it.	If deletion is confirmed, the word “Modified” displays under Attendant Status. “Not deleted” or “Not discharged” displays if the deletion/discharge was cancelled. The cursor is positioned on the command line.
Type **q** (quit) to exit a particular type of record.	The MCS Database Maintenance menu of record types displays.

Modify a Record

Use this procedure to make changes to the field entries of a particular database record.

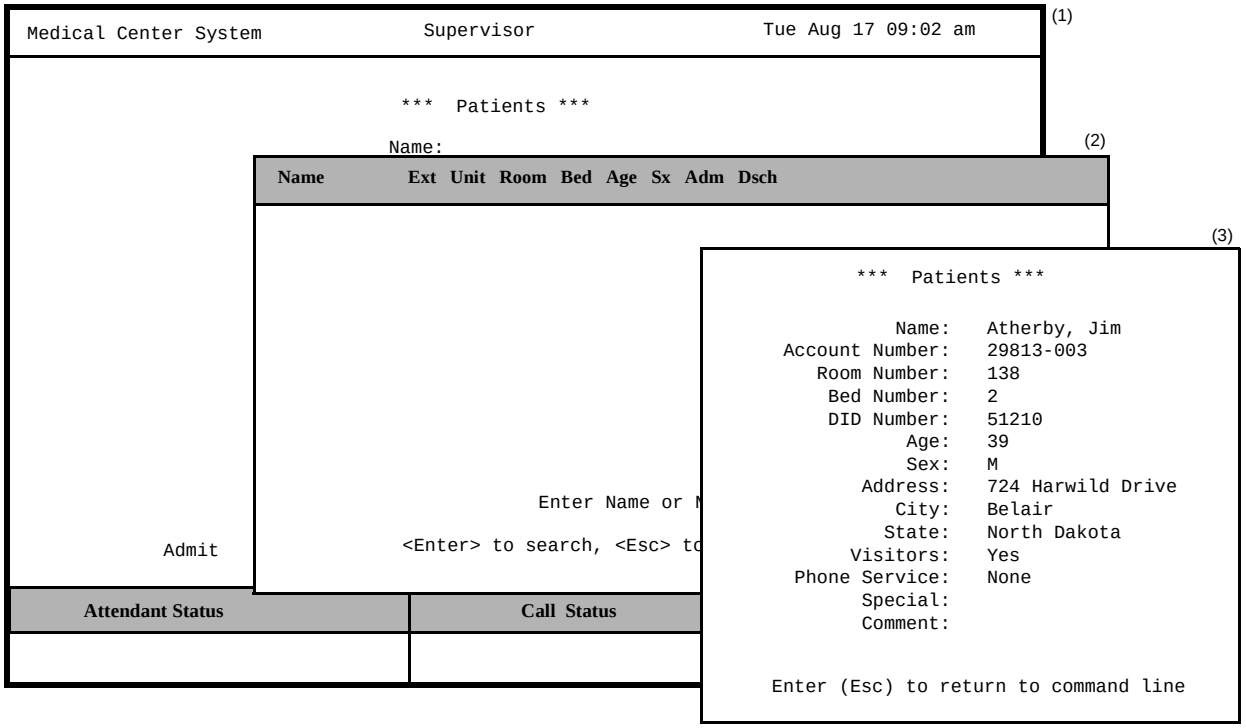

Figure 6-5 Modify a Record

External Numbers

To modify or search for external numbers, enter them exactly as they appear in the database, including parentheses and dashes.

Procedure

Action	Result
Type **m** to select the Modify command. (1)	A name or number entry field displays at the bottom of the screen, and a highlighted heading displays at the top of the screen. (2)
Type part or all of the name or number of the record to be changed and press **Enter**. To display all names or numbers, press **Enter** when the blank entry field is highlighted.	All the matching names or numbers in the database display.
Using the arrow keys, move the highlight to the desired name or number and press **Enter**.	The contents of the selected record display. (3)

Action	Result
Use the arrow keys to move among the fields, the backspace key to erase existing data, and the space bar to toggle among options within a field. Type new data where required and press **Enter** after each entry.	The message “Do you want to save changes? (Y/N)” displays.
Type **Y** and press **Enter** to save the change. Type **N** and press **Enter** to cancel it.	If the save is confirmed, the word “Modified” displays under Attendant Status. “Record not modified” displays if the modification was cancelled. The cursor is positioned on the command line.
Type **q** (quit) to exit a particular type of record.	The MCS Database Maintenance menu of record types displays.

View Database Records

Use this procedure to display selected database records for on-screen viewing or printing.

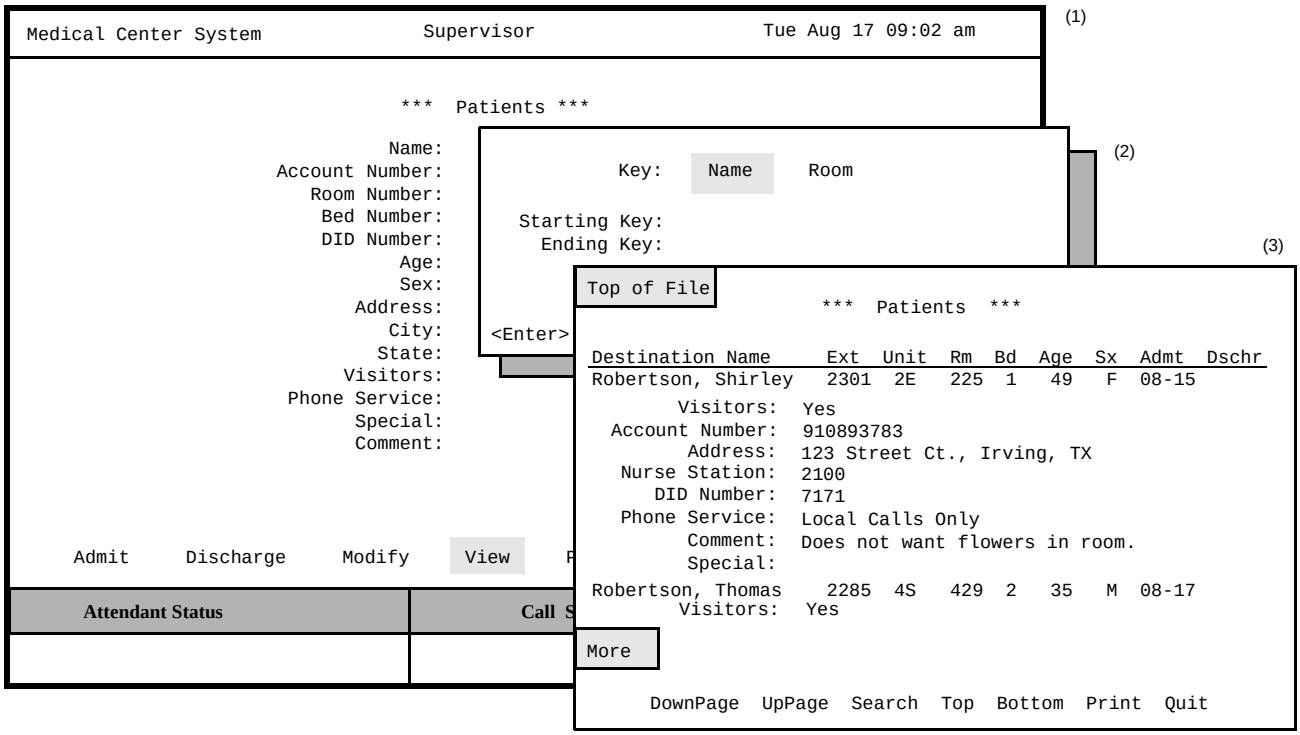

Figure 6-6 View Database Records

Range Values

The first digit of the beginning value must be smaller than the first digit of the ending search value when specifying the range of records to be viewed. For instance, if you enter 41 as the beginning value and 299 as the ending value, the search will fail because 4 is greater than 2.

Procedure

Action	Result
Type **v** to select the View command. (1)	A window prompts for the key used to search the database and the beginning and ending pattern of records to be displayed. (2)
To show the range of records to be viewed, type the first record value and press **Enter**, and type the last value and press **Enter**.	All records within the range shown are displayed. (3)
Use the **DownPage** command to move forward one page, the **UpPage** command to move back one page, the **Top** command to move to the beginning of the display, and the **Bottom** command to move to the end of the display.	
Search the Display: Type **s** to select the Search command. At the prompt, type the desired pattern and press **Enter**. Print the Display: Type **p** to select the Print command. At the prompt, type **f** to print the whole file or **s** to print the screen and press **Enter**.	All occurrences of the given pattern on that page highlight. There is a pause while the material is sent to the printer. Then, the command line is returned.
To exit the display, type **q** (quit).	The data entry screen of the current record type displays again, and the cursor is positioned on the command line.
Type **q** (quit) to exit a particular type of record.	The MCS Database Maintenance menu displays.

Print Database Records

Use this procedure to print all or part of the records of a selected type.

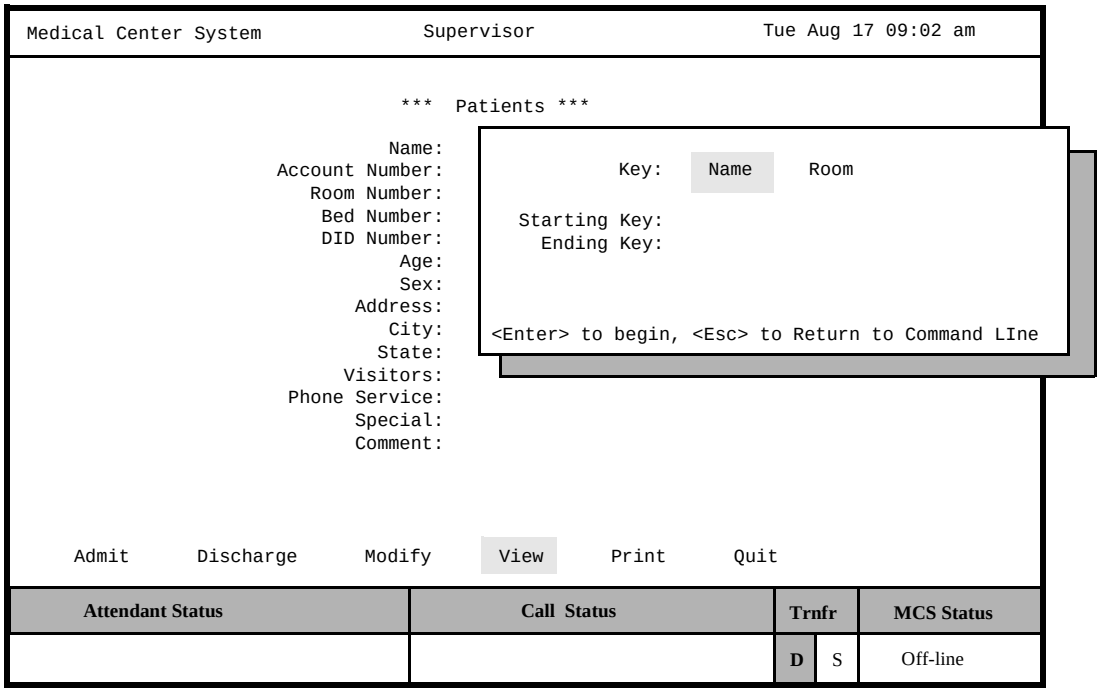

Figure 6-7 Print Database Records

Range Values

The first digit of the beginning value must be smaller than the first digit of the ending value when specifying the range of records to be printed. For instance, if you enter 41 as the beginning value and 299 as the ending value, the search will fail because 4 is greater than 2.

Procedure

Action	Result
Type **p** to select the Print command. (1)	A window displays prompts for the search key and the starting and ending values, or keys, for the search range.
Using the space bar, toggle between the displayed keys. Press **Enter** to select the desired key. To show the range of records to be printed, type the first record value and press **Enter**, and type the last value and press **Enter**.	All records within the range shown are sent to the printer and the cursor is positioned on the command line.
Type **q** (quit) to exit a particular type of record.	The MCS Database Maintenance menu of record types displays.

Database Record Descriptions

The kinds of records that can be accessed through the MCS Database Maintenance menu are listed below. Also listed are field definitions and the additional data displayed in a pop-up window from related assignments through the **Extension Maintenance** option.

Patients

Normally, patient data comes from the Hospital Information System (HIS) and is added to the system when the patient is admitted. However, patient information can be added manually to the database using this record type, if required. Select the **Patient** option to display the following fields for data entry:

Name	A 30-character, unique patient name, generally in the form *last, first initial*.
Room	The four-digit number of the room to which the patient has been assigned. The first character must be numeric if Directory Assistance searches by room number are to be made available through Operator Functions.
Bed	The one-digit number of the bed in the room to which the patient has been assigned. Valid values: A-Z, 0-9.

Note: *After data is entered in these first three fields, a pop-up window displays the following data that has been assigned through the Extension Maintenance option:*
Extension *- The phone extension associated with the assigned room and bed.*
Unit *- The medical unit in which the assigned room is located.*
Nurse Station *- The extension of the nursing station that is responsible for the room.*

Account No.	The patient's account number, consisting of up to ten characters. This number must be unique.
DID Number	The five-digit Direct Inward Dialing number used for calling the patient directly from outside the hospital without going through the operator.
Age	The three-digit age of the patient. If the patient is months or days old, the third character is either an *m* or a *d* respectively (e.g., 100, 30, 12m, 1d). An entry is required in this field.
Sex	The gender of the patient. Use the space bar to toggle between M(ale) and F(emale). The default is M.
Address	The street address of the patient, up to 30 alphanumeric characters.
City	The city in which the patient lives, up to 15 alphanumeric characters.
State	The two-character abbreviation of the state in which the patient lives.

Visitors	An entry that indicates whether the patient is accepting visitors. Use the space bar to toggle between the two options: yes and no. The default is Yes.
Phone Service	A choice between the entries made to the *Restriction for Patients with no Srv* and the *Restriction for Patient Phone Service* fields in the Configuration Management option on the MCS Main Menu. Use the space bar to toggle between the two options.
Comment	An open field consisting of up to 40 characters for any required patient information.
Special	One of the following reasons why calls to this patient should not be attempted. (Use arrow keys or the space bar to move among options, and press **Enter** to accept the selection.)

Not Applicable– Does not apply to this patient; calls are permitted.

Confidential – The patient does not want others to know he/she is there.

No Phone Service–The patient has not contracted for phone service.

Deceased – The patient is deceased.

Physicians

Select the **Physician** option to display the following fields for data entry:

Name	A 30-character physician's name.
Pager Dial Number	The number for the long-distance pocket pager carried by the physician listed in the *Name* field. This number is dialed when the operator selects this entry from the Beeper function. The outgoing trunk access code must be included. This number contain up to 15 digits.
Pager ID	The logical or local pager ID number for the pager device assigned to the individual or group. Use the word **None** if a local pager ID number is not available.
Office Phone	The office telephone number for the physician listed in the *Name* field, up to 15 digits.
Note	A 15-character area for data displayed under Operator Functions for this physician when the Directory Assistance feature is used (e.g., the hours at which the physician can be reached at the office phone number).
Specialty	The primary area of medicine in which this physician practices, up to 10 characters.

Associate Name	The name of the back-up physician to be called if the named physician cannot be reached, up to 30 characters.
Associate Phone	The telephone number (external or internal) at which the back-up physician can be reached, up to 15 digits.
Car Phone	The named physician's car phone number, up to 15 digits.
Home Phone	The named physician's home phone number, up to 15 digits.

Employees

This kind of record contains the following fields for all employees that are not already included in the Physician database:

Name	A 30-character employee name.
Extension	The phone number assigned to the employee, up to five digits.
Pager Dial Number	The on-site or long-distance pager number for dialing the pager carried by the employee, up to 15 digits.

Note: *This number is not called through the "Beeper" function only.*

Pager ID	The logical or local pager ID number for the pager device assigned to the individual or group. Use the word **None** if a local pager ID number is not available.

Note: *After data is entered in these first two fields, a pop-up window displays data assigned to this extension through the Extension Maintenance option:*

Department *– Department to which this extension is assigned. Displayed under Operator Functions on the primary line of a directory lookup.*

Room *– Room in which this extension is located. Under Operator Functions, it displays when the record is expanded or when the record is shown in the Source Caller window.*

Restriction *– Level of restriction associated with this extension, set up under the RSC Description option on the MCS System Administration Menu. Under Operator Functions it displays when the record is expanded.*

Note	A 15-character area for data that displays under Operator Functions for this employee when the Directory Assistance feature is used (e.g., the employee's work schedule).
Home Phone Number	The employee's home telephone number as displayed under Operator Functions only if the record is expanded, up to 15 digits.

Comment	An area of 40 characters made available for any data required for this employee. This displays under Operator Functions only if the record is expanded.

Attendant Stations

Selecting this option allows the supervisor to set up an attendant terminal or station and displays the following fields for that purpose:

Attendant ID	The number that represents this attendant console. MCS converts this number to the attendant notation defined under the Configuration Management option (i.e., Att#), displays it in the Directory Assistance database, and uses it in attendant transfers.
Extension	The extension number defined for this attendant console. This extension must not have been assigned to another attendant but must have been previously defined through the NEAX Maintenance Administration Terminal.

Note: *After entry of the extension, a pop-up window displays the Department and Room information that has been associated with the extension through the Extension Maintenance option. (Extensions that correspond to attendant stations do not have restrictions.)*

Device	The name of this attendant's CRT device. This number corresponds directly to the communication port (tty) on the computer to which this attendant CRT is connected. Each device can be assigned to only one attendant.

Other Internal Extensions

This kind of record contains extensions and data for general locations within the hospital such as cafeterias, gift shops, break rooms, and waiting rooms. Extensions assigned to these locations may also be found in other records, but their primary location is defined here. When a call comes from one of these locations, the following fields are displayed in the Source Caller window:

Name	The name of an internal location or entity, up to 30 characters. Examples: gift shop, cafeteria, medical conference room, or pharmacy.
Extension	The five-digit extension number assigned to this location or entity.

Note: *After entry of the name and extension, a pop-up window displays the Department, Room, and default Restriction information that has been associated to the extension through the Extension Maintenance option. (The Restriction can only be viewed when the record is expanded.)*

Note	A 15-character area for data displayed for this location or entity when the Directory Assistance feature is used under Operator Functions.

Comments (2)	Two areas of 40 characters each made available for data required for this location or entity. This displays under Operator Functions only if the record is expanded or when a call is originated from this extension.

Tests / Procedures

This option is used to identify the names of tests and medical procedures scheduled by callers and the extension by which each test or procedure can be scheduled. Records entered through this option never appear in the Source Caller window but are most likely already entered in the Other Internal Extensions database. Selection of this option displays the following fields:

Name	The name of the test or procedure, up to 30 characters.
Extension	The extension through which a caller can schedule the test or procedure or obtain information about it.

Note: *After you enter the test/procedure name and extension number, a pop-up window displays the department, room, and default restriction data tied to the extension through the Extension Maintenance option.*

Note	A 15-character area for data displayed for this test or procedure when the Directory Assistance feature is used under Operator Functions.
Comments(2)	Two areas of 40 characters each made available for information required for this test or procedure. This information displays when the record is expanded in Directory Assistance under Operator Functions.

External Numbers

This option is used to identify telephone numbers that are outside of the hospital PBX system. Select this option to display the following fields for data entry:

Name	The unique name associated with this location or entity, up to 15 characters. Examples: City Police, Medical Examiner, or Independent Laboratory.
Number	The telephone number for this location, consisting of up to 15 characters and entered with parentheses and dashes as needed to separate the number components. The number must be preceded with the outgoing trunk access code. Example: (214) 555-1212.
Note	A 15-character area for data displayed for this selection when the Directory Assistance feature is used under Operator Functions.
Comments (2)	Two areas of 40 characters each for data required for this location or number that displays when the record is expanded in Directory Assistance under Operator Functions.

Trunk Numbers

This option is used to assign in MCS the numbers by which incoming trunks are identified in the PBX configuration (and retrieved from the database). However, even an unassigned trunk number can be displayed in the Source Caller window, since it is provided by the PBX. Select the **Trunk Numbers** option to display the following fields for data entry:

Trunk Number	The number configured for this incoming trunk at the PBX MAT.
Trunk Name	The unique name by which an incoming trunk is known, up to 15 characters. Examples: Metro or 800
Note	A 15-character area for data displayed for this location or entity when the Directory Assistance feature is used under Operator Functions.
Comments (2)	Two areas of 40 characters each for whatever data may be required for this incoming trunk.

Beeper Codes

After an operator pages a physician or employee by beeper dial number, the operator manually enters a code number that gives the reason for the page. The **Beeper Codes** option is used to tie reasons for paging by beeper with these manually entered code numbers. Select this option to display the following fields for data entry:

Code Name	The reason why the operator is paging the beeper holder, up to 30 characters.
Code Number	The number to be entered manually by the operator to give the purpose of the page.

Emergencies

The emergency records give the operator primary and alternate extensions for incoming emergency calls. This option is also used to identify primary and alternate extensions by which a supervisor can be alerted to monitor an on-going operator conversation. Select this option to display the following fields for data entry:

Problem	A description of an emergency situation or a supervisor notation, up to 30 characters. To make the supervisor conversation monitoring feature available to operators, at least one of these records must be completed with the word *Supervisor* entered in this field.
Extension	The primary extension number to be contacted for a certain emergency or to alert the given supervisor for conversation monitoring, up to five digits.

Note: *After entry of the extension and then again after entry of the alternate extension, a pop-up window displays the department, room, and default restriction data that has been tied to that extension through the Extension Maintenance option.*

Alternate Extension	The alternate extension to be contacted if the primary extension number is busy, up to five digits. No alternate extension is accepted on a *Supervisor* record.
Note	Any data that might be helpful for the operator to have while connected to the emergency caller, up to 25 characters.

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Chapter 7 SYSTEM ADMINISTRATION

Introduction

Use the **System Administration** option on the Main Menu to alter and view system-specific data such as hospital extensions, valid patient direct-inward-dial (DID) numbers, restriction classes, and any outstanding restriction or DID changes.

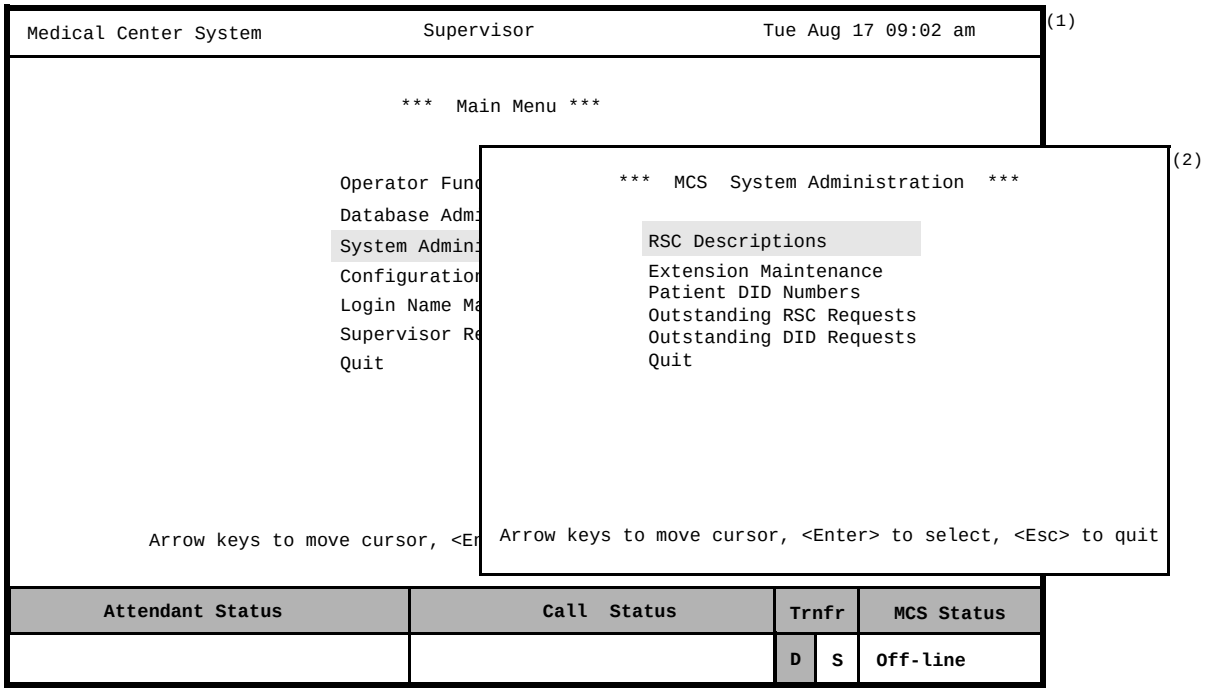

Figure 7-1 System Administration

Menu Options

The System Administration menu provides access to the following options:

RSC Descriptions — Attribute the same meanings to MCS restriction classes as those assigned at the PBX Maintenance Administration Terminal.

Extension Maintenance — Add, alter, print, or view extension data to match the PBX MAT data.

Patient DID Numbers — Add, delete, view, or print DID numbers for MCS use with patients.

Outstanding RSC Requests — Manage RSC requests that could not be acted on before and were placed in this file as a result.

Outstanding DID Requests — Manage DID requests that could not be acted on before and were placed in this file as a result.

Procedure

Action	Result
On the MCS Main Menu, type **s** to select the System Administration option.	The MCS System Administration menu displays.
To select the desired menu option, type the highlighted letter. **Note:** *In most cases, the highlighted letter is the first letter of the word. When the word begins with a letter that has been used before, the second or even third letter may be highlighted.*	
Refer to the following pages for descriptions of each menu option.	
To exit the System Administration option, type **q** (quit).	The MCS Main Menu displays.

RSC Descriptions

Use the **RSC Descriptions** option on the MCS System Administration menu to assign the same meaning to the MCS restriction classes as those assigned at the PBX.

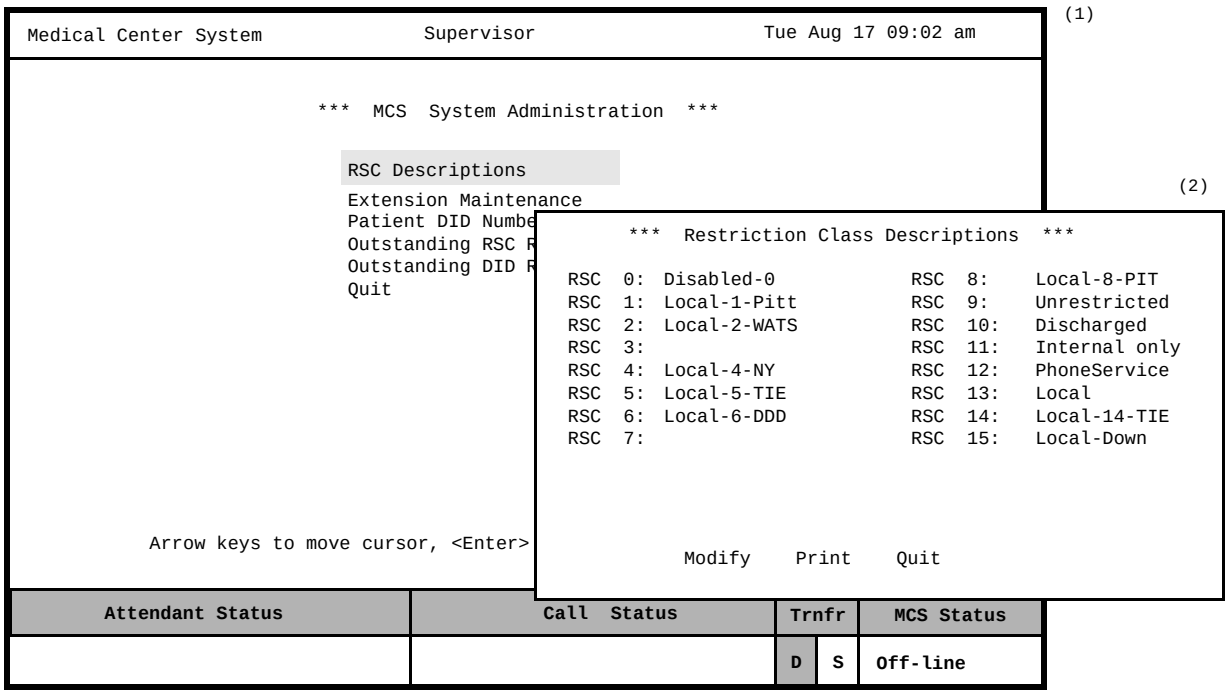

Figure 7-2 Restriction Class Descriptions

PBX Restriction Classes

The NEAX PBX contains 16 restriction classes that are numbered from 0 to 15. They are defined by the PBX administrator via the Maintenance Administration Terminal (MAT). These class definitions can be whatever is required by the site(s) served by the PBX. For instance, RSC 4 might mean unrestricted calling privileges at one site but mean disable a telephone at another site. MCS must know what the valid PBX restrictions are to prevent changing an extension's restrictions to a value that is not understood by the PBX. Use this option to assign to MCS the restriction classes assigned at the PBX MAT.

Other Affected Options

The RSC descriptions assigned through this option are used elsewhere in MCS. The **Extension Maintenance** option displays them as choices during restriction assignment. The **Configuration Management** option displays them as choices during the assignment of restrictions for patients who have phone service.

Procedure

Action	Result
On the MCS System Administration menu, type **r** to select the RSC Descriptions option. (1)	The Restriction Class Descriptions screen displays. (2)
To Modify RSC Descriptions: Type **m** to select the Modify command. Press **Enter** to move to the RSC description that is to be changed, and use the backspace key to erase any existing description. Type the new description and press **Enter**. Repeat this procedure until all required RSC descriptions are changed. Type **Y** and press **Enter** to save any changes. Type **N** and press **Enter** to cancel them.	The description of the first restriction class highlights for changes. The message “Do you want to save changes? (Y/N)” displays. If the changes are confirmed, the word “Modified” displays in the Attendant Status Window to show that the change has been inserted into the database. “Record not modified” displays if the change was cancelled. The cursor is positioned on the command line.
To Print RSC Descriptions: Type **p** to select the Print command.	The screen is sent to the printer and the word “Done” displays in the Attendant Status Window.
Type **q** (quit) to exit the Restriction Class Descriptions display.	The MCS System Administration menu displays.

Extension Maintenance

Use the **Extension Maintenance** option on the MCS Database Maintenance menu to add, modify, delete, view, and/or print extension assignment records. All MCS-supported extensions must first be assigned through this option.

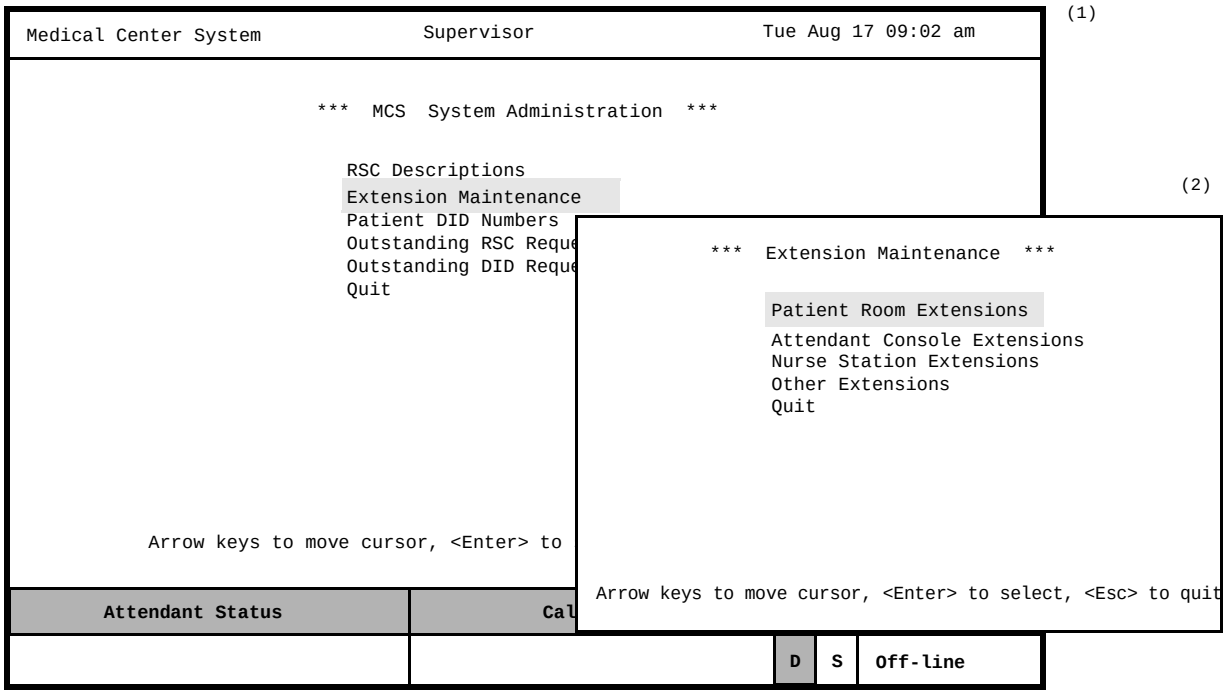

Figure 7-3 Extension Maintenance

Internal Extension Assignments

Assign all internal hospital extensions through this option before making other assignments (e.g., patient, physician, employee) to them. These Extension Maintenance records identify the internal extensions that have been assigned on the PBX Maintenance Administration Terminal (MAT) by the type of phone (e.g., patient room, nursing station), their tenant, their location, and, for some, their default restriction class. Although MCS assignments to the extensions may change (i.e., patients, employees), changes to these basic Extension Maintenance records should be rare and probably required only by changes at the MAT.

Pop-up Window Information

When an extension number is entered in some options on the MCS Database Maintenance menu, a pop-up window displays basic location and restriction data known about that extension through the **Extension Maintenance** option. (**Exception**: The restriction data displayed in the pop-up window is assigned through the **RSC Descriptions** option on the MCS System Administration menu. Refer to "Introduction" on page 105 for more information.)

Empty Fields

Not all of the fields in a record require an entry. However, the record is considered complete only when you press **Enter** after each field highlights, regardless of whether you have made an entry in that field. Pressing the **Esc** key before completing a full record erases any data entered up to that point.

Range Values

The first digit of the beginning value must be smaller than the first digit of the ending value when specifying the range of records to be printed. For instance, if you enter 41 as the beginning value and 299 as the ending value, the search will fail because 4 is greater than 2.

Common Procedure

Although the information required in the database differs from one kind of extension to another (e.g., from patient room to attendant console extensions), the procedures by which information is entered, deleted, changed, viewed, and/or printed are the same. This section provides one set of procedures for handling Extension Maintenance information in the database. The different types of records that the database can contain are described by their fields under the procedure "Add an Extension" on page 112.

View Command

The **View** command allows you to display a selection, or range, of extension records. The range is specified by a beginning pattern and an ending pattern. The pattern can be either a partial or full entry of a number or word which differs according to the type of record selected from the MCS Extension Maintenance menu. When you select the **View** command, a pop-up window prompts for the keys by which the records are to be retrieved and displayed.

Menu Access

The Supervisor is always authorized to enter this menu option. An Operator can enter it only if such access is authorized through the **Configuration Management** option on the Main Menu.

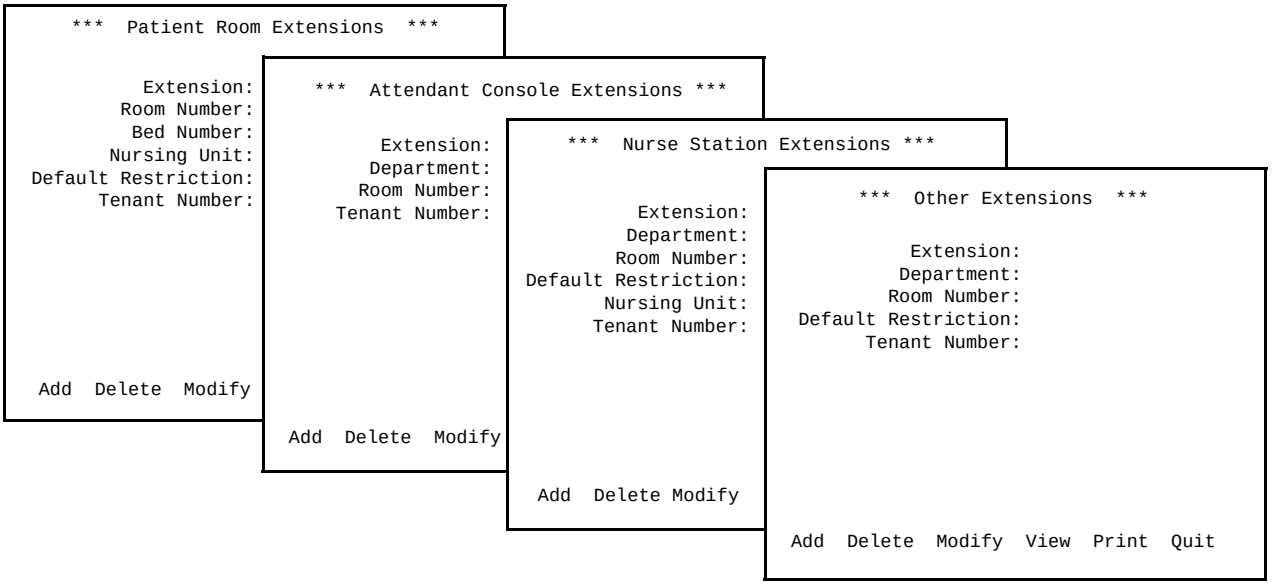

Figure 7-4 Record Field and Command Line Samples

Procedure

Action	Result
On the MCS System Administration menu, type **e** to select the Extension Maintenance option.	The Extension Maintenance menu displays the types of extensions.
Refer to the following pages for descriptions of each type of extension record.	
To exit the Extension Maintenance menu, type **q** (quit).	The MCS System Administration menu displays.

Add an Extension

Use this procedure to add a new extension record of the type selected to the database.

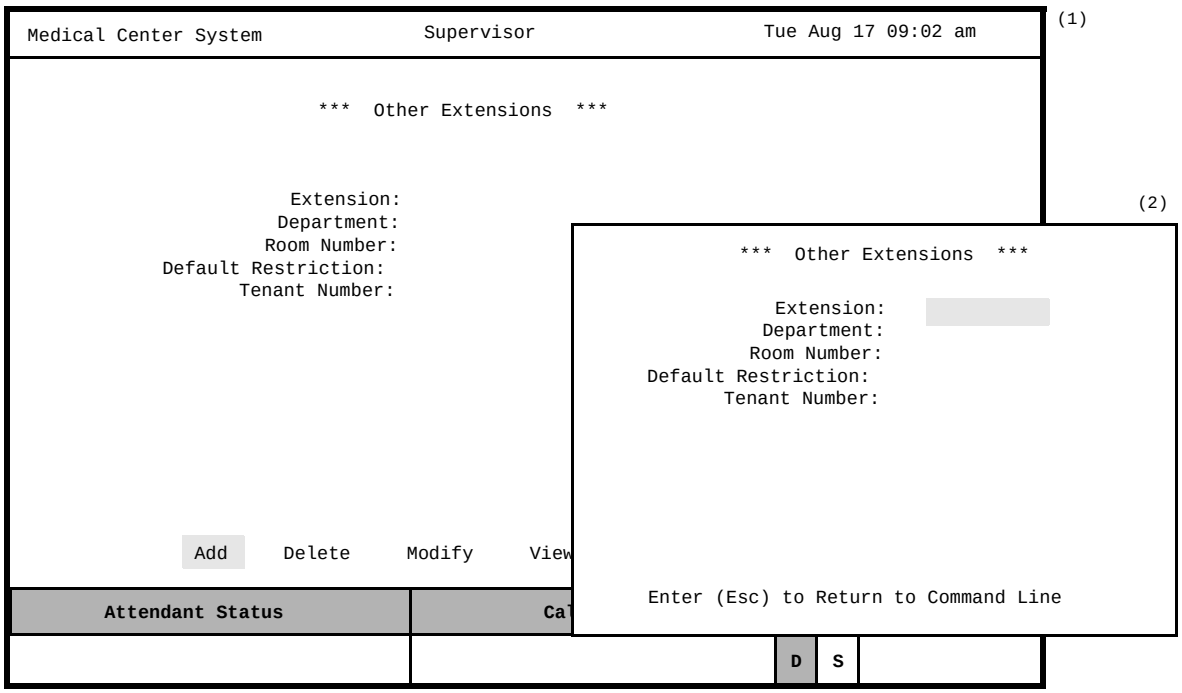

Figure 7-5 Add an Extension

Assignment Sequence

An extension cannot be assigned to a unit until the unit has been assigned through the **Nurse Station Extension** option on the Extension Maintenance menu.

Extension Record Descriptions

Each of the extension record types is described below:

- Patient Room Extension: This type of extension is assigned to a bed in a room on a specific unit that is under the responsibility of one nurses' station. This information does not change frequently, but it must be kept current and accurately reflect extension assignments made at the PBX MAT. Patient Room Extension assignments require the following field information:

Extension	The extension number itself, up to 5 digits. This number must be unique.
Room Number	The number of the room to which the extension is assigned, up to 4 characters (letters or numbers).
Bed Number	The number of the bed to which the extension is assigned. This number can be only one digit. Bed *0* indicates a private room.

Unit	The ward or location of the room containing the extension, up to 4 characters.

Note: *This Unit must have been previously associated to a nursing station under the Nurse Station Extensions option.*

Default Restriction	The restriction class that is restored to the extension when a patient is discharged from the room. You can scroll through the possible entries for this field by pressing the space bar. These entries correspond to those set up in the Configuration Management option on the Main Menu.
Tenant Number	The tenant number assigned for this extension at the PBX.

- Attendant Console Extensions: These extensions may belong to specific departments, or they may be located in one or more rooms. Selection of this option displays the following fields for data entry:

Extension	The number being assigned to the attendant console. This number must be unique and can contain up to 5 characters.
Department	The name or number of the department in which the attendant console is located, up to 4 characters. This field may be left blank if not applicable.
Room Number	The number of the room to which the extension is assigned, up to 4 characters (letters or numbers).
Tenant Number	The tenant number assigned for this extension at the PBX.

- Nurse Station Extensions: It is assumed that each unit has only one nursing station assigned to it, and that, when a patient is admitted and assigned to a room on a unit, the nursing station extension corresponding to that unit is applicable. Selection of this option displays the following fields for data entry:

Extension	The number being assigned to the nursing station, up to 5 digits. This number must be unique.
Department	The name or number of the department in which the nursing station is located, up to 4 characters. This field may be left blank if not applicable.
Room Number	The number of the room to which the extension is assigned. This field must begin with a number and can contain up to 4 characters.
Default Restriction	The restriction class of the extension. You can scroll through the possible entries for this field by pressing the space bar. These entries correspond to those set up in the Configuration Management option on the Main Menu.

Unit	The ward or area for which this nursing station is responsible, up to 4 characters.
Tenant Number	The tenant number assigned for this extension at the PBX.

- Other Extensions: This option is used to make assignments for all extensions that are to be supported by MCS, except patient room, attendant console, and nursing station extensions. Such extensions might be later assigned to specific tests and procedures or to other locations such as conference rooms, gift shops, or cafeterias. Selection of this option displays the following fields for data entry:

Extension	The phone number being assigned, up to 5 digits. This number must be unique.
Department	The name or number of the department in which the extension is located, up to 4 characters. This field may be left blank if not applicable.
Room Number	The number of the room to which the extension is assigned, up to 4 characters (letters or numbers).
Default Restriction	The restriction class of the extension. You can scroll through the possible entries for this field by pressing the space bar. These entries correspond to those set up in the Configuration Management option on the Main Menu.
Tenant Number	The tenant number assigned for this extension at the PBX.

Procedure

Action	Result
Type **a** to select the Add command. (1)	The first field highlights for data entry. (2)
Type data to each field according to the field definition, and press **Enter** after each entry. **Note 1:** *The entry in the first field must be unique, but the remaining fields are open entry.* **Note 2:** *In fields that provide choices, use the space bar to toggle among the options.*	The message “Do you want to insert this? (Y/N)” displays.
Type **Y** and press **Enter** to confirm the addition; type **N** and press **Enter** to cancel it.	If confirmed, the word “Inserted” displays in the Attendant Status Window. “Record not inserted” displays if the addition was cancelled. The cursor is positioned on the command line.
To exit the record type, type **q** (quit).	The Extension Maintenance menu displays.

Delete an Extension

Use this procedure to delete an extension record of the type selected from the database.

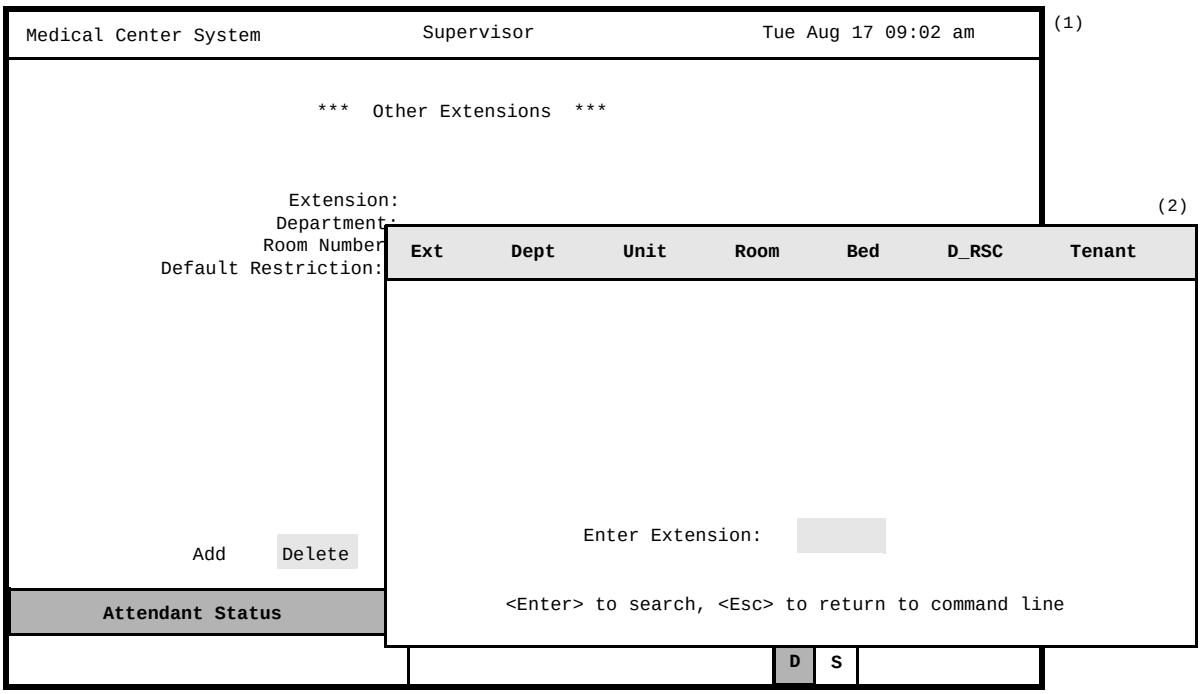

Figure 7-6 Delete an Extension

Procedure

Action	Result
Type **d** to select the Delete command. (1)	An extension entry field displays at the bottom of the screen, and a highlighted extension heading displays at the top of the screen. (2)
Type all or part of the extension number to be deleted and press **Enter**. To display all extension numbers, press **Enter** on the blank extension entry field.	All of the matching extensions in the database display.
Using the arrow keys, move the highlight to the extension to be deleted and press **Enter**.	The field entries display and the message “Do you want to delete this? (Y/N)” displays at the bottom of the screen.
Type **Y** and press **Enter** to confirm the deletion; type **N** and press **Enter** to cancel it.	If confirmed, the word “Deleted” displays in the Attendant Status Window. “Record not deleted” displays if the deletion was cancelled. The cursor is positioned on the command line.
To exit the record type, type **q** (quit).	The Extension Maintenance menu displays.

Modify an Extension

Use this procedure to make changes to the field entries of a particular extension record.

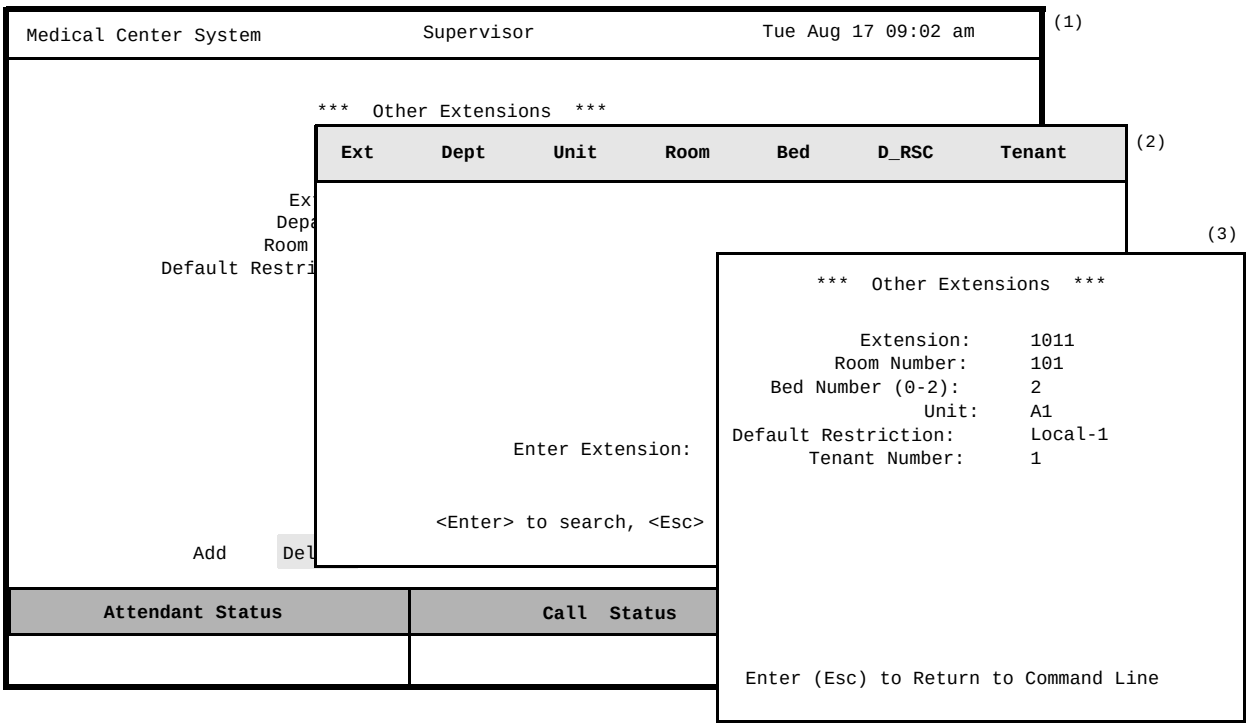

Figure 7-7 Modify an Extension

Procedure

Action	Result
Type **m** to select the Modify command. (1)	An extension entry field displays at the bottom of the screen, and a highlighted heading displays at the top of the screen. (2)
Type all or part of the extension and press **Enter**. To display all extensions, press **Enter** when the cursor is on the blank entry field.	All the matching extensions in the database display.
Use the arrow keys to move the highlight to the desired name or number and press **Enter**.	The contents of the selected record display. (3)
Use the arrow keys to move among the fields, the backspace key to erase existing data, and the space bar to toggle among options within a field. Type new data where required and press **Enter** after each entry.	The message “Do you want to save changes? (Y/N)” displays.

Action	Result
Type **Y** and press **Enter** to save the changes. Type **N** and press **Enter** to cancel them.	The word “Modified” displays in the Attendant Status Window. “Record not modified” displays if the change was cancelled. The cursor is positioned on the command line.
To exit the record type, type **q** (quit).	The Extension Maintenance menu displays.
Type **Y** and press **Enter** to save the changes. Type **N** and press **Enter** to cancel them.	The word “Modified” displays in the Attendant Status Window. “Record not modified” displays if the change was cancelled. The cursor is positioned on the command line.
To exit the record type, type **q** (quit).	The Extension Maintenance menu displays.

View Extension Records

Use this procedure to display selected database records for on-screen viewing or printing.

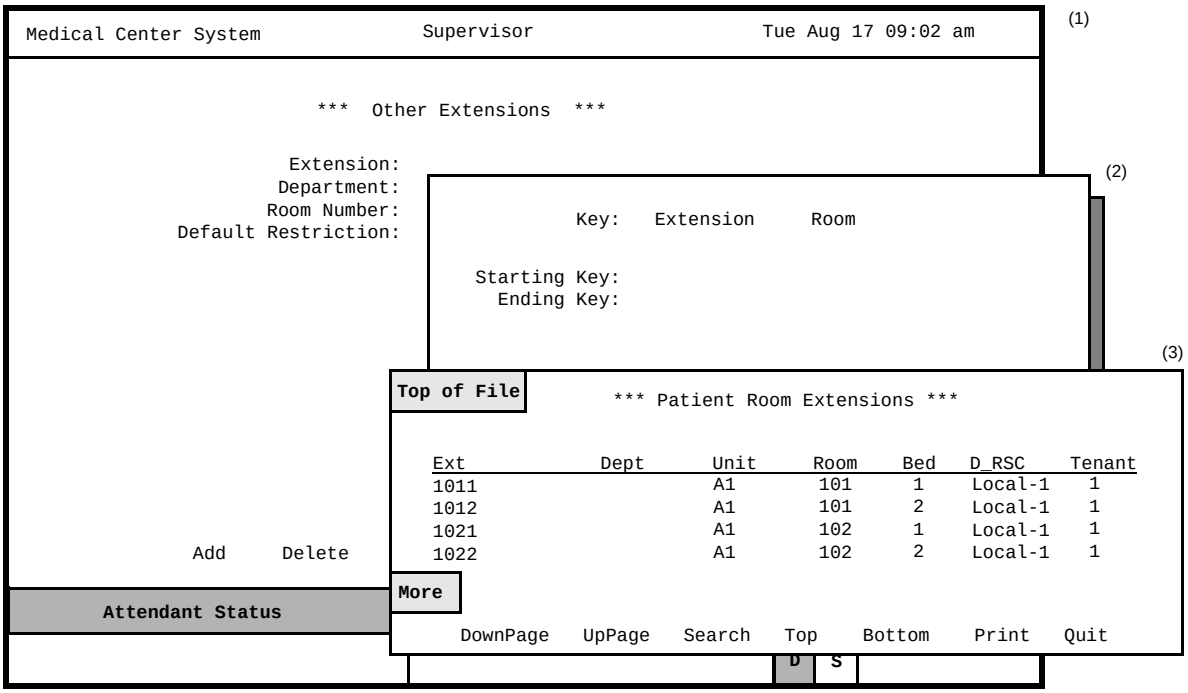

Figure 7-8 View Extension Records

Procedure

Action	Result
Type **v** to select the View command. (1)	A window requests the search key and the starting and ending values for the search range. (2)
Using the space bar, toggle between the displayed search keys and press **Enter** to select the desired key. Type the first record value and press **Enter**, and then the last and press **Enter**.	All records within the given range display for on-screen viewing. (3)

Action	Result
Use the **DownPage** command to move forward one page, the **UpPage** command to move back one page, the **Top** command to move to the beginning of the display, and the **Bottom** command to move to the end of the display.	
Search the Display: Type **s** to select the Search command. At the prompt, type the desired pattern and press **Enter**. Print the Display: Type **p** to select the Print command. At the prompt, type **f** to print the whole file or **s** to print the screen and press **Enter**.	All of the occurrences of the pattern on that page are highlighted. There is a pause while the material is sent to the printer. Then the command line returns.
To exit the display, type **q** (quit).	The data entry screen of the current record type redisplays, and the cursor is positioned on the command line.
Type **q** (quit) to exit a particular type of record.	The Extension Maintenance menu displays.

Print Extension Records

Use this procedure to print all or part of the records of a selected type.

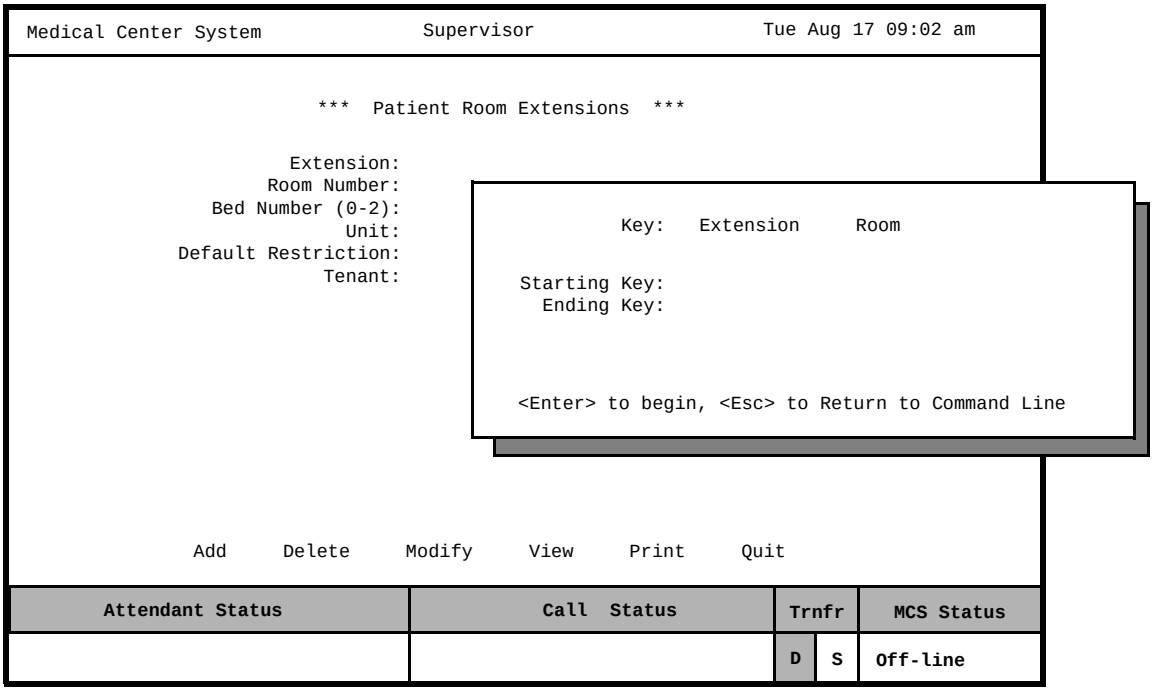

Figure 7-9 Print Extension Records

Procedure

Action	Result
Type **p** to select the Print command.	A window displays with prompts for the search key and the starting and ending values, or keys, for the search range.
Using the space bar, toggle between the displayed keys and press **Enter** to select the desired key. To show the range of records to be printed, type the first record value and press **Enter**, and type the last and press **Enter**.	All records lying within the indicated range are sent to the printer and the cursor is positioned on the command line.
Type **q** (quit) to exit a particular type of record.	The Extension Maintenance menu displays.

Patient DID Numbers

Use the **Patient DID Numbers** option on the MCS System Administration menu to assign Direct-Inward-Dial (DID) numbers to patients so that callers can ring a patient's phone directly, without operator intervention.

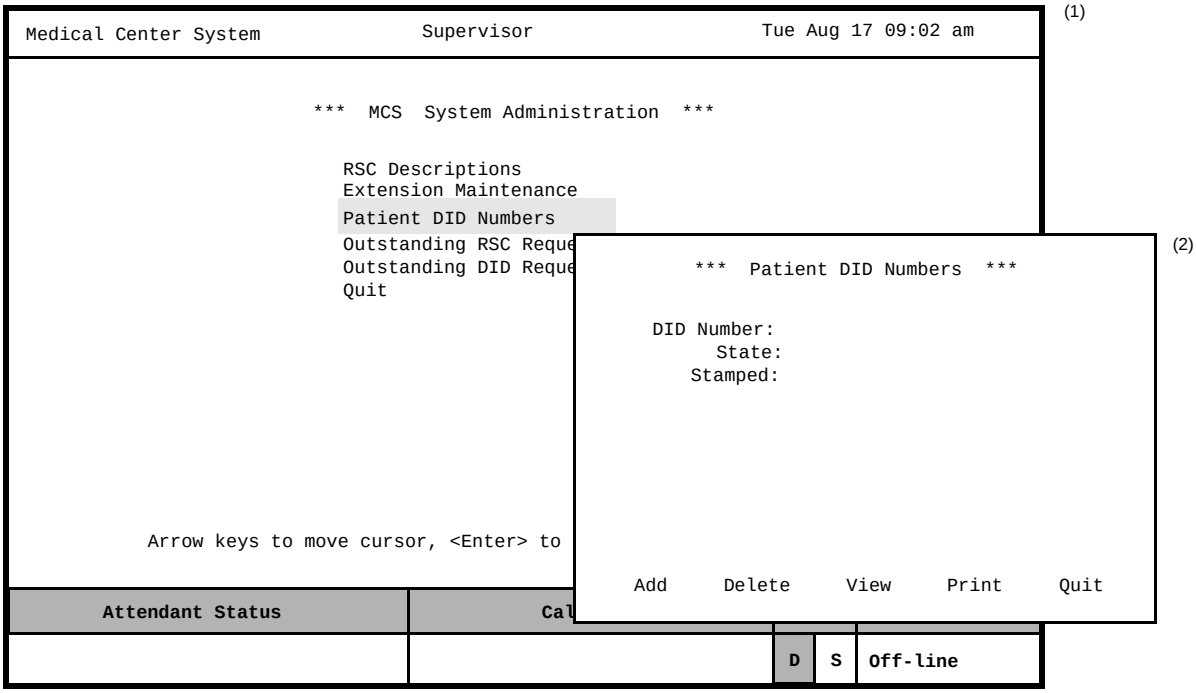

Figure 7-10 Patient DID Numbers

Transfers

As patients are moved to different locations within the hospital, their individually-assigned DID number follows them, making it possible for relatives, friends, and other callers to contact them without having to track their movements.

DID Number Status

Once entered to MCS through the Add command, DID numbers can be in any one of the following states:

Available	The DID number has been entered successfully to MCS and is available for assignment to an incoming patient.
Offered	The DID number is entered to the record of an incoming patient. When in this state, a DID number should not be assigned to another patient. The length of time that a number can remain in this status is designated through a configuration parameter.

Pending	The *offered* DID number has not been activated by the PBX. Once the patient record with the *offered* DID number assignment arrives from the HIS or is saved on the MCS menus, MCS attempts to send a message to the PBX to activate the DID number. If for any reason this message fails, the request is placed in the database of outstanding DID requests, and the DID number is considered to be in a Pending state. The number remains in this state until the message to the PBX successfully activates it or it is deleted from the DID database.
Active	The offered DID number has been activated at the PBX and is in effect for a patient. The DID number remains active until the patient is discharged, at which time it is again considered *available*.

"Stamped" Notation

Under the View command, each DID number with a status other than *Available* has an entry under the Stamped heading. This notation indicates the date and time at which the DID number last changed from one status to another.

Procedure

Action	Result
On the MCS System Administration menu, type **p** to select the Patient DID option.	The Patient DID Numbers screen displays with data entry fields.
Refer to the following pages for descriptions of each command on the Patient DID Numbers screen.	
To exit the Patient DID Numbers screen, type **q** (quit).	The MCS System Administration menu displays.

Add Patient DID Numbers

Use the **Add** command on the Patient DID Number screen to add DID numbers to the MCS database.

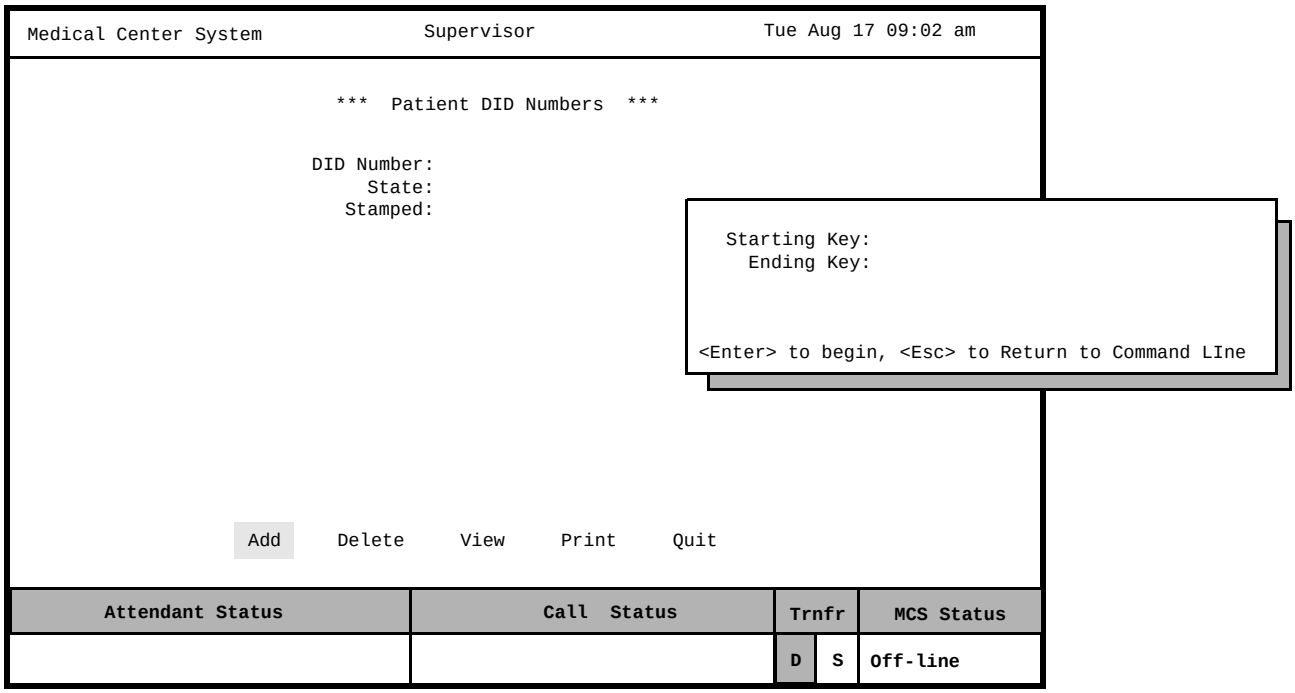

Figure 7-11 Add Patient DID Numbers

Assignment Process

During this assignment process, the supervisor indicates the range of DID numbers to be added to MCS. Unique numbers within the range are added. Any number within the indicated range that already exists in MCS is not added.

Procedure

Action	Result
Type **a** to select the Add command.	A window displays with prompts for the starting key and ending key for valid DID numbers.
Type the first new DID number to be added and press **Enter**, and type the last new DID number to be added and press **Enter**.	At the command line, the notation “Added <DID Number>” displays each number within the given range as it is added and placed in available status. Then, the cursor is positioned on the command line.

Delete Patient DID Numbers

Use the **Delete** command on the Patient DID Number screen to remove DID numbers from the MCS database.

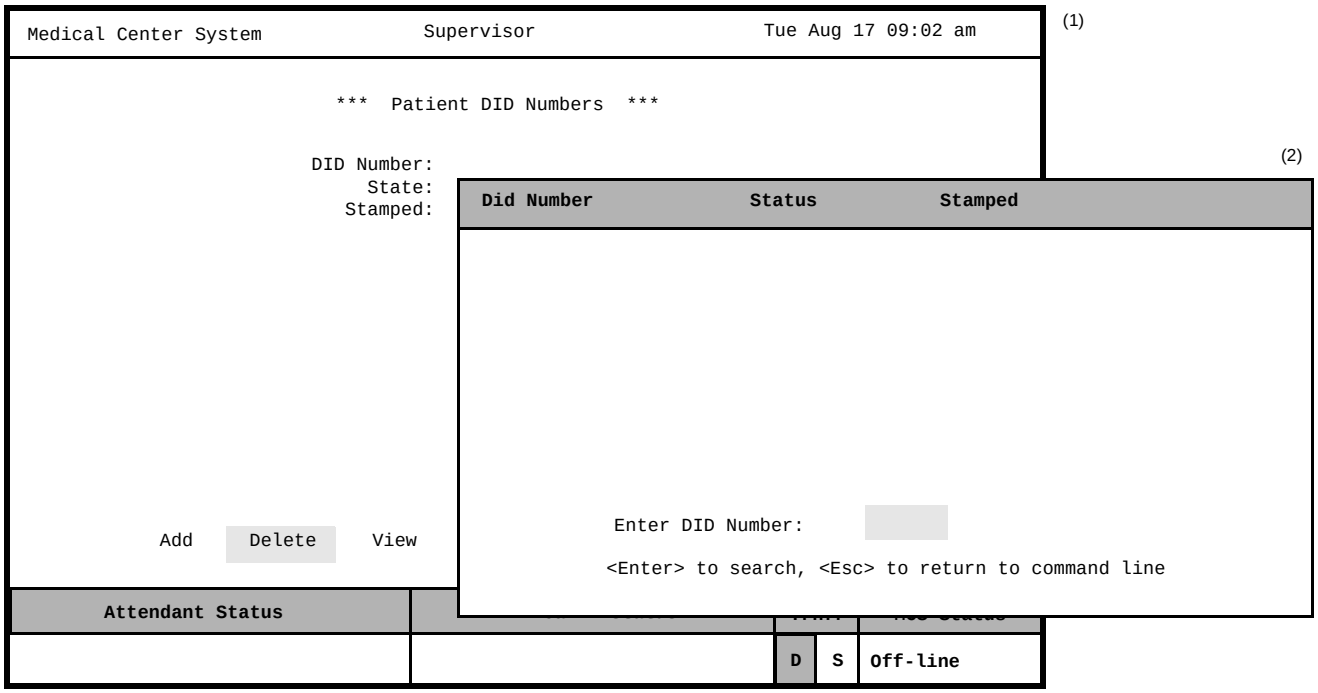

Figure 7-12 Delete Patient DID Numbers

Procedure

Action	Result
Type **d** to select the Delete command. (1)	A DID number entry field displays at the bottom of the screen, and a highlighted heading displays at the top of the screen. (2)
Type the DID number and press **Enter**. To display all the DID numbers, press **Enter** when the cursor is on the blank entry field.	All of the matching names or numbers in the database display.
Using the arrow keys, move the highlight to the desired name or number and press **Enter**.	The field entries display and the message “Do you want to delete this? (Y/N)” displays at the bottom of the screen.
Type **Y** and press **Enter** to confirm the deletion. Type **N** and press **Enter** to cancel it.	If the deletion is confirmed, the word “Deleted” displays in the Attendant Status Window. “Record not deleted” displays if the deletion was cancelled. The cursor is positioned on the command line.

View Patient DID Numbers

Use the **View** command on the Patient DID Number screen to display DID numbers for on-screen viewing or printing.

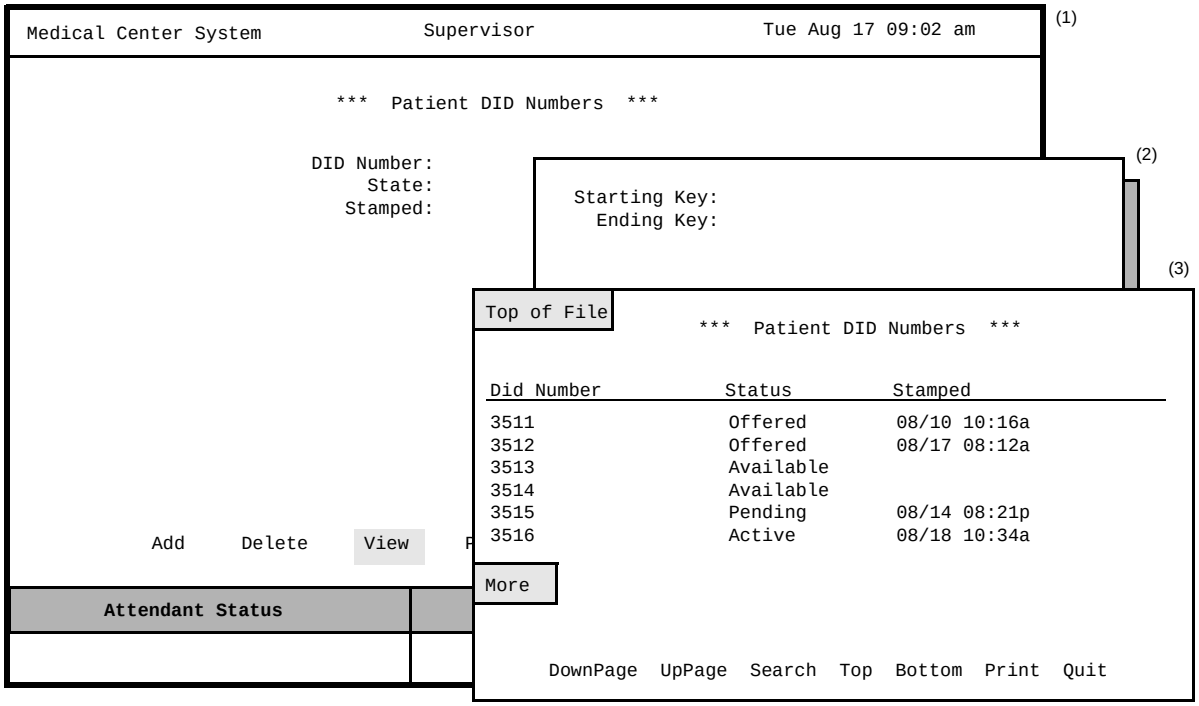

Figure 7-13 View Patient DID Numbers

Procedure

Action	Result
Type **v** to select the View command. (1)	A window displays with prompts for the starting and ending keys for the search range. (2)
To specify the range of records to be viewed, type the first record value and press **Enter**, and type the last and press **Enter**.	All records lying within the given range display. (3)
Use the **DownPage** command to move forward one page, the **UpPage** command to move back one page, the **Top** command to move to the beginning of the display, and the **Bottom** command to move to the end of the display.	

Action	Result
Search the Display: Type **s** to select the Search command. At the prompt, type the desired pattern and press **Enter**. Print the Display: Type **p** to select the Print command. At the prompt, type **f** to print the whole file or **s** to print the screen and press **Enter**.	All records of the given pattern on that page highlight. There is a pause while the material is sent to the printer. Then, the command line returns.
To exit the display, type **q** (quit).	The Patient DID Numbers screen redisplays, and the cursor is positioned on the command line.

Print Patient DID Numbers

Use the **Print** command on the Patient DID Number screen to print all or part of the Patient DID Numbers in the database.

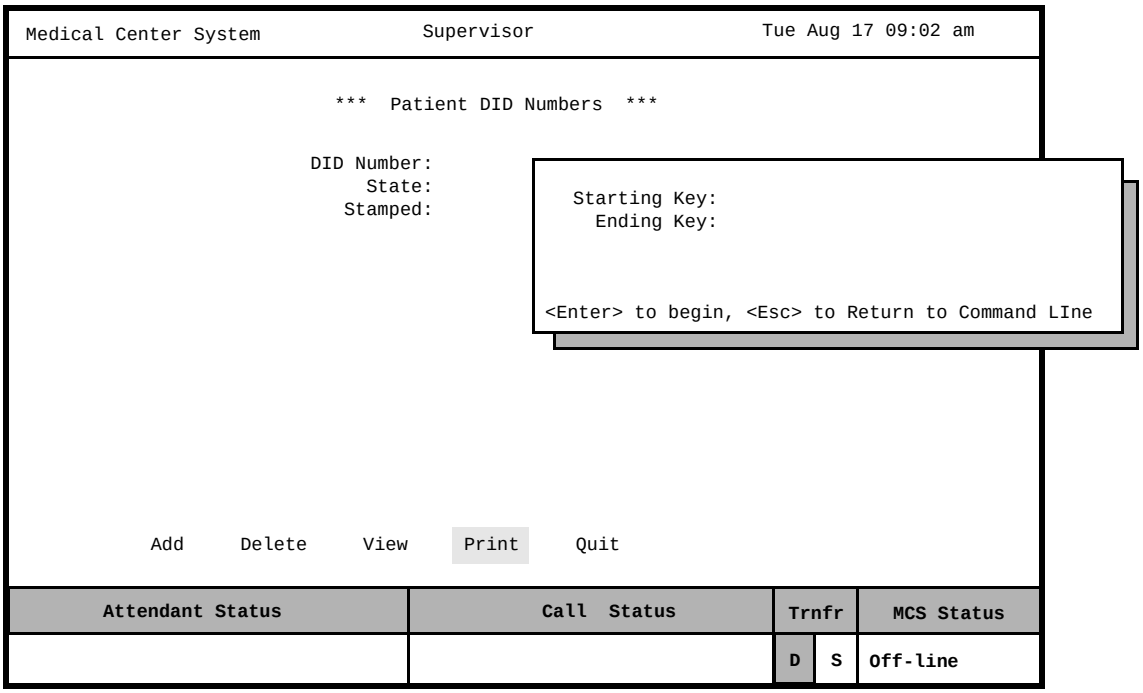

Figure 7-14 Print Patient DID Numbers

Procedure

Action	Result
Type **p** to select the Print command.	A window displays with prompts for the starting and ending keys for the search range.
To specify the range of records to be printed, type the first record value and press **Enter**, and type the last and press **Enter**.	All records within the given range are sent to the printer, and the cursor is positioned on the command line.

Outstanding RSC Requests

Use the **Outstanding RSC Requests** option on the MCS System Administration menu to manage RSC requests that were previously sent unsuccessfully to the PBX and were entered into the database of outstanding RSC requests as a result.

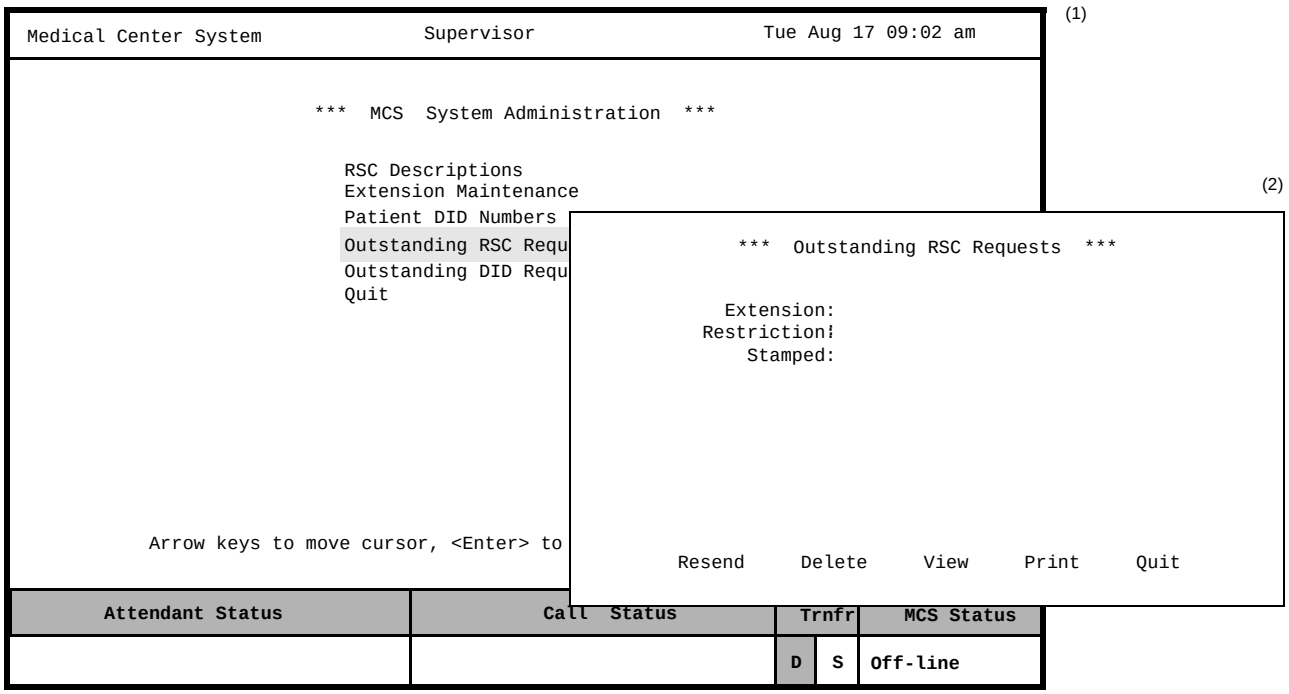

Figure 7-15 Outstanding RSC Requests

Outstanding RSC Database

If an error occurs during an attempt to send a restriction class message to the PBX, the RSC message is entered automatically into the database of outstanding RSC requests. These outstanding requests remain in this database until the supervisor indicates their disposition through this option.

Procedure

Action	Result
On the MCS System Administration menu, type **o** to select the Outstanding RSC Requests option.	The Outstanding RSC Request screen displays.
Refer to the following pages for descriptions of each command on the Outstanding RSC Requests screen.	
To exit the Outstanding RSC Requests screen, type **q** (quit).	The MCS System Administration menu displays.

Resend an RSC Request

Use the **Resend** command on the Outstanding RSC Requests screen to send an outstanding restriction class message to the PBX that could not be sent previously.

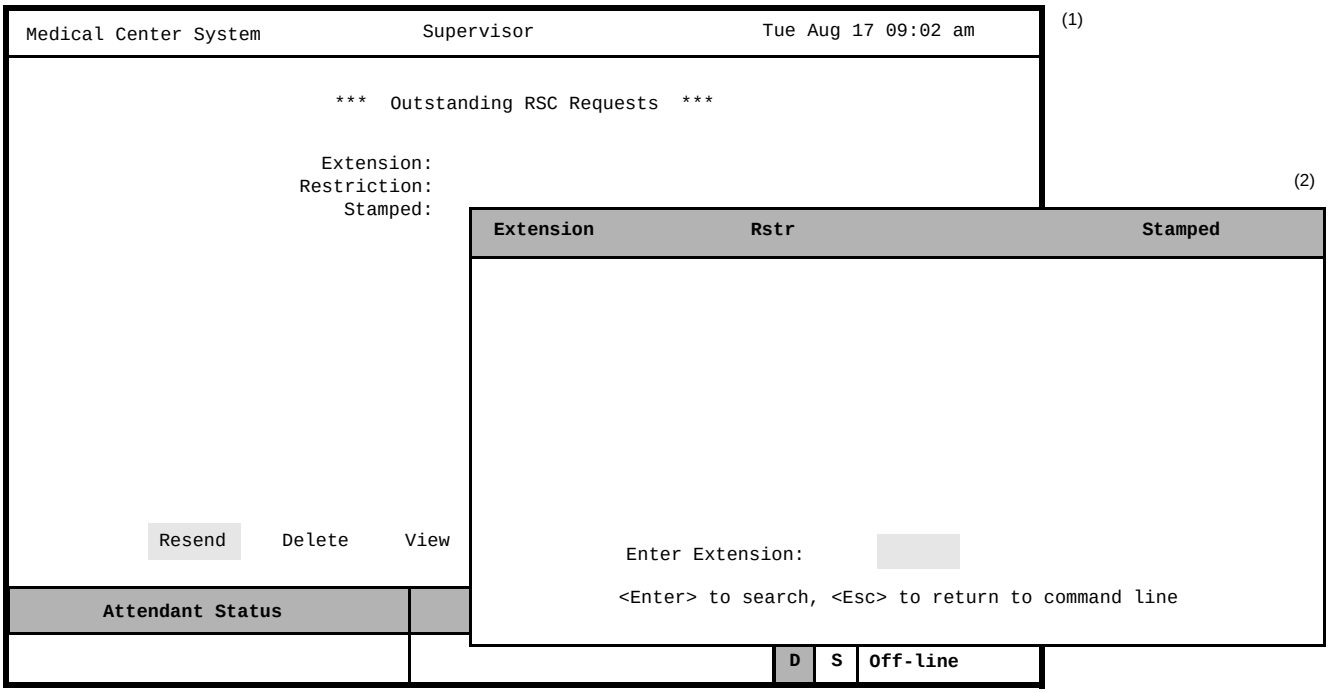

Figure 7-16 Resend Outstanding RSC Request

Procedure

Action	Result
Type **r** to select the **Resend** command. (1)	An extension number entry field displays at the bottom of the screen, and a highlighted heading displays at the top of the screen. (2)
Type part or all of the extension number for which the RSC request was originally sent to the PBX. To display all the outstanding RSC requests, press **Enter** when the cursor is on the blank entry field.	The matching extensions display.
Using the arrow keys, move the highlight to the desired extension and press **Enter** to resend the RSC request to the PBX.	The RSC request is sent, the Outstanding RSC Request screen displays, and the cursor is positioned on the command line.

Delete an RSC Request

Use the **Delete** command on the Outstanding RSC Requests screen to remove an RSC request from the outstanding RSC file.

Note: *Use this command if you have removed the extension.*

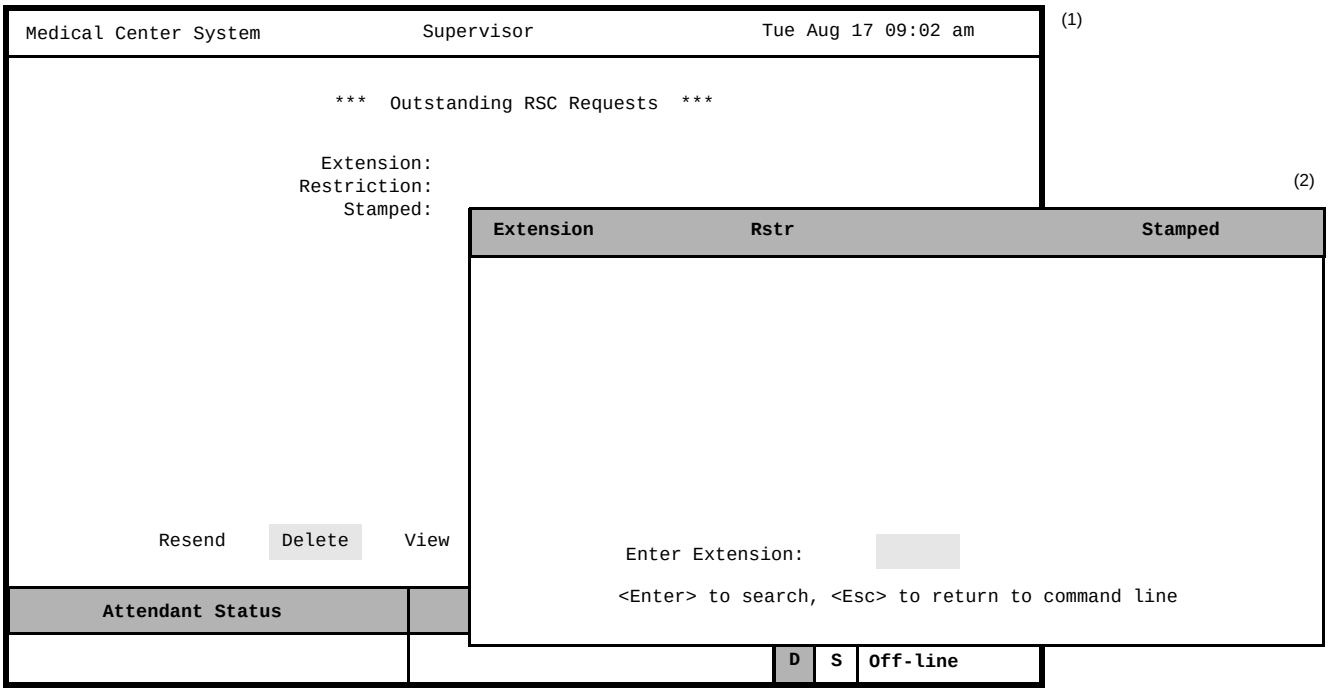

Figure 7-17 Delete Outstanding RSC Request

Procedure

Action	Result
Type **d** to select the Delete command. (1)	An extension number entry field displays at the bottom of the screen, and a highlighted heading displays at the top of the screen. (2)
Type all or part of the extension number for which the RSC request was originally sent to the PBX. To display all of the outstanding RSC requests, press **Enter** on the blank entry field.	The matching extensions display.
Using the arrow keys, move the highlight to the desired extension and press **Enter**.	The message “Do you want to delete this? (Y/N)” displays at the bottom of the screen.
Type **Y** and press **Enter** to confirm the deletion; type **N** and press **Enter** to cancel it.	If the deletion is confirmed, the word “Deleted” displays in the Attendant Status Window. “Record not deleted” displays if the deletion was cancelled. The cursor is positioned on the command line.

View Outstanding RSC Requests

Use the **View** command on the Outstanding RSC Requests screen to display outstanding RSC requests for on-screen viewing or printing.

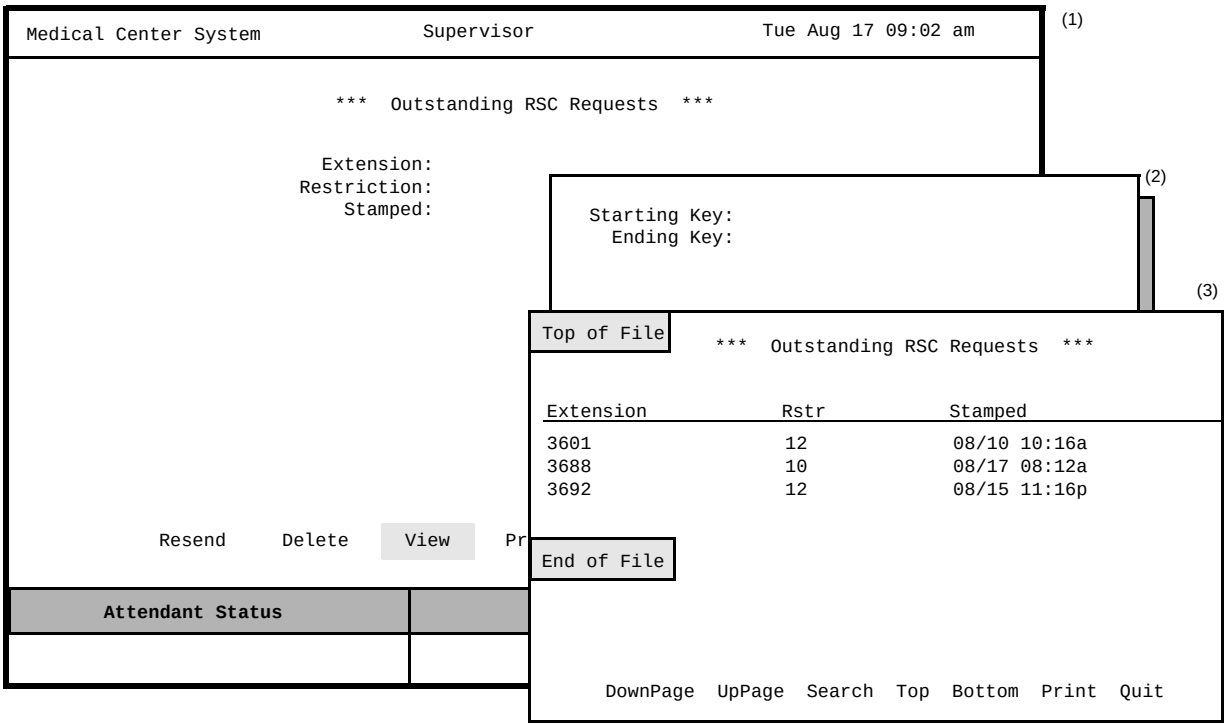

Figure 7-18 View Outstanding RSC Requests

Procedure

Action	Result
Type **v** to select the View command. (1)	A window displays prompts for the starting and ending keys for the search range. (2)
Type the starting extension number and the ending extension number, pressing **Enter** after each.	All records within the given range display.
Use the **DownPage** command to move forward one page, the **UpPage** command to move back one page, the **Top** command to move to the beginning of the display, and the **Bottom** command to move to the end of the display.	
Search the Display: Type **s** to select the Search command. At the prompt, type the desired pattern and press **Enter**. Print the Display: Type **p** to select the Print command. At the prompt, type **f** to print the whole file or **s** to print the screen and press **Enter**.	All occurrences of the given pattern on that page are highlighted. There is a pause while the material is sent to the printer. Then the cursor is positioned on the command line.
To exit the Outstanding RSC Request display, type **q** (quit).	The Outstanding RSC Requests screen displays, and the cursor is positioned on the command line.

Print Outstanding RSC Requests

Use the **Print** command on the Outstanding RSC Request screen to print all or part of the outstanding RSC requests in the database.

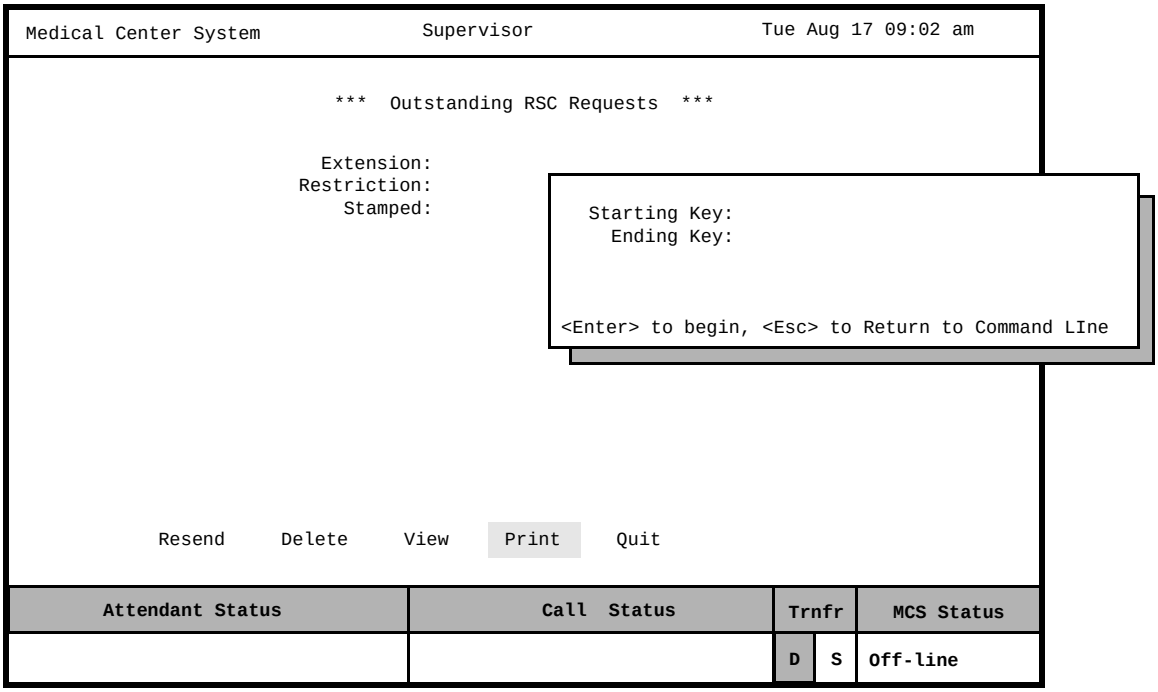

Figure 7-19 Print Outstanding RSC Requests

Procedure

Action	Result
Type **p** to select the Print command.	A window displays with prompts for the starting and ending keys for the search range.
Type the first record value and press **Enter**, and type the last and press **Enter**.	All records within the given range are sent to the printer, and the cursor is positioned on the command line.

Outstanding DID Requests

Use the **Outstanding DID Requests** option on the MCS System Administration menu to manage DID requests that were unsuccessfully sent to the PBX and were entered into the database of outstanding DID requests as a result.

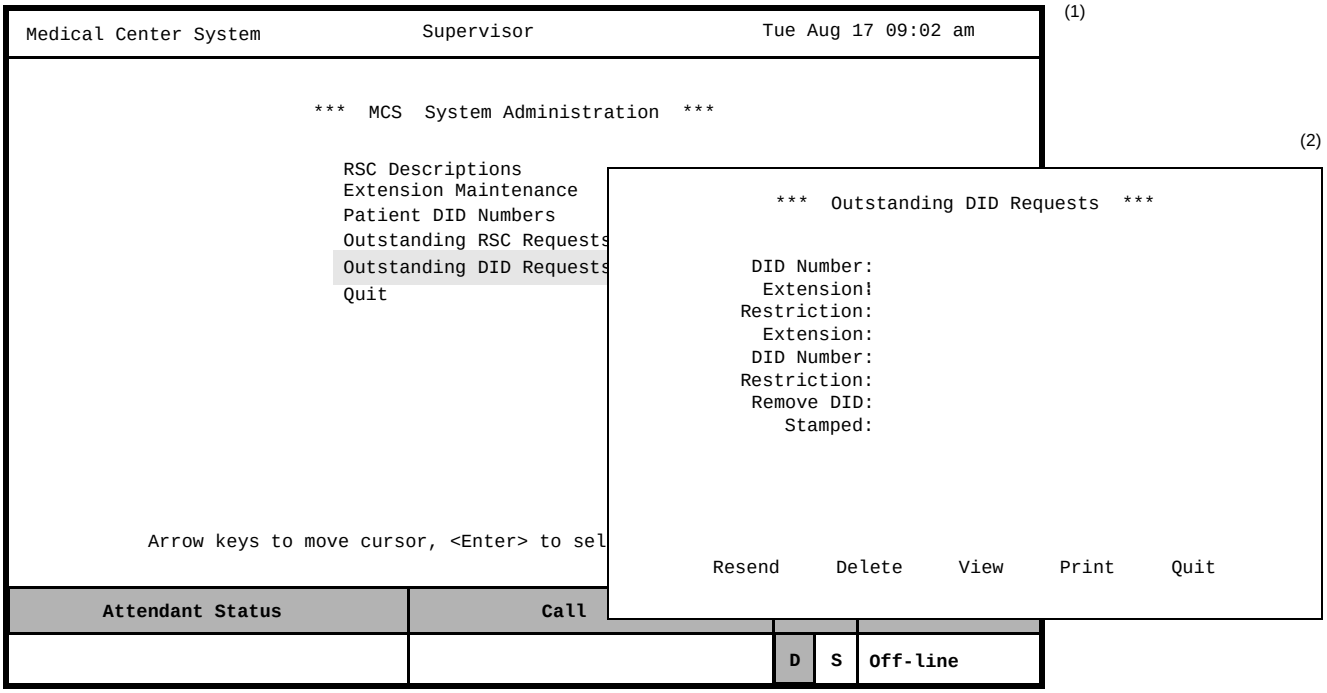

Figure 7-20 Outstanding DID Requests

Outstanding DID Database

If an error occurs when a message about a DID change is sent to the PBX, the message is entered automatically into the database of outstanding DID requests. These outstanding requests remain in this database until the supervisor indicates their disposition through this option.

Display Fields

The records in the DID display show whether the DID number involved in the transaction is to be made available for future use (removed) or is to remain active. This table reflects the Logical/Physical table used by the PBX. There are two sets of DID numbers and two sets of extensions listed per entry. The first set indicates where the DID number is to be routed, and the second set indicates what happens to the old extension, such as restoring it to a discharged restriction and clearing the patient's DID from its table.

Procedure

Action	Result
On the MCS System Administration menu, type **u** to select the Outstanding DID Requests option.	The Outstanding DID Requests screen displays.
Refer to the following pages for a description of each command on the Outstanding DID Requests screen.	
To exit the Outstanding DID Requests screen, type **q** (quit).	The MCS System Administration menu displays.

Resend a DID Request

Use the **Resend** command on the Outstanding DID Requests screen to send an outstanding DID message to the PBX that could not be sent previously.

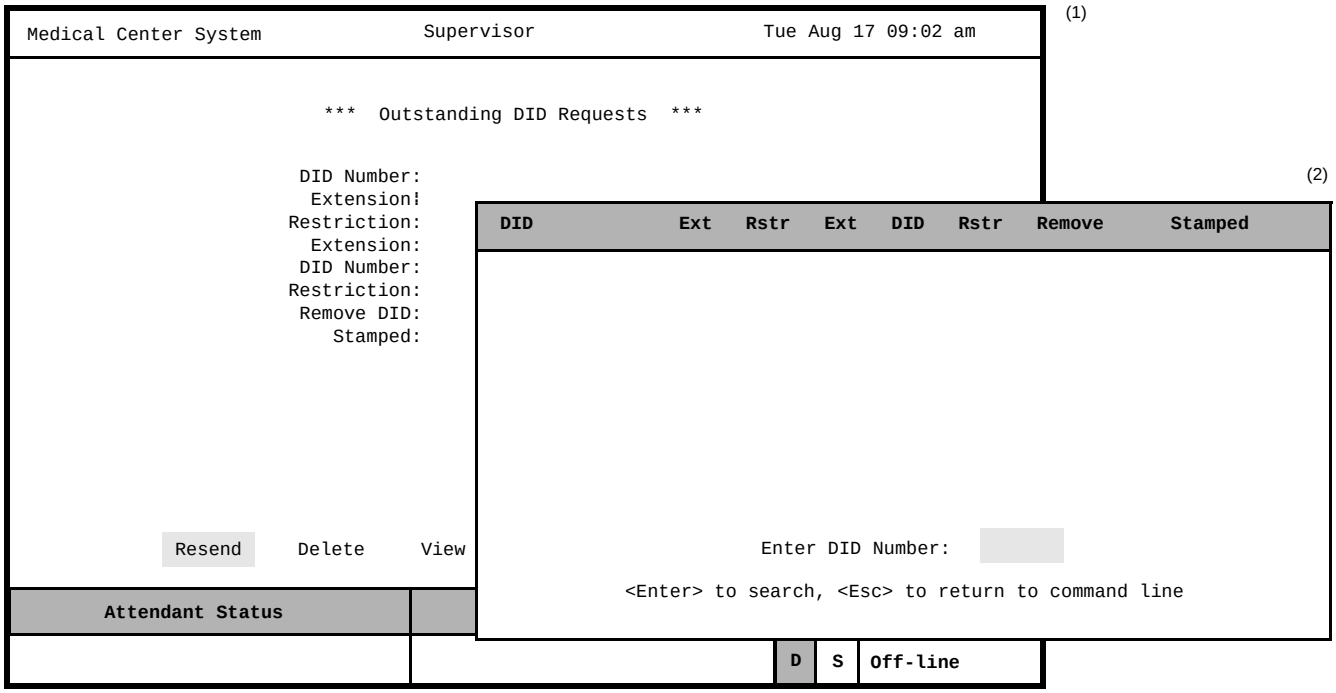

Figure 7-21 Resend Outstanding DID Request

Procedure

Action	Result
Press **Enter** to select the Resend command. (1)	An extension number entry field displays at the bottom of the screen, and a highlighted heading displays at the top of the screen. (2)
Type the DID number in the entry field and press **Enter**. To display all the outstanding DID requests, press **Enter** when the cursor is on the blank entry field.	The matching DID requests display.
Using the arrow keys, move the highlight to the desired DID request. Press **Enter** to resend the request to the PBX.	The DID request is sent, the Outstanding DID Requests screen displays, and the cursor is positioned on the command line.

Delete a DID Request

Use the **Delete** command on the Outstanding DID Requests screen to remove a DID request from the file of outstanding DID requests.

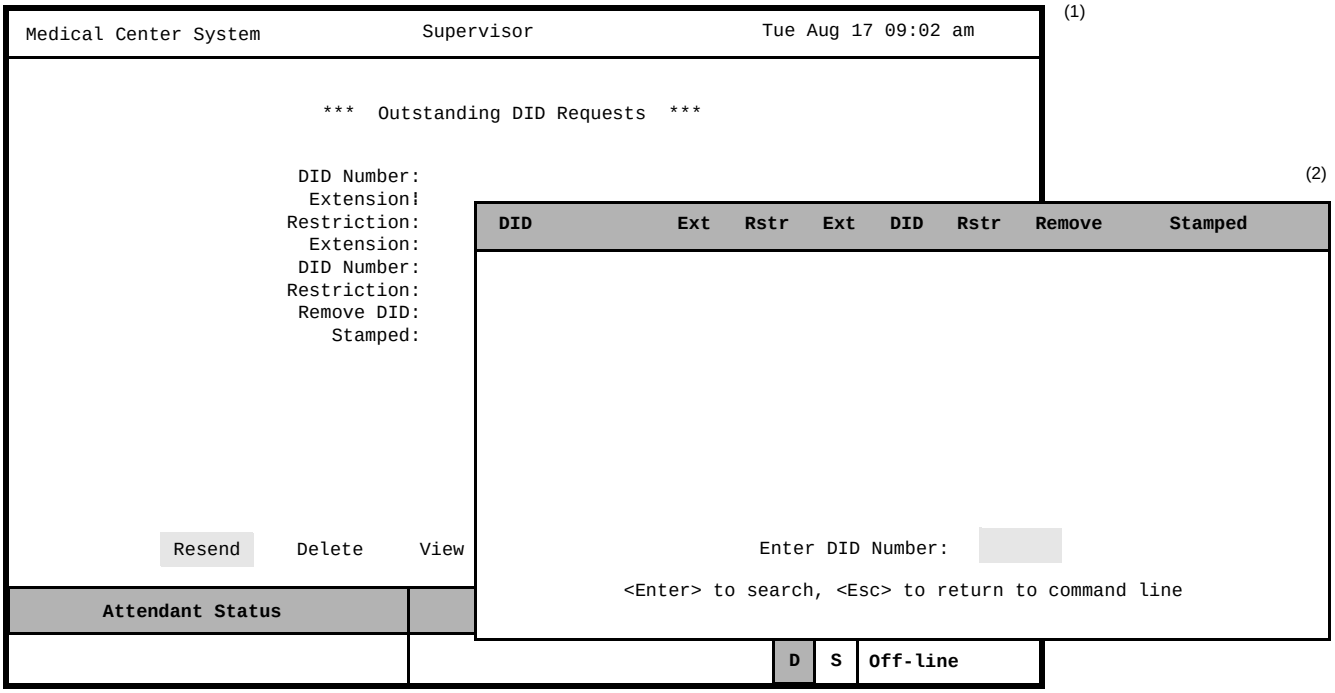

Figure 7-22 Delete Outstanding DID Request

Procedure

Action	Result
Type **d** to select the Delete command. (1)	An extension number entry field displays at the bottom of the screen, and a highlighted heading displays at the top of the screen. (2)
Type the DID number to the entry field and press **Enter**. To display all the outstanding DID requests, press **Enter** when the cursor is on the blank entry field.	The matching DID requests display.
Using the arrow keys, move the highlight to the desired DID request and press **Enter**.	The message “Do you want to delete this? (Y/N)” displays at the bottom of the screen.
Type **Y** and press **Enter** to confirm the deletion. Type **N** and press **Enter** to cancel it.	If deletion is confirmed, the word “Deleted” displays in the Attendant Status Window. “Record not deleted” displays if the deletion was cancelled. The cursor is positioned on the command line.

View Outstanding DID Requests

Use the **View** command on the Outstanding DID Requests screen to display outstanding DID requests for viewing or printing.

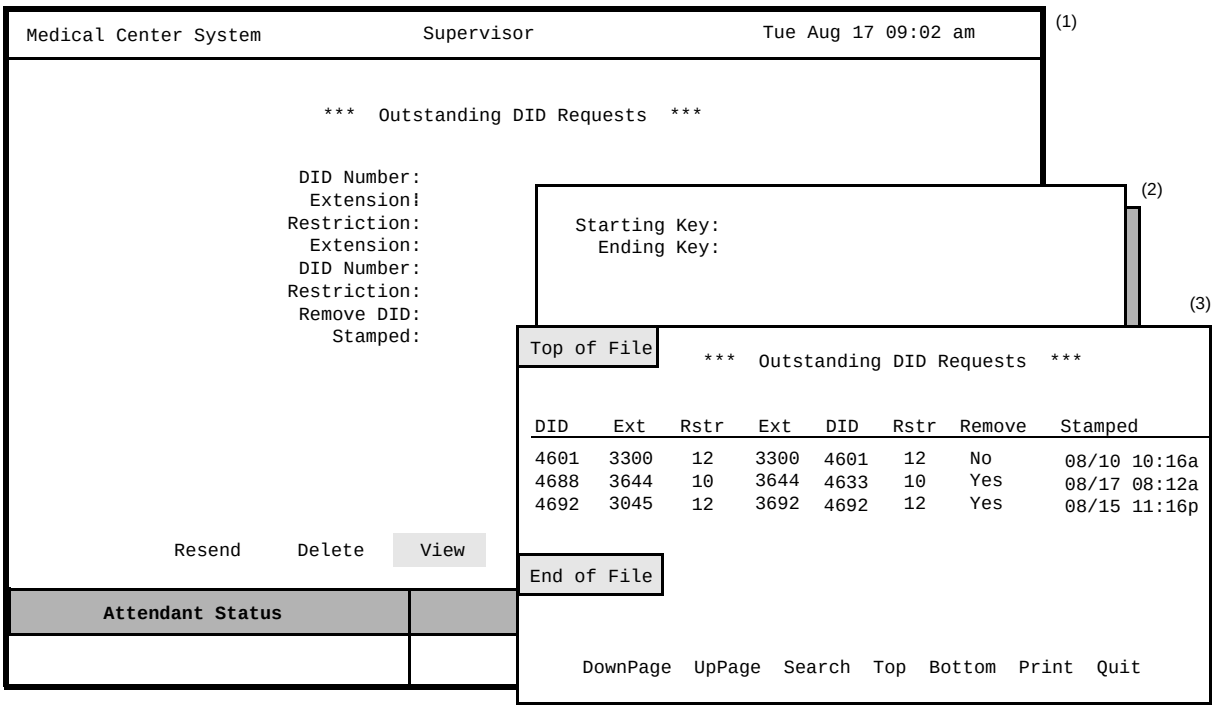

Figure 7-23 View Outstanding DID Requests

Procedure

Action	Result
Type **v** to select the View command. (1)	A window displays prompts for the starting and ending keys for the search range. (2)
Type the starting extension number and the ending extension number, pressing **Enter** after each.	All records within the given range display for viewing.
Use the **DownPage** command to move forward one page, the **UpPage** command to move back one page, the **Top** command to move to the beginning of the display, and the **Bottom** command to move to the end of the display.	

Action	Result

Search the Display: Type **s** to select the Search command. At the prompt, type the desired pattern and press **Enter**. Print the Display: Type **p** to select the Print command. At the prompt, type **f** to print the whole file or **s** to print the screen and press **Enter**.	All occurrences of the given pattern on that page highlight. There is a pause while the material is sent to the printer. Then the cursor is positioned on the command line.
To exit the Outstanding DID Request display, type **q** (quit).	The Outstanding DID Requests screen displays, and the cursor is positioned on the command line.

Print Outstanding DID Requests

Use the **Print** command on the Outstanding DID Request screen to print all or part of the outstanding DID requests in the database.

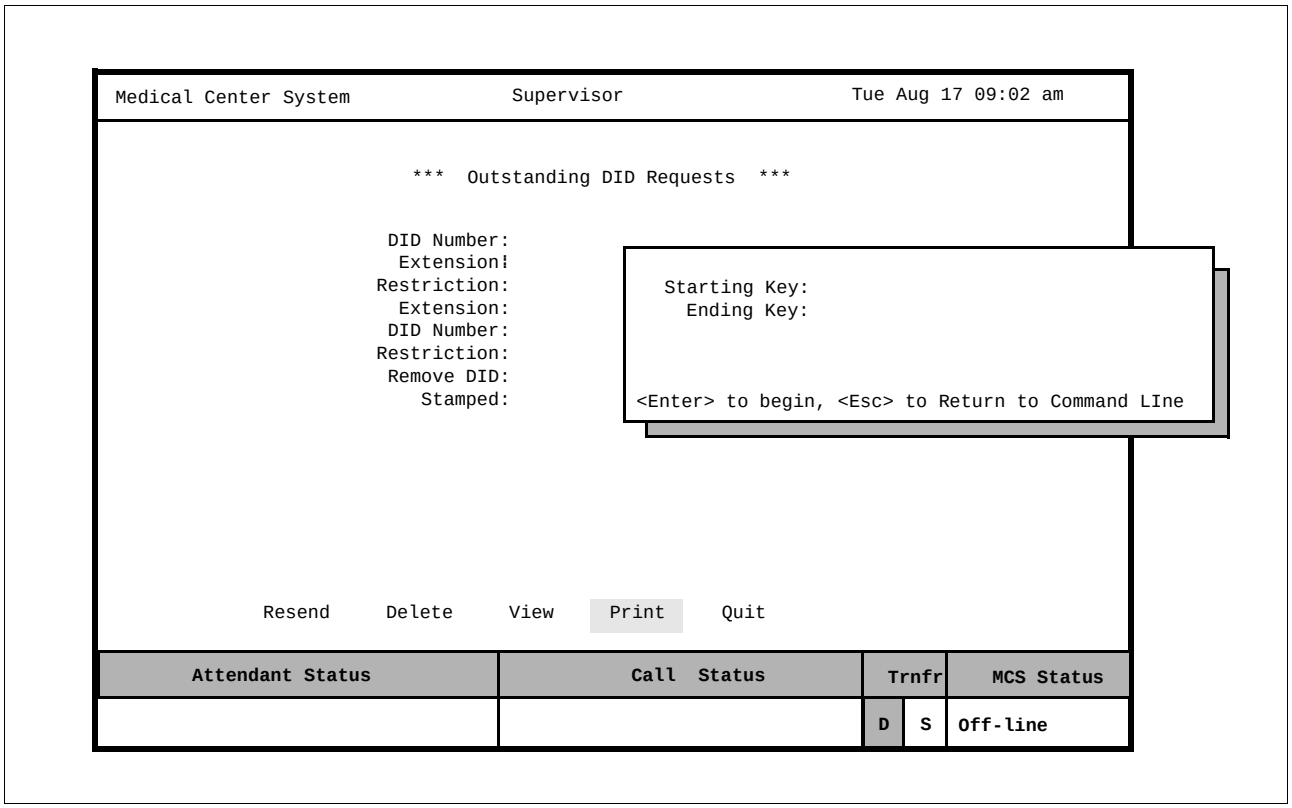

Figure 7-24 Print Outstanding DID Requests

Procedure

Action	Result
Type **p** to select the Print command.	A window displays with prompts for the starting and ending keys for the search range.
Type the first record value and press **Enter**, and type the last and press **Enter**.	All records within the given range are sent to the printer, and the cursor is positioned on the command line.

Chapter 8 CONFIGURATION MANAGEMENT

Use the **Configuration Management** option on the Main Menu to change or print configuration parameters that are under supervisor control.

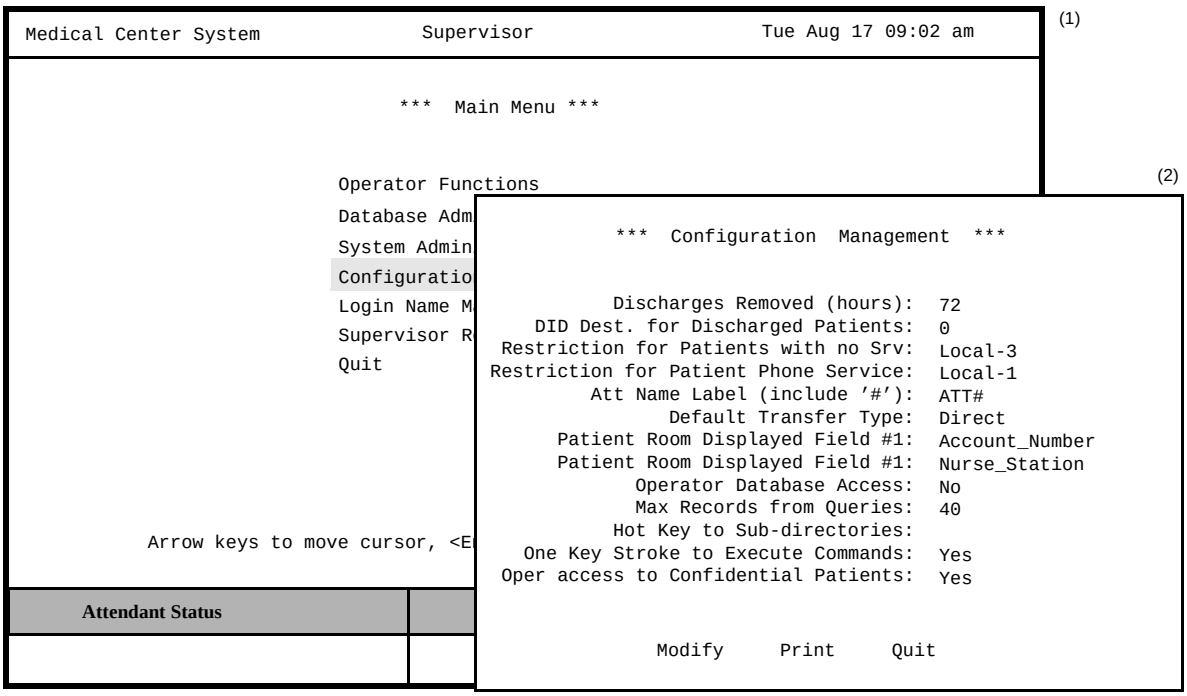

Figure 8-1 Platform Management

Displayed Parameters

These configuration parameters give the supervisor some choices in managing the system. The supervisor can alter aspects of operator functions and the operator screen display. Figure 8-1 contains the default values entered during installation of the MCS. Enter a zero value in a time-out field to turn off the timer.

Procedure

Action	Result
On the MCS Main Menu, type **c** to select the Configuration Management option.	The Configuration Management screen displays.
To Change the Parameters: Type **m** to select the Modify command. Use the arrow keys to move among fields and press **Enter** after each entry to change the fields, as described below:	
Field Name Discharges Removed	Definition Amount of time in hours that a patient room record remains in the MCS database once it has been changed to a status of Discharged. When this timeout occurs, MCS automatically removes the record from the database. This timeout also affects DID numbers that have been offered but for which there has not been a patient record to change their status to Pending or Active.
DID Dest. for Discharged Patients	The number that is called when calls arrive for discharged patients who still have DIDs.
Restriction for Patient with no Srv	The description of the RSC value to which the phone is set for a patient who has not contracted for phone service. The value described here is found through the RSC Description option on the MCS System Administration menu.
Restriction for Patient Phone Service	The description of the RSC value to which patient phone service is set. The value corresponding to this description is found through the RSC Description option on the MCS System Administration menu.
Att Name Label	Name by which all attendant stations are known. The name can be anything as long as it contains a # sign that MCS replaces with the attendant number. **Note:** *The name of the supervisor station is static and does not need to be set here.*
Default Transfer Type	Default type of transfer displayed on the screen and performed through the Directory Assistance window. (Direct or screen)

Action	Result
To Change the Parameters: (Cont) Field Name Patient Room Displayed Field (1 & 2)	Definition The fields displayed in the two extra lines in the Source Caller window from among all of the fields in the patient room record. When the cursor is moved to this field, a pop-up window displays a list of fields that may be selected for the Source Caller window. Use the space bar to position the highlight on the desired field and press **Enter** to select it.
Operator Database Option	Whether an operator is allowed access to the Database Administration option from the MCS Main Menu, using the following options: Yes: Type an operator password to display the MCS Main Menu. No: Type an operator password to display the Operator Functions screen without passing through the MCS Main Menu first.
Max Records from Queries	The largest number of records that are ever displayed for the entered pattern when a search has been performed. This value is used to prevent accidental searches of the whole database that might take several minutes.
Hot Key to Sub-directories	The key that the operator can type as the first character of the name or room in the Directory Assistance lookup to display a list of the sub-directories, or types of records, in the database. Select a specific type of record for a faster and more efficient search. **Note:** *The character **@** will cause the sub-directory look-up screen to appear immediately after the Directory function is activated.*

Action	Result
To Change the Parameters: (Cont) Field Name One Key Stroke to Execute Commands Oper access to Confidential Patients	 Definition Whether choice of menu options and commands is made by pressing the highlighted letter only (Yes) or by pressing the highlighted letter and then pressing **Enter** (No). Whether operators may view the listings of confidential patients when using Directory Assistance.
To Print the Parameters: Type **p** to select the Print command.	The displayed parameters are sent to the printer configured for the MCS.
To exit the display, press **Esc** to return to the command line and type **q** (quit).	The MCS Main Menu displays.

Chapter 9 LOGIN NAME MAINTENANCE

Use the **Login Name Management** option on the MCS Main Menu to add, delete, and modify login names and passwords and to print and view operator names. Login names are used when generating all reports in the MCS.

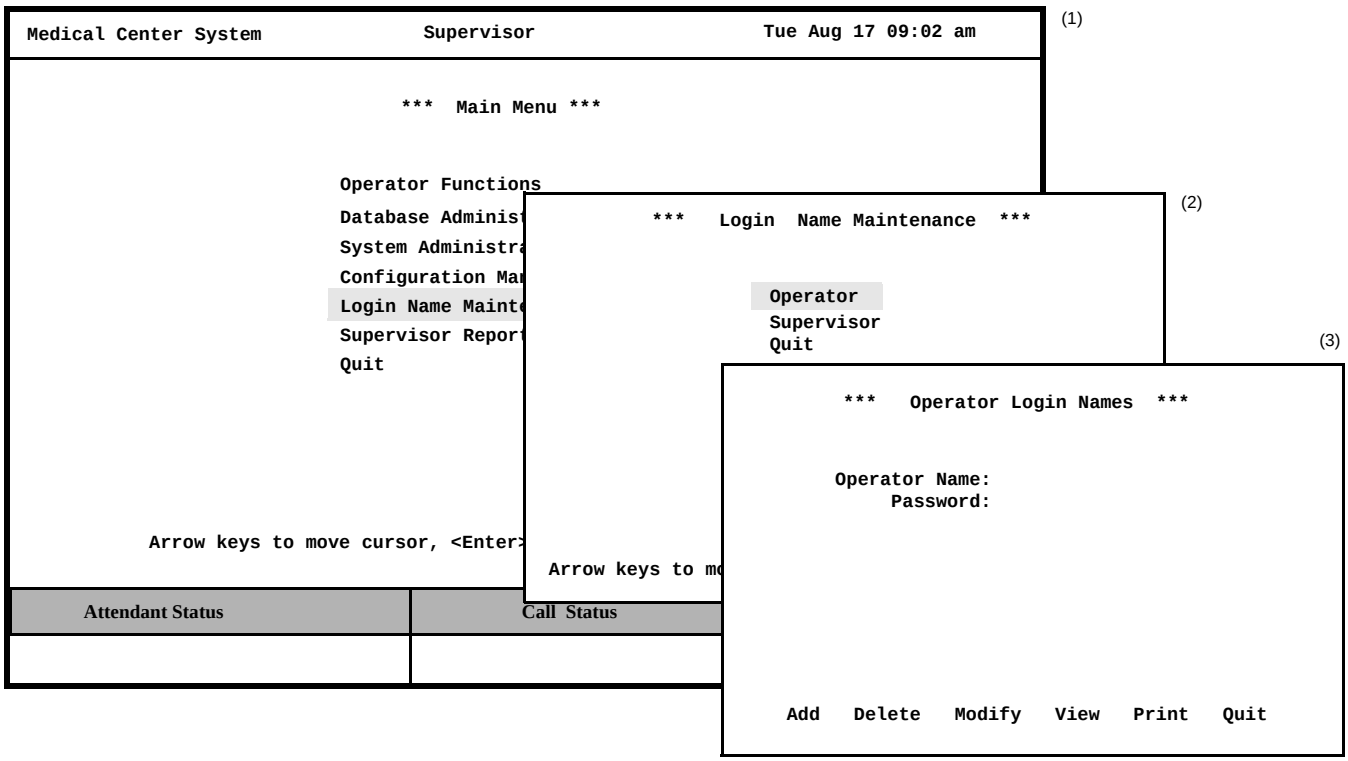

Figure 9-1 Login Name Maintenance

Option Overview

You can use this option to alter names and/or passwords for the operators and the supervisor. Select the **Operator** option to display prompts for the operator name and the password for that operator. Select the **Supervisor** option to display prompts for entry of the supervisor name and the password for the supervisor. All internal MCS operator names and passwords must be entered via this option. Any number of operator names can be added, deleted, changed, viewed, and printed. However, only one supervisor login name and password may exist at any time. MCS is installed with a default supervisor login name and password; thus, the only commands available on the Supervisor Login Name screen are **Modify** and **Quit**. Both of the supervisor commands function in the same manner as they do on the Operator Login Name screen.

Search Function

Unlike other search functions in MCS, the operator name must be entered in full. MCS does not retrieve and display operator names from partial entries.

View Function

The **View** command displays a list of all current attendant login names that are stored in MCS. This list can also be printed.

Procedure

The following procedure describes both operator and supervisor login name functions. Remember, while operator login names can be added, deleted, changed, viewed, or printed, the single supervisor login name can only be changed, as shown in the procedure below.

Action	Result
On the MCS Main Menu, type **l** to select the Login Name Maintenance option.	The Login Name Maintenance screen displays for selection of operator or supervisor login name.
Type the highlighted letter of the desired option.	The login name screen for the chosen option displays. If you selected *Operator*, the command line displays options to add, delete, modify, view, or print. If you selected Supervisor, the command line displays only the option to modify.
To Add an Operator Type **a** to select the Add command.	The cursor is positioned on the Operator Name field.
Type the full name or number of the new operator (up to eight alphanumeric characters) and press **Enter**. Then, type the password (up to ten alphanumeric characters) and press **Enter**.	The message “Do you want to insert this? (Y/N)” displays.
Type **Y** and press **Enter** to save the operator addition. Type **N** to cancel it.	The notation “Inserted” or “Record not inserted” displays under Attendant Status. The cursor is positioned on the command line.

Action	Result
To Delete an Operator Type **d** to select the Delete command.	The cursor is positioned on the Operator Name field.
Type the name or number of the operator to be deleted from the database and press **Enter**.	The message “Do you want to delete this? (Y/N)” displays.
Type **Y** and press **Enter** to confirm the deletion. Type **N** and press **Enter** to cancel it.	The notation “Deleted” or “Record not deleted” displays under Attendant Status and the cursor is positioned on the command line.
To Change an Operator or Supervisor Login Type **m** to select the Modify command.	The cursor is positioned on the Operator Name field.
Type the full name or number of the operator whose login is to be changed and press **Enter**.	If the entry is valid, the cursor moves to the password field for data entry.
Make a new entry to the password field as required and press **Enter**.	A message displays on the command line for confirmation before saving the changes.
Type **Y**(es) to save the changes or **N**(o) to cancel the changes. Press **Enter** after either entry.	
To View All Operator Login Names Type **v** to select the View command.	The Operator Login Names screen displays the list of operators by name.
Use the **DownPage** command to move forward through the pages, the **UpPage** command to move back through the pages, the **Top** command to move directly to the beginning of the list, and the **Bottom** command to move directly to the end of the list.	

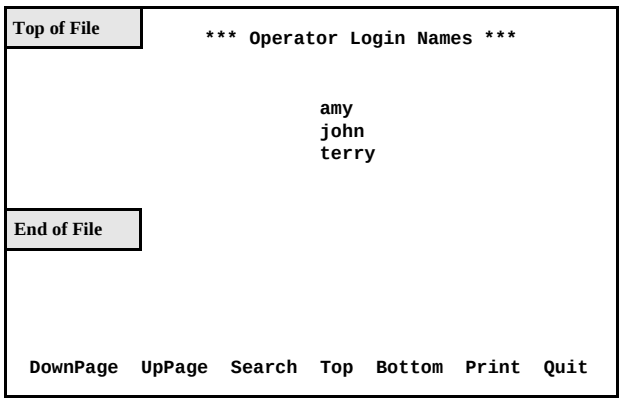

Figure 9-2 View Operator Login Names

Action	Result
Search the Display: Type **s** to select the **Search** command. At the prompt, type the full name or number of the desired operator and press **Enter**.	The display is moved as necessary to show the desired name or number in highlight.
Print the Display: Type **p** to select the Print command. At the prompt on the command line, type **f** to print the whole file or **s** to print just the screen and press **Enter**.	There is a pause while the file or screen is sent to the printer. The cursor is positioned on the command line.
To Print the Displayed Login Name and Password Type **p** to select the Print command.	The Operator Name and Password currently displayed is sent to the printer.
To exit the Operator Login Names screen, type **q** (quit).	The Login Name Maintenance screen displays and the cursor is positioned on the command line.
To exit the Login Name Maintenance screen, type **q** (quit).	The MCS Main Menu displays.

Chapter 10 SUPERVISOR REPORTS

Use the **Supervisor Reports** option on the MCS Main Menu to view daily statistics on operator activity. Error messages are added to the end of each day's file for easy access and display.

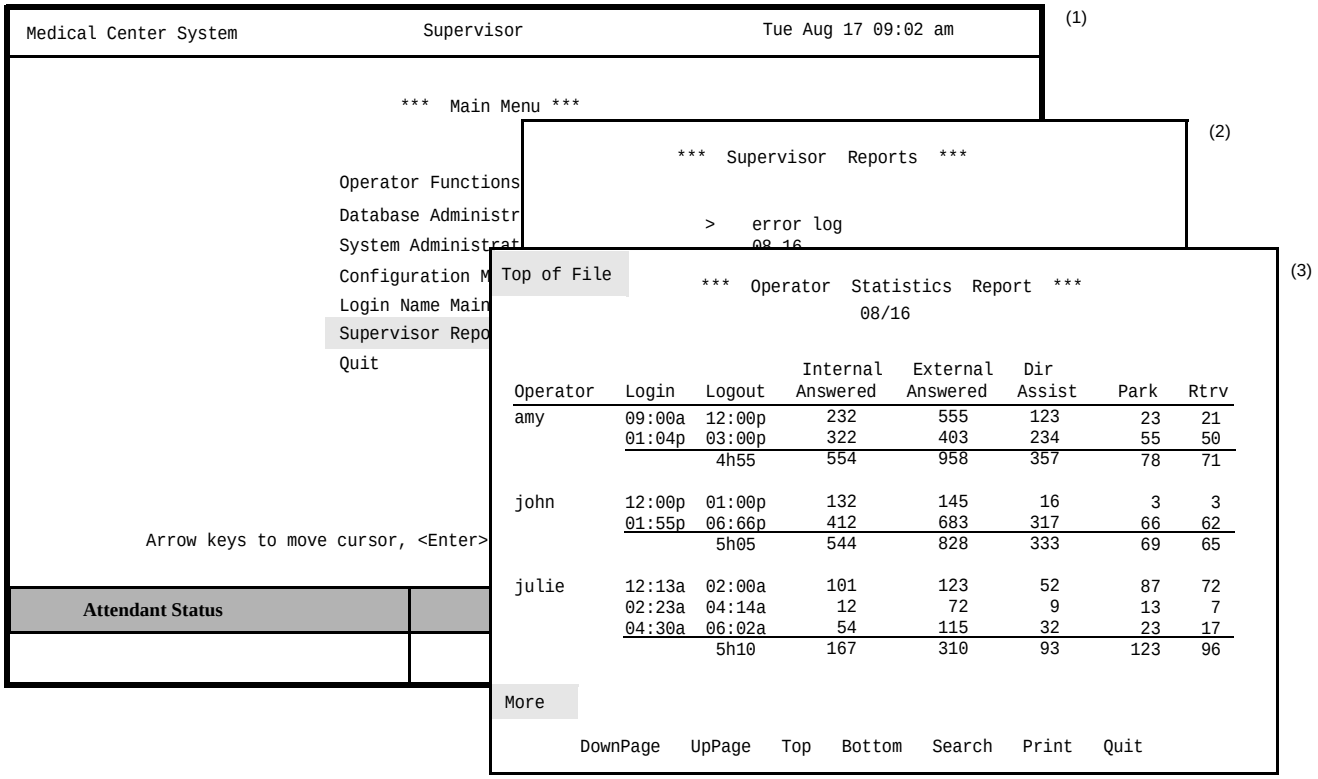

Figure 10-1 Supervisor Reports

Date-Stamped Files

Select this option to display a menu of date-stamped files for viewing. The dates show the period of time covered by the statistics in the file. Each night at midnight the statistics gathered since the previous night at midnight are saved in a file named with the month and day of those statistics. For example, the statistics gathered from August 15 at midnight until August 16 at midnight are stored in a file named *08.16*. The current day's statistics are not available for viewing until midnight, when they are formatted and stored. These files are stored in the system for two weeks after their date-stamp. Then, they are automatically deleted.

Operator Statistics

When a report is chosen for viewing, the following statistics are displayed for each operator:

Login	The time that the operator logged into the MCS and the Operator Functions screen.
Logout	The time that the operator logged out of the Operator Functions screen.
Internal Answered	The number of internal calls answered by the operator while in On-Line or Park-off status.
External Answered	The number of external calls answered by an operator while in On-Line or Park-off status.
Dir. Assist	The total number of directory assistance transfers performed by this operator.
Park	The total number of calls parked by this operator.
Rtrv.	The total number of parked calls retrieved and connected to the paged party by this operator.

Totals are shown, by operator, for logged-in time and for the remaining columns.

Procedure

Action	Result
On the MCS main Menu, type **u** to select the Supervisor Reports option. (1)	The Supervisor Reports screen displays a list of dates, each representing a daily report of operator activity. (2)
Select the desired report date and press **Enter**.	The report displays. (3)
Use the **DownPage** command to move forward through the pages, the **UpPage** command to move back through the pages, the **Top** command to move directly to the beginning of the display, and the **Bottom** command to move directly to the end of the display. Search the Display: Type **s** to select the Search command. Type a pattern of letters and/or numbers that contains up to eight characters. Then press **Enter**. Print the Display: Type **p** to select the Print command. At the prompt on the command line, type **f** to print the whole file or **s** to print just the screen and press **Enter**. To exit the selected report display, type **q** to select the **Quit** command.	 Every occurrence of the pattern highlights in the displayed report. There is a pause while the file or screen is sent to the printer, and the cursor is positioned on the command line. The Supervisor Reports menu displays.
To exit the Supervisor Reports menu, press **Esc**.	The MCS Main Menu displays.

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Chapter 11 PROCESS AND ERROR MESSAGES

This chapter contains a listing of the messages that may be displayed throughout MCS. A brief description follows each message. Some include required recovery maneuvers.

 # more source caller record(s). attwinmsg

More source callers are associated with this extension. Press up- and down-arrow keys to view the list.

<Extension> is using RSC <RSC value>, description has been restored. attwinmsg

MCS tried to clear the description of a restriction that is being used for an extension.

A record already exists for this group and time. Ioerr

It is not possible to schedule two changes at the same time for the same group.

Account field cannot be empty. attwinmsg

An attempt has been made to leave the account field blank.

Account number is not unique. attwinmsg

A patient has already been assigned this account number. Use another.

Age is all numeric or it ends in 'm' or 'd'. attwinmsg

Do not leave the age field blank. Use the pound sign (#) followed by an 'm' for months or 'd' for days, if needed.

Alert from <attendant #>. attwinmsg

This message is displayed on the supervisor's console, before its D^{term} is answered, after an operator has given a supervisor alert.

Alerting the supervisor. attwinmsg

This message confirms that the supervisor is being alerted.

Apinform erred on server, see APM log. errmsg

An attempt to get OAI application information has failed. Refer to the APM error log through the APM Operations Menu.

APM send error. Cmnerr

The administrator should check the APM log to see that the Monitor and Server components are both initialized.

Apmsend error, see APM log records. errmsg

An error occurred while a message was being sent to an OAI application. Refer to the APM error log on the APM Operations Menu. (This is displayed as "Apmsend error, see APM log records" in the error log. Refer to the APM error log through the APM Operations Menu.)

Attempting to call <extension>.

This message displays the extension number when a call is being attempted.

Attendant Id must be between 1 and <Id Limit>. attwinmsg

This message gives the range within which the attendant ID number must fall. This means that the entered ID is outside the range.

Attendant name must be unique. DBermsg

This name has already been entered. Someone may have added it before it was added here.

Bed must be between 0 and 2. attwinmsg

Entered bed number is not acceptable. 0 means private; 1 and 2 mean semi-private room.

Bed not entered for rooms without extensions. attwinmsg

This is a reminder that if a room is entered without an extension, no bed is to be entered.

Calling <extension>. attwinmsg

The listed extension has been successfully re-dialed.

Calling beeper. attwinmsg

The beeper has been called.

Calling emergency number. attwinmsg

After an emergency notification, the number to the selected emergency team or agency is being called.

Cannot assign another bed to a private room. attwinmsg

An attempt has been made to add a bed assignment to a room that already has a bed ‘0’, meaning a private room.

Cannot assign bed 0 to a non-private room. attwinmsg

An attempt has been made to assign a ‘0’ bed to a room that has previously been assigned as non-private.

Cannot delete a DID group assigned within a DID schedule. Ioerr

Removing a DID group with a corresponding schedule is prohibited. Remove the scheduled changes for this DID group, and then retry.

Cannot delete an RSC group if it used within an RSC schedule. Ioerr

Removing an RSC group with a corresponding schedule is prohibited. Remove the scheduled changes for this RSC group, and then retry.

Cannot park another attendant. attwinmsg

MCS does not support parking of an attendant by a fellow attendant.

Checking that RSC <RSC value> is not being used, one moment. attwinmsg

This is a status message that is displayed while changing an RSC description.

Complete **attwinmsg**

Directory assistance or call parking succeeded.

Complete, but cannot release you. **attwinmsg**

Manually press release or cancel.

Conversation monitoring ended. **attwinmsg**

The supervisor who was monitoring the conversation hung up the D^{term} and is no longer monitoring.

Database Errors: **errmsg**

The following errors occur in the database. The administrator should look in the MCS error log for the exact 9000 or 10000 level error. If it is in the 10000 level, the last 3 digits are the Informix error code. The first phrase below is the manner in which the message is displayed, and the second phrase is the second is the manner in which they are referred to in the error log. Each of these error statements are listed elsewhere alphabetically.

Operator Screen Display	**Error Log Display**
Error putting request in database.	Error creating MCS database [MCSdb].
Error inserting record.	Error inserting a record into the database.
DB error when finding attendant.	Error when finding attendant in database.
DB error when finding beep code.	Error when finding beeper code in database.
Database deletion error.	Error deleting a record from the database.
Directory database lookup error.	Error when doing directory lookup in database.
Error locking a record in the db.	Error locking a record in the database.
Error unlocking database record.	Fatal error unlocking database record.
Error matching an RSC in the db.	Error matching an RSC in the database.
Database error modifying record.	Error modifying a record in the database.
Err finding name of paged party.	Error when finding recalled park record in db.
Error querying the database.	Error querying the database.
DB error when finding source clr.	Error when finding source caller in database.
DB error when finding trunk.	Error when finding trunk in database.
Wrong type returned from dblookup.	Error in type returned from database lookup.
	Error building MCS database indexes [MCSdb].
	Error droppng MCS database indexes [MCSdb].
	Error rebuilding MCS database indexes [MCSdb].

Database deletion error. **errmsg**

See “Database Errors.”

Database error modifying record. **errmsg**

See “Database Errors.”

Date must be in form <mm/dd>. **attwinmsg**

Expected form is mm/dd.

Day is out of range. **attwinmsg**

The entered day is not in the month; try again.

DB error when finding attendant. **errmsg**

See “Database Errors.”

DB error when finding beep code. **errmsg**

See “Database Errors.”

DB error when finding source clr. **errmsg**

See “Database Errors.”

DB error when finding trunk. **errmsg**

See “Database Errors.”

DID group does not exist. **DBermsg**

An attempt has been made to schedule something (DID/RSC change) for a group or time index that does not exist.

DID is already in use. **attwinmsg**

This DID number is not being used by a patient, even though it has been entered for a patient.

DID is not available for use. **attwinmsg**

This DID number has not been allocated for use, even though it has been entered for a patient.

DID must be all numeric. **attwinmsg**

An attempt has been made to enter a DID that was not all numeric.

DID number does not exist. **attwinmsg**

This DID number is not in the pool; ask the administrator to add it if it is a valid number.

DID number no longer available. **errmsg**

This DID is currently in use by another patient or waiting for the configured time to be put back into the available pool.

Directory database lookup error. **errmsg**

See “Database Errors.”

Directory service not available. **errmsg**

The attempt to get the OAI application information failed. Refer to the APM error log through the APM Operations Menu. (Displayed as “Apinform errored on server, see APM log.” in error log; refer to APM error log through the APM Operations Menu.)

Emergency station is ringing. **attwinmsg**

This message is displayed after an emergency notification.

Err finding name of paged party./

Error when finding recalled park record in db. **errmsg**

See “Database Errors.”

Errno > sys_nerr. **Cmnerr**

UNIX error message is too large to print its corresponding text.

Error building MCS database indexes [MCSdb]. **errmsg**

See “Database Errors.”

Error checking use of RSC <RSC value>,
description has been restored. **attwinmsg**

A problem occurred while checking a blanked out RSC description; the previous non-blank description has been restored.

Error creating MCS database [MCSdb]. **errmsg**

See “Database Errors.”

Error deleting a record from the database. **errmsg**

See “Database Errors.”

Error droppng MCS database indexes [MCSdb]. **errmsg**

See “Database Errors.”

Error in file size expected. **Cmnerr**

This circumstance is unlikely to occur. If it does, look at the MCS error log for the filename.

Error in menu command. **errmsg**

An error occurred while the application was trying to implement a menu command such as displaying a file.

Error in multiple screen program **errmsg**

Ask the administrator to make sure that a file exists for this terminal so that screen switching is possible. (Displayed as “Error initializing multiple screen program in errlog.” in errlog; refer to APM error log through the APM Operations Menu.)

Error in type returned from database lookup. **errmsg**

See “Database Errors.“

Error inserting a record into the database. **errmsg**

See “Database Errors.”

Error locking a record in the db. /
Error locking a record in the database. **errmsg**

See “Database Errors.”

Error matching an RSC in the db /
Error matching an RSC in the database. **errmsg**

See “Database Errors.”

Error modifying a record in the database. errmsg

See “Database Errors.”

Error putting request in database. (DID) errmsg

An outstanding DID record has been inserted into the database so that when the Mcs_Monitor component is initialized, a request will be made to the PBX. See “Database Errors.”

Error putting request in database. (RSC) errmsg

An outstanding restriction class change has been inserted into the database so that when Mcs_Monitor is initialized, it will send a request to the PBX. See “Database Errors.”

Error querying the database./ Error querying the database. errmsg

See “Database Errors.”

Error rebuilding MCS database indexes [mcsdb]. errmsg

See “Database Errors.”

Error unlocking database record. errmsg

See “Database Errors.”

Error when doing directory lookup in database errmsg

See “Database Errors.”

Error when finding attendant in database. errmsg

See “Database Errors.”

Error when finding beeper code in database. errmsg

See “Database Errors.”

Error when finding source caller in database. errmsg

See “Database Errors.”

Error when finding trunk in database. errmsg

See “Database Errors.”

Extension does not exist or is a patient ext. attwinmsg

When employee records, internal records, etc., are entered, the entered extension is either already assigned as a patient extension or does not exist.

Extension is already a(n) <record type>. attwinmsg

When an extension record is entered, the extension is already assigned elsewhere.

Extension is not an Att. Console Extension. attwinmsg

An attempt has been made to assign an extension to an attendant when it has not been assigned as an attendant extension.

Fatal error unlocking database record. errmsg

See “Database Errors.”

First character cannot be a space or null. **attwinmsg**

The operator must do something other than insert blanks or press RETURN.

Going off-line due to error. **errmsg**

The application went off line because an outstanding sequence was found. Ask the administrator to check the UNIX queues.

Invalid deletion, extension currently assigned to user. **DBermsg**

User (i.e., patient, employee, etc.) must be deleted before the extension assigned to that user can be deleted.

Invalid deletion, DID group currently assigned in schedule. **DBermsg**

Delete the group index from the schedule, and then retry.

Invalid deletion, RSC group currently assigned in schedule. **DBermsg**

Delete the group index from the schedule, and then retry.

Invalid deletion, Time index currently assigned in schedule. **DBermsg**

Delete the time index from the schedule, and then retry.

Invalid extension for directory entry. **DBermsg**

An attempt has been made to add an employee, patient, etc. with an extension that no longer exists.

Invalid Login Name. **attwinmsg**

Try again, perhaps typing in upper- or lowercase letters.

Invalid Password. **attwinmsg**

Try again; check with the administrator about the password.

Joining parked and paged parties. **attwinmsg**

An attempt is being made to retrieve requested parked and paged parties.

Minor error when receiving data. **errmsg**

Part of the incoming message did not match what MCS expected in the message. This is a minor problem that will not interrupt processing; keep going.

Monitoring <attendant>. **attwinmsg**

The attendant number on the monitoring supervisor's station when an operator alert is successful and the supervisor D^{term} is answered.

Month must be 01 to 12. **attwinmsg**

Entered month lies outside of the number of months in the year.

No caller from which to take msg. **attwinmsg**

The Message function has been selected when no incoming call has been answered.

No color capabilities available. **errmsg**

The terminal type (vt100, etc.) does not support color.

No members in group. **Cmnerr**

Regardless of the scheduled change, this group has no members. It is probably best to delete the scheduled change.

No Patient Extension for this room. **attwinmsg**

If there should be, ask the administrator to add the patient extension; otherwise, continue input without filling in a bed.

No Patient Extension for this room and bed. **attwinmsg**

A patient extension exists for this room, but not for this bed.

No server available. **Cmnerr**

An attendant attempted to go on-line when the maximum number of attendants were already logged on.

No source caller for monitoring. **attwinmsg**

The supervisor monitoring function has been attempted when no incoming call has been answered.

No source caller for parking. **attwinmsg**

The Parking function has been attempted when no incoming call has been answered.

No statistics records to format. **errmsg**

There are no statistics yet from which to format records.

No such group. **Cmnerr**

An RSC/DID schedule has an unknown group assigned; this circumstance is unlikely to occur.

Park service not available. **attwinmsg**

Directory assistance, beeper, emergency services are still available.

Park service unavailable. **Cmnerr**

Communication with the PBX is down.

Parked call time-out [#]. **attwinmsg**

The number of callers rerouted to this attendant because they have been parked beyond the time configured for parked calls.

Parking caller. **attwinmsg**

The caller is being parked as shown.

Patient discharged can’t transfr. **attwinmsg**

An attempt was made to transfer a caller to a patient who has been discharged.

Patient extension must be unique. **DBermsg**

This extension has been used; someone may have added this extension before it was added here.

Query max exceeded. **Cmnerr**

If this is a problem, increase the maximum value through the MCS Configuration Management Menu.

Recall list is full. **Cmnerr**

Check MCS configuration database on APM and increase recall list parameters, have operators log off, terminate MCS_Monitor and MCS_Server components, remove configured MCS shared memory, and reinitialize.

Record does not exist. **DBermsg**

This record is not in the database.

Record exists, to make changes use modify. **attwinmsg**

An attempt was made to add a record that according to its key field already exists. The record can only be changed or the screen exited and the field re-entered.

Resetting parked time-out number. **errmsg**

The application did not find an empty park time-out slot. This problem is not major and will not interrupt processing; keep going.

Restoring DID, no longer valid. **attwinmsg**

The DID number entered for a patient was offered, but has since been used by someone else.

Restoring DID, problem locking it. **attwinmsg**

The DID number is may not be unique, or there may be a database problem. Try again. Ask the administrator to check log for database error description.

Restoring DID, problem modifying it. **attwinmsg**

There is a database problem; try again. Ask the administrator to check the log for a database error description.

Room already in use for a patient extension. **attwinmsg**

An attempt has been made to add a patient extension to a room that is already used for another patient extension.

Room already used for a non-patient extension. **attwinmsg**

An attempt has been made to insert a room for a patient extension that is already being used for a non-patient station such as an attendant, a nursing unit, etc.

Room and bed already used for an extension. **attwinmsg**

An attempt has been made to add a patient extension with a room and bed that are already assigned to another patient extension.

RSC group does not exist. **DBermsg**

An attempt has been made to schedule something (DID/RSC change) for a group or time index that does not exist.

Source caller cannot have msgs. **attwinmsg**

An attempt has been made to take a message for a non-patient party.

Supervisor emergencies ignore alternate extension. **attwinmsg**

To enter an emergency record for supervisor alerts, no second extension is needed (or used).

Supervisor is not logged in. **attwinmsg**

The message tells the operator who began a supervisor alert that although the supervisor D^{term} is ringing, the supervisor is not logged onto an attendant console.

Supervisor now monitoring convrs. **attwinmsg**

This message tells the operator who began a supervisor alert that the supervisor has answered and is monitoring the conversation.

Time index does not exist. **DBermsg**

An attempt has been made to schedule something (DID/RSC change) for a group or time index that does not exist.

Time index must be between 1 and <index limit>. **Ioerr**

The entered index is out of range; try again.

The unit must be one configured as a nurse's station extension. **DBermsg**

Someone may have deleted the nurse's station extension for this unit on another console before it was saved here.

The unit must be unique for each nurse's station extension. **DBermsg**

This extension seems to already have an assigned unit; perhaps one was added just before this one.

The room and bed must be unique. **DBermsg**

An attempt has been made to add a patient extension whose room and bed are being used by another.

The <character entered> cannot be the first character. **attwinmsg**

The pound sign (#) cannot be the first character entered for the attendant label or name in the Configuration Management Menu.

This bed is not available. **attwinmsg**

An attempt has been made to assign a patient to a room with a bed that is already in use.

This number must be greater than zero. **attwinmsg**

Try again with a larger number.

This room already has max allowed extensions. **attwinmsg**

An attempt has been made to add a patient extension to a room that has already been assigned its maximum allowed extension(s), such as 1 for private room.

This room does not have any available beds. **attwinmsg**

An attempt has been made to assign a patient to a room whose beds are already assigned.

This tty not configured. **errmsg**

Ask the administrator to change the tty (terminal) file in the MCS directory to include this tty.

Too many entries in database. **Cmnerr**

More than one RSC/DID group has been found in the database. This is unlikely to occur.

Transferring caller. **attwinmsg**

The caller is being transferred.

Transferred from an attendant. **attwinmsg**

The call just answered is an interposition attendant transfer.

Unit already exists for a nurse station extension. **attwinmsg**

While a nursing station extension was being added, an attempt was made to enter a unit that is already being used for another nursing extension.

Unit not assigned for a nurse station extension. **attwinmsg**

An assignment has been made to a unit that has not been assigned as a unit. If it is a valid unit, ask the administrator to add a unique ‘master’ extension for this nursing unit.

Wrong type returned from dblookup. **Errmsg**

See “Database Errors.”

You ARE the supervisor. **attwinmsg**

This is a reminder for any supervisor who begins a supervisor alert.

You have not been called by extn. **attwinmsg**

The Redial function has been selected when there has been no released incoming call during this on-line session.

You must call beeper manually. **attwinmsg**

This is not an on-line feature. Manually dial the beeper number on the console.

You must include a # somewhere in the label. **attwinmsg**

Each attendant name or label must include the pound sign (#) for MCS recognition.

You must transfer call manually. **attwinmsg**

This transfer is not handled on-line. Manually dial the number on the console.

Your held party just hung up. **attwinmsg**

A party who was on hold has hung up.

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Chapter 12 PLATFORM MANAGEMENT

Introduction to Platform Management

When you enter the *mcsadm* login name, the MCS Platform Management Menu displays with the options that are described below:

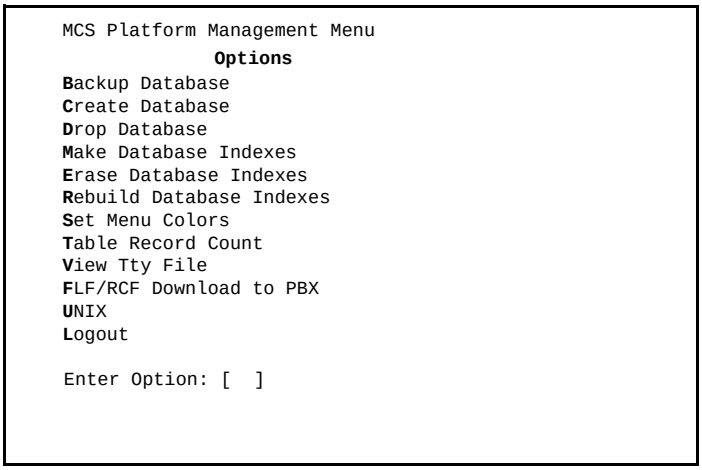


Figure 12-1 Platform Management

Menu Options

The MCS Platform Management Menu provides the following options described below:

Backup Database	Makes a backup copy of database assignments on tape; first in sequence of database options.
Create Database	Creates new database fields according to MCS instructions.
Drop Database	Removes the entire MCS database. **WARNING:** Do not use this option before backing up the database on tape through the Backup Database option.
Make Database Indexes	Recreates the order by which the database records are stored.
Erase Database Indexes	Erases the order in which the database records are stored and sorted.
Rebuild Database Indexes	Rebuilds the database indexes to improve efficiency in database access and searches.
Set Menu Colors	Resets the color of all screens in the MCS and related applications.
Table Record Count	Lists the internal MCS tables. For each, display a count of its records.

View Tty File	Displays what tty is tied to each attendant console extension.
FLF/RCF Download to PBX	Restores patient extensions, phone service, DID numbers, and patient restriction information to the PBX if there is a PBX failure.
UNIX	Positions the cursor at the UNIX prompt. This option is not explained further in this manual. Refer to a UNIX reference guide.

Sequence of Option Use

In circumstances other than a response to a system failure, the sequence for database options is as follows:

1. Back up the database.
2. Drop the database.
3. Create the database.
4. Use the Make Database Indexes option.
5. Using an Informix guide, retrieve the backup copy from the tape.

Warning

NEVER drop the database before backing it up, or the database will be lost.

Procedure

Action	Result
At the login prompt, type **mcsadm** and press **Enter**.	The MCS Platform Management Menu displays.
Refer to the following pages for information and instructions for using each menu option.	
To exit the MCS Platform Management Menu, type **l** (for Logout) and press **Enter**.	The Login prompt redisplays.

Backup Database Option

Use the **Backup Database** option on the MCS Platform Management Menu to store a backup copy of the MCS database on tape.

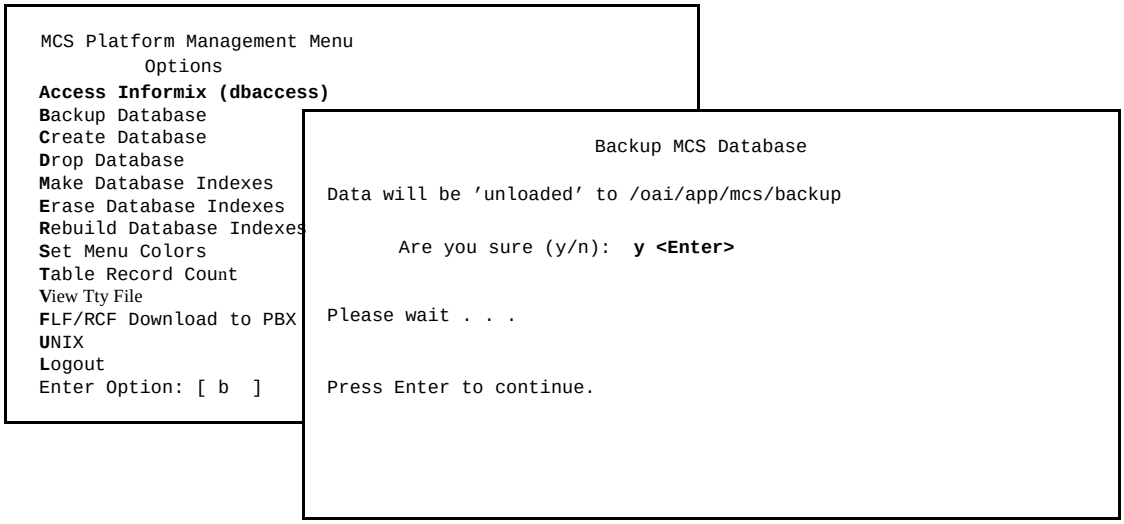


Figure 12-2 Backup Database

Delay

MCS must lock the database while this backup is being performed. No one can access information in the database during this time. Therefore, we recommend that you perform backups during low-traffic times only.

When to Use

This option should be used in the following three instances:

- To back up the basic MCS system after it has been installed and only relatively permanent database and extension assignments have been made.
- Thereafter, when patients have been introduced to the system and many changes are being made to the database, such as patient admissions or discharges and changes to employee or physician extension assignments.
- Before every use of the **Drop Database** option.

Retrieval

If a back-up copy of the database must be retrieved (e.g., in the case of a system failure), consult the Informix database retrieval procedures. The Backup MCS Database screen names the full path and filename of the backup database stored for use with this procedure.

Procedure

Action	Result
On the MCS Platform Management Menu, type **b** at the prompt and press **Enter**. (1)	The Backup MCS Database screen displays with important information about the backup. (2)
Write the time and date on the tape as shown, and place a tape in the drive. To perform the backup, type **y** at the prompt and press **Enter**.	If a tape is in the tape drive, the backup is performed. If not, the backup is cancelled. In either case, the message “Press Enter to continue” displays.
Press **Enter**.	The MCS Platform Management Menu redisplays.

Create Database Option

Use the **Create Database** option on the MCS Platform Management Menu to create new database fields according to MCS instructions.

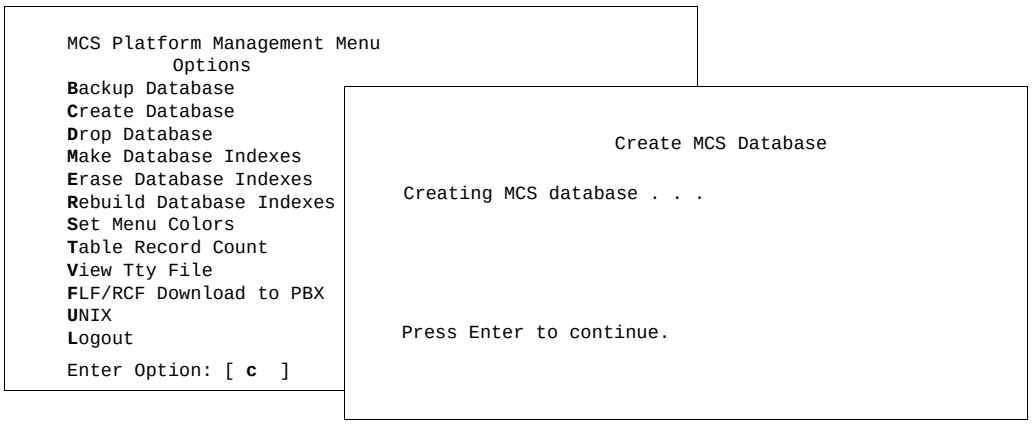


Figure 12-3 Create Database

When to Use

This option should only be used in the event of system failure or after using the **Drop Database** option. Once the new database fields are created through this option, use the **Make Database Indexes** option to identify the order in which the records in the database are stored. Then, if desired, consult an Informix guide to retrieve data from the backup tape that was made before you used the **Drop Database** option.

Procedure

Action	Result
On the MCS Platform Management Menu, type **c** at the prompt and press **Enter**. (1)	The Create MCS Database screen displays while the database is being created. After the database is created, the message “Press Enter to continue” displays. (2)
Press **Enter**.	The MCS Platform Management Menu redisplays.

Drop Database Option

Use the **Drop Database** option on the MCS Platform Management Menu to remove the entire MCS database. **WARNING:** Do not use this option before backing up the database on tape through the **Backup Database** option.

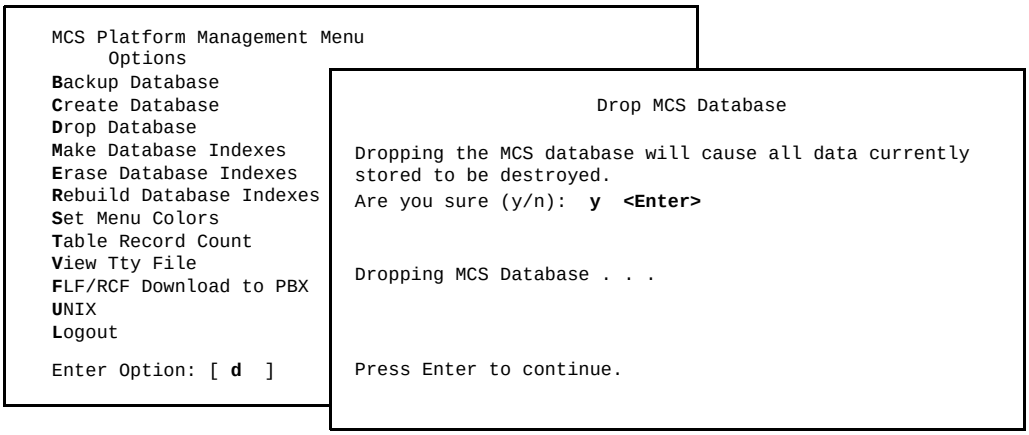


Figure 12-4 Drop Database

Sequence

The Drop MCS Database screen removes all data now stored in MCS, including all extension user assignments for patients, physicians, employees, and internal locations. Use the **Backup Database** option first to store a copy of the database on tape. Then, drop the database with this option, create new database fields with the **Create Database** option, identify the order of record storage with the **Make Database Indexes** option, and retrieve the stored database copy from the tape.

Procedure

Action	Result
On the MCS Platform Management Menu, type **d** at the prompt and press **Enter**. (1)	The Drop MCS Database screen displays with a warning and a confirmation prompt. (2)
At the confirmation prompt, type **y** to delete the database or **n** to cancel the deletion, and press **Enter**.	If the deletion is confirmed, a message shows when the database is being dropped. The message “Press Enter to continue” displays when you can exit the screen.
Press **Enter**.	The MCS Platform Management Menu redisplays.

Make Database Indexes Option

Use the **Make Database Indexes** option on the MCS Platform Management Menu to recreate the order in which the database records are stored.

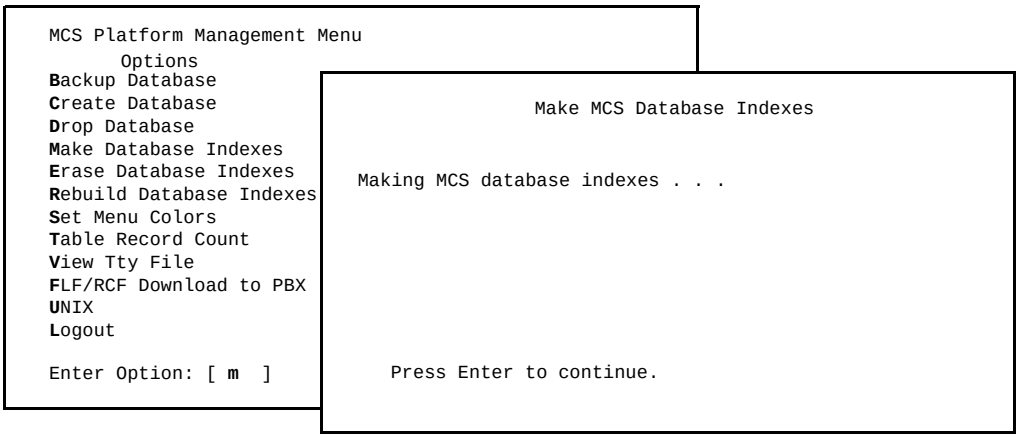


Figure 12-5 Make Database Indexes

Sequence

Once the **Create Database** option defines the fields of the new database according to MCS instructions, the **Make Database Indexes** option marks the fields that are to be used as indexes, setting the order in which records are stored and sorted during lookups. After you use these two options, you can re-enter data to the database or retrieve data from a backup tape.

Procedure

Action	Result
On the MCS Platform Management Menu, type **m** at the prompt and press **Enter**. (1)	The Make MCS Database Indexes screen displays while the database indexes are being made. After the indexes are made, the message “Press Enter to continue” displays. (2)
Press **Enter**.	The MCS Platform Management Menu redisplays.

Erase Database Indexes Option

Use the **Erase Database Indexes** option on the MCS Platform Management Menu to erase the order in which the database records are stored and sorted.

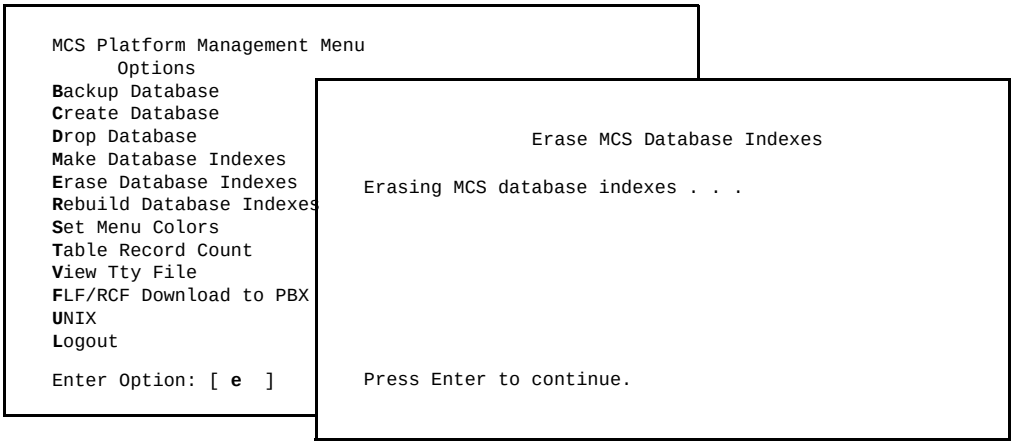


Figure 12-6 Erase MCS Database Indexes

Sequence

Use of this option should be rare. Any time the Indexes are erased, you need to use the **Make Database Indexes** option to re-make them.

Procedure

Action	Result
On the MCS Platform Management Menu, type **e** at the prompt and press **Enter**. (1)	The Erase MCS Database Indexes screen displays and shows that the database indexes are being erased. After the indexes are erased the message “Press Enter to continue” displays. (2)
Press **Enter**.	The MCS Platform Management Menu redisplays.

Rebuild Database Indexes Option

Use the **Rebuild Database Indexes** option on the MCS Platform Management Menu to restructure the database indexes to improve efficiency in database access and searches.

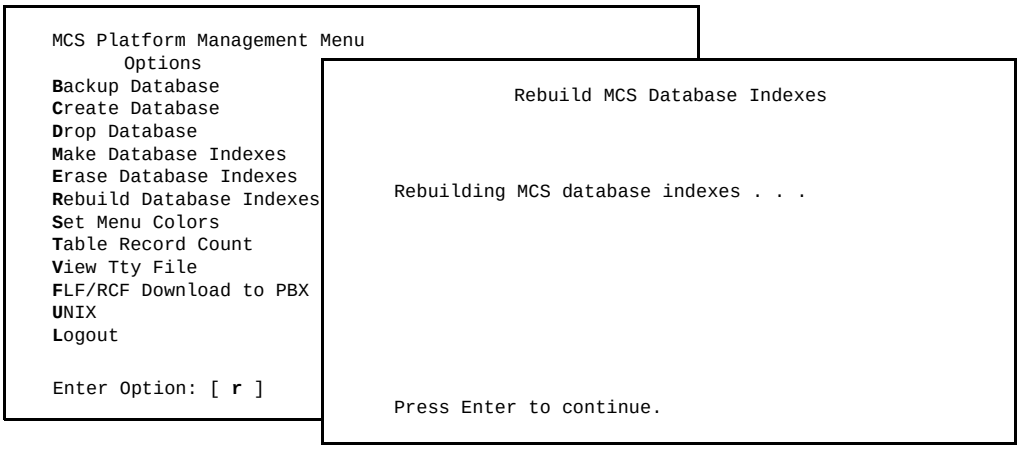


Figure 12-7 Rebuild Database Indexes

When to Use

This option can be used anytime that operator lookups from the attendant screen seem to be taking too long, lowering operator efficiency.

Procedure

Action	Result
On the MCS Platform Management Menu, type **r** at the prompt and press **Enter**. (1)	The Rebuild MCS Database Indexes screen displays and shows that the database indexes are being rebuilt. After the indexes are rebuilt, the message “Press Enter to continue” displays. (2)
Press **Enter**.	The MCS Platform Management Menu redisplays.

Set Menu Colors Option

Use the **Set Menu Colors** option on the MCS Platform Management Menu to reconfigure the color of all screens within the MCS.

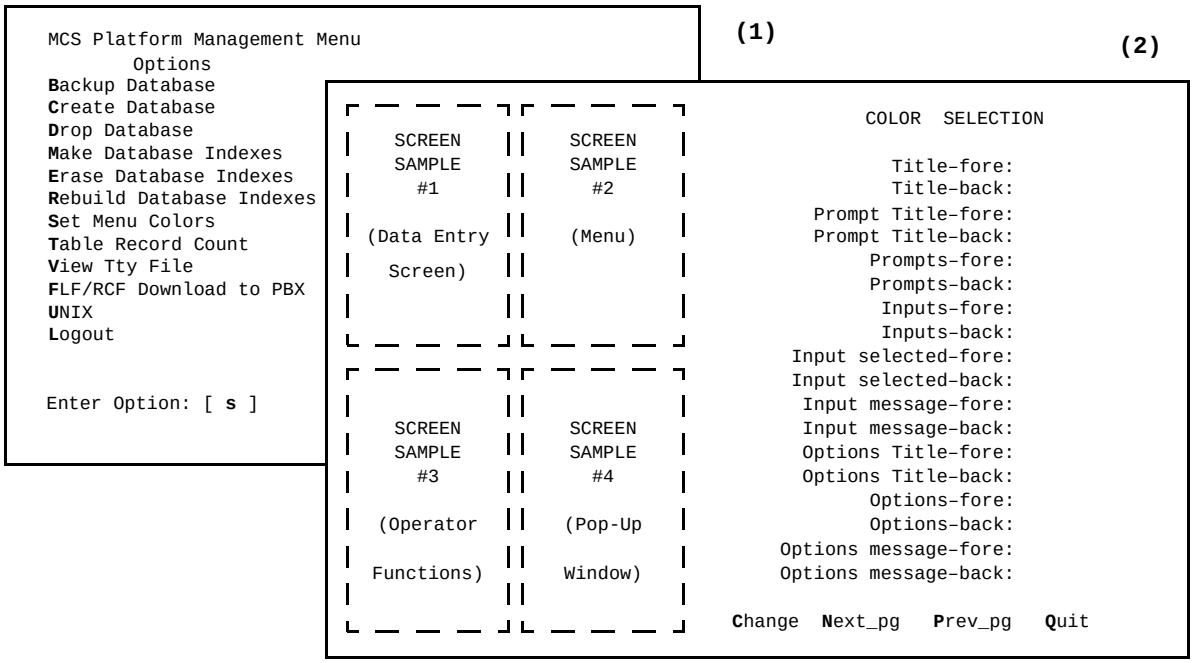


Figure 12-8 Set Menu Colors

General Process

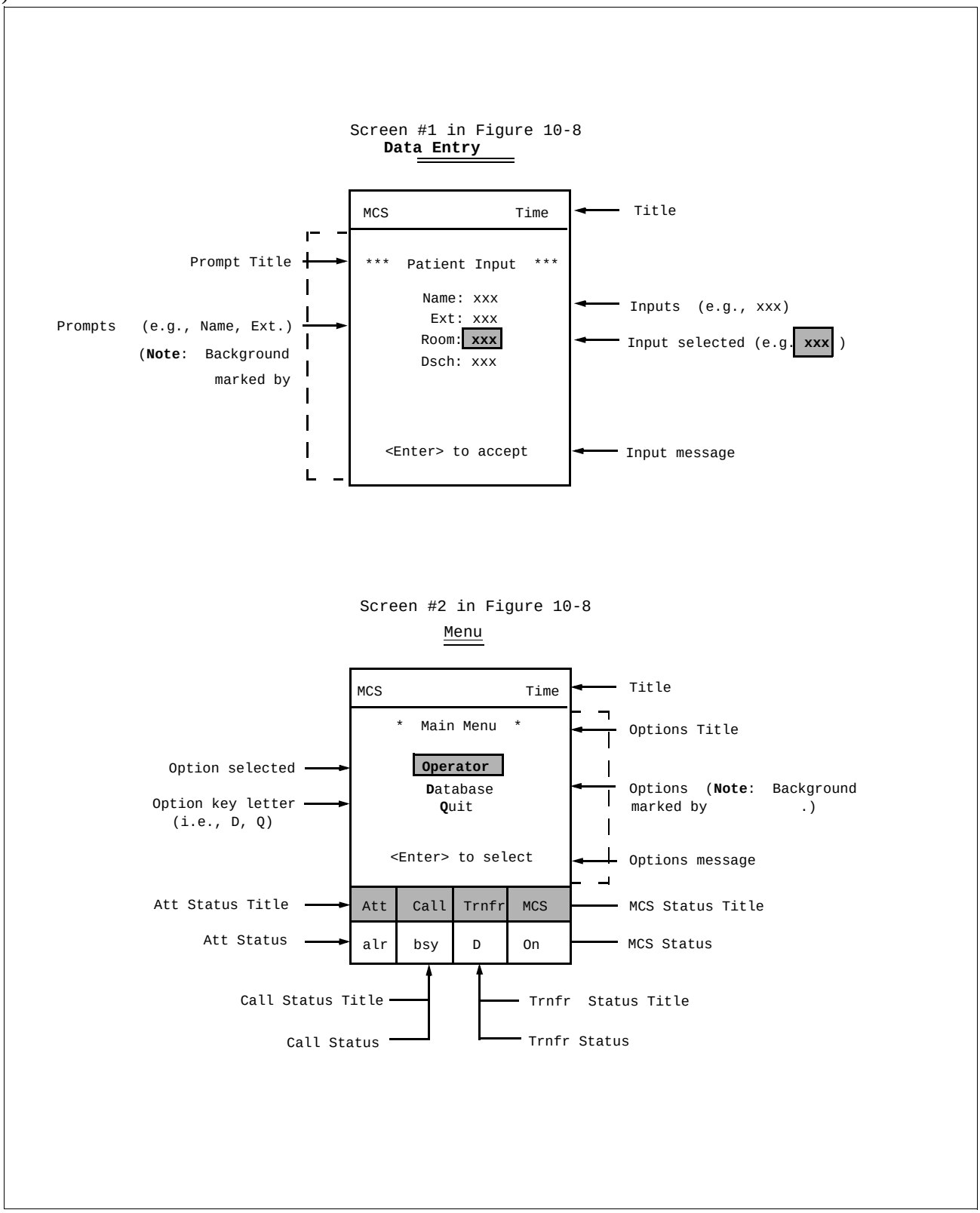
This option brings great versatility to the process of “coloring” the MCS screens. For the most part, every screen contains items, and the coloring of each item can be controlled according to its foreground and its background. The item foreground is typically the words that are displayed, such as a menu option, a prompt for data entry, or a column title. The background of each item is simply a space around those words that may or may not be visible, depending upon its color. If its color contrasts at all with other adjacent screen item backgrounds, it is visible; if not, it is not visible.

Samples of MCS screens are shown on the left of screen (2) in Figure 12-8 and a multi-page list of all MCS screen items is shown to the right. Each item is listed twice: Once for its foreground color selection (fore) and again for its background color selection (back). To the right of each item, a colored square displays the currently selected and implemented color. When you move the cursor to an item, a row of colored squares displays to the right of that item with an *X* on the current selection. Make changes to the color of an item by using the arrow keys to move the *X* to a different color. As a change is made to this right-hand item list, the corresponding sample screen(s) to the left change(s).

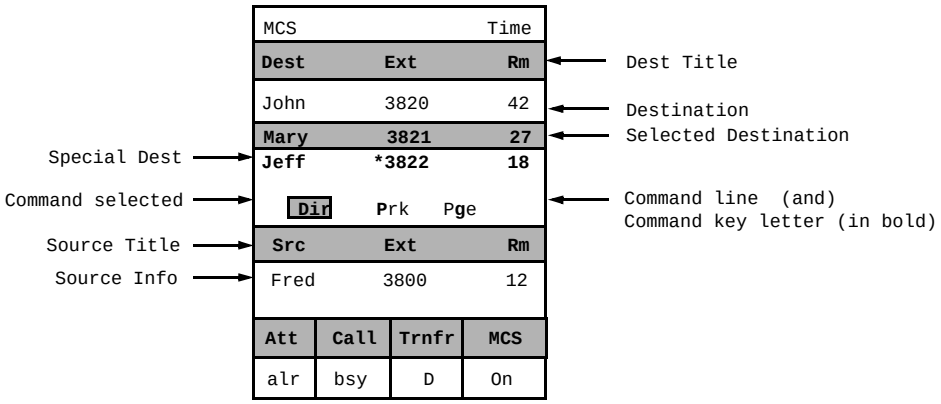
Representative Screens

The screens represented in Figure 12-8 are shown in more detail below with labels marking the items from the right-hand list for which they demonstrate color changes:

)

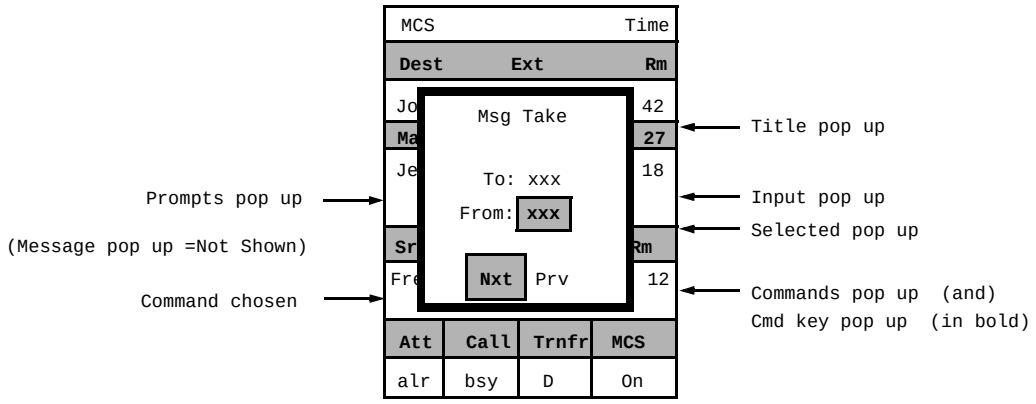


Screen #3 in Figure 10-8
Operator Function Screen



(**Note**: Changes made to Title, Att Status Title, Att Status, Call Status Title, Call Status, Xfer Status Title, Xfer Status, MCS Status Title, and MCS Status items in both foreground and background are also reflected on this screen.)

Screen #4 in Figure 10-8
Pop–Up Windows



(**Note**: Changes made to screen items on the Operator Function screen are reflected in this screen, behind the pop-up window.)

Procedure

Action	Result
On the MCS Platform Management Menu, type **s** at the prompt and press **Enter**. (1)	The Set Menu Colors screen displays. (2)
Press **Enter** to select the **Change** command.	Color choices display to the right of the first screen item under the Color Selection heading. The cursor and an *X* are positioned on the current color selection.
Use the arrow keys or space bar to move the cursor and the *X* to the color you want and press **Enter**.	The screen(s) to the left on which the item displays shows the change in color, and the cursor is positioned on the next screen item in the Color Selection list.
Make all desired changes to the foreground and background of every MCS screen item, as described above. Use **Esc** to return to the first Color Selection page of items. Use the **Next-pg** and **Prev-pg** commands to move among the Color Selection pages of items.	
When all changes are completed, type **q** and press **Enter** to exit the Set Menu Colors option.	The MCS Platform Management Menu redisplays.
On the Administration Main Menu, type **m** at the prompt and press **Enter**. (1)	The menu colors screen displays. (2)

Table Record Count Option

Use the **Table Record Count** option on the MCS Platform Management Menu to list the internal MCS tables and to display a count of the records each table contains.

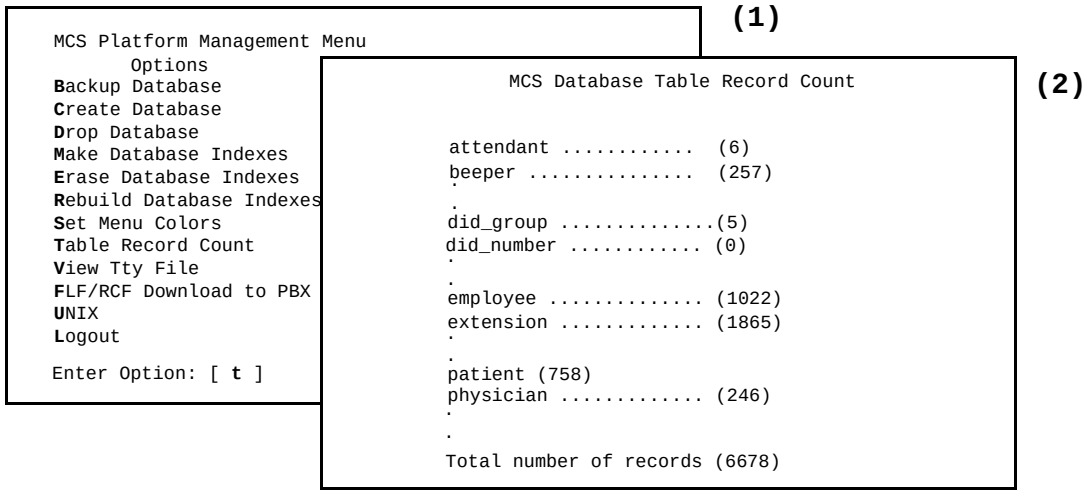


Figure 12-9 Database Table Record Count

Procedure

Action	Result
On the MCS Platform Management Menu, type **t** at the prompt and press **Enter**. (1)	The MCS Database Table Record Count screen displays. (2) After the listing, a total number of records displays.
To exit the MCS Database Table Record Count screen, press **Enter**.	The MCS Platform Management Menu redisplays.

View TTY File Option

Use the **View Tty File** option on the MCS Platform Management Menu to display what tty is associated with each attendant console extension.

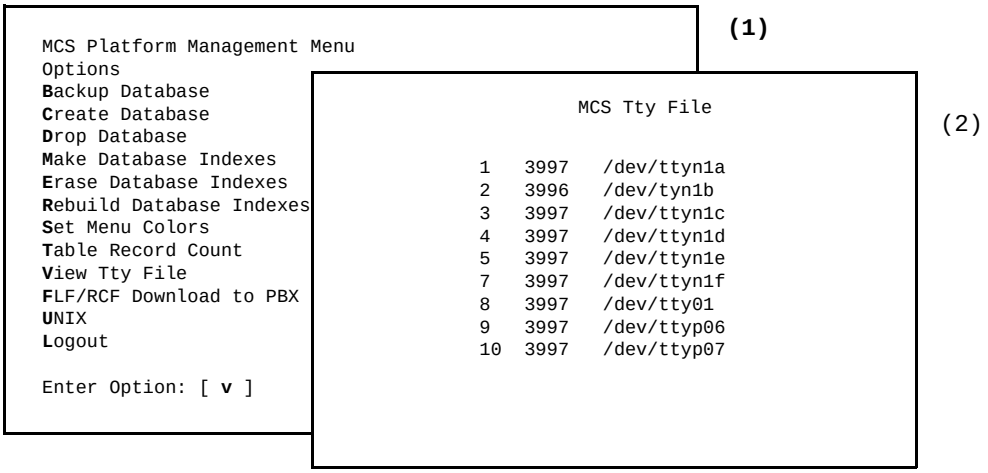


Figure 12-10 View TTY File

Procedure

Action	Result
On the MCS Platform Management Menu, type **v** at the prompt and press **Enter**. (1)	The MCS Tty File displays. (2)
To exit the MCS Tty File display, press **Enter**.	The MCS Platform Management Menu redisplays.

FLF/RCF Download to PBX Option

Use the **FLF/RCF Download to PBX** option on the MCS Platform Management Menu to restore PBX patient extensions, phone service, DID numbers, and patient restriction information in the event of PBX failure.

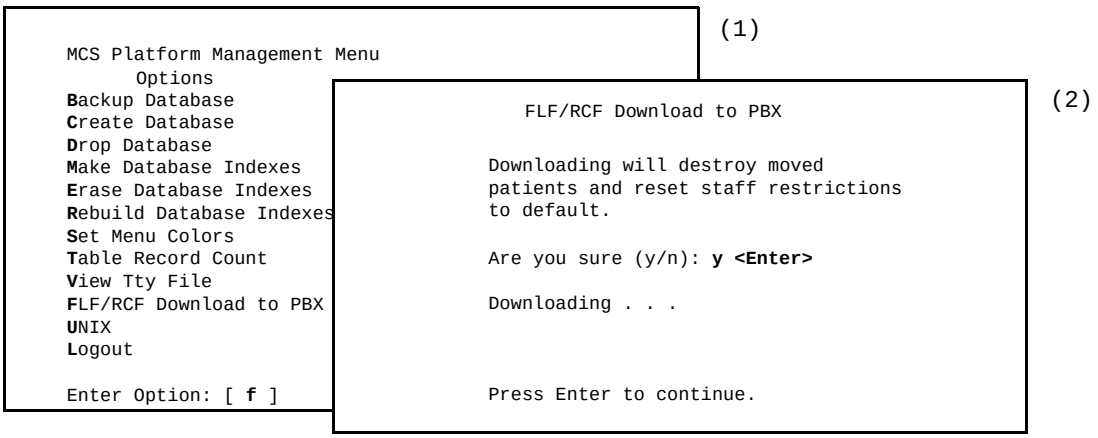


Figure 12-11 FLF/RCF Download to PBX

Warning

Downloading will delete patients who have been moved and will reset all staff restrictions to the default value.

DID Numbers

Only DID numbers that are stamped with an active status by the database are downloaded to the PBX. When a DID number is active, it has been received by the PBX and is implemented. If there was a patient move between the time that the DID number was implemented by the PBX and the PBX failure, the downloaded DID number will not be accurate.

Effect on Database

Downloading the database to the PBX slows down response to operator lookups, but not as much as backing up the database.

Procedure

Action	Result
On the MCS Platform Management Menu, type **f** at the prompt and press **Enter**. (1)	The FLF/RCF Download to PBX screen displays. (2)
To exit the FLF/RCF Download to PBX screen, press **Enter**.	The MCS Platform Management Menu redisplays.

Chapter 13 HOST INTERFACE ADMINISTRATION

Introduction

The MCS Host Interface Administration Menu provides options for managing the communication interface between the MCS and the HIS systems. This menu displays when you enter **hostadm** at the UNIX login prompt.

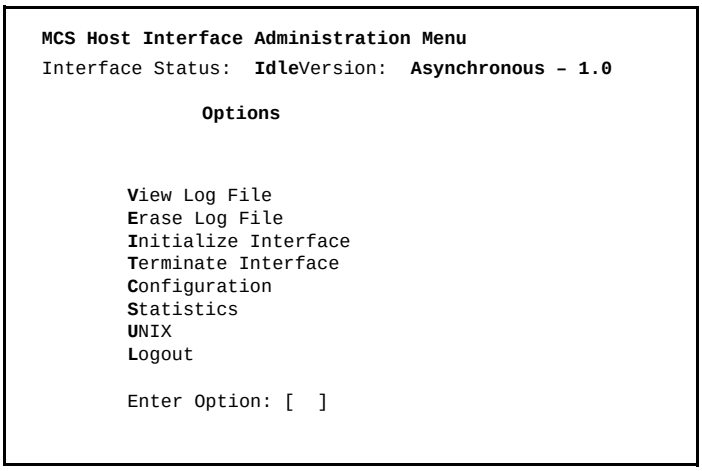


Figure 13-1 Host Interface Administration

Interface Status

The interface can either be idle or active. If it is idle, it is not able to receive messages from the HIS. If it is active, the interface is receiving messages and is otherwise interacting normally with the HIS. Administration Menu options can be accessed when the interface is in either state.

Version

MCS now communicates only over a serial line in asynchronous mode.

Menu Options

The Host Interface Administration Menu provides these menu options:

Option	Task	Section in Chapter
View Log File	Select and display the current message files that show activity on the host interface.	"Log File Options" on page 183
Erase Log File	Remove the current log file from the system.	"Log File Options" on page 183
Initialize Interface	Start up the host interface, allowing communication between the MCS and the HIS systems.	"Initialization and Termination Options" on page 185
Terminate Interface	Stop host interface message exchange, discontinuing any communication between the MCS and the HIS systems.	"Initialization and Termination Options" on page 185
Configuration	Change or accept default configuration values that govern communication across the interface.	"Configuration Option" on page 186
Statistics	Display any selected time-stamped file containing statistics by category of input.	"Statistics Option" on page 189

Procedure

Action	Result
At the UNIX login, type **hostadm** and press **Enter**.	The MCS Host Interface Administration Menu displays.
Refer to the following pages for information and instructions in the use of each menu option.	
To exit the MCS Host Interface Administration Menu, type **l** (for Logout) and press **Enter**.	The UNIX login prompt redisplays.

Log File Options

The **Log File** options on the MCS Host Interface Administration Menu allow you to display the log file for on-screen viewing or printing and to erase the contents of the log file. This section discusses these two options.

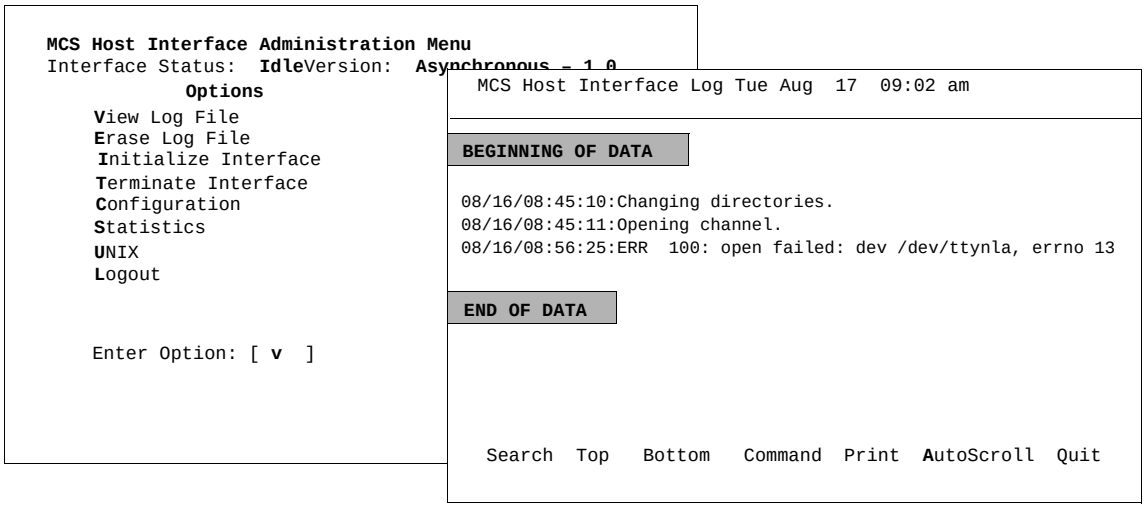


Figure 13-2 Interface Log File

Contents

The Log File contains messages about processes completed, transactions in progress, and other activities on the interface. The messages are date and time stamped (e.g., 08/16/08:45:10) and listed in chronological order, based upon arrival to the log file.

Real-Time Display

The Log File display reflects real-time activity in the file when it is in **AutoScroll** mode. When the cursor is positioned on the **AutoScroll** command, press the **Enter** key to toggle the mode on and off. In **AutoScroll** mode, the notation **A–S** appears in the bottom right-hand corner of the screen and new messages are scrolled onto the screen as they occur.

Hard Copy Print

The **Print** command allows you to make hard-copy snapshots of either the current screen or the entire file contents.

WARNING: Use of the **Erase Log File** option removes all data from the log file and requires confirmation before the actual deletion is performed.

View Log File Procedure

Action	Result
On the MCS Host Interface Administration Menu, type **v** at the prompt and press **Enter**. (1)	The Log File displays and the cursor is positioned on the **AutoScroll** command.(2)
If desired, press **Enter** to turn on the AutoScroll mode.	The notation **A–S** displays in the bottom right-hand corner of the screen.
Use the **Top** command to move to the beginning of the display and the **Bottom** command to move to the end of the display.	
To Search the Display: Type **s** to select the Search command and press **Enter**. At the prompt, type the desired pattern and press **Enter**.	All occurrences of the given pattern on that page highlight.
To Print the Display: Type p to select the Print command and press Enter. At the prompt, type f to print the whole file or s to print the screen and press Enter. (Press **Esc** to return the cursor to the command line, cancelling the print request.)	There is a pause while the file or screen is sent to the printer. Then the command line is returned.
To Work at UNIX Level: Select the Command choice on the command line and press Enter.	The message “Enter UNIX command and press Enter” displays, and the cursor is positioned on a UNIX prompt.
To exit the display, type **q** to select the Quit command and press **Enter** twice.	The MCS Host Interface Administration Menu displays.

Erase Log File Procedure

Action	Result
On the MCS Host Interface Administration Menu, type **e** at the prompt and press **Enter**. (1)	A message displayed under the Menu states that erasing the Log File will cause all data in the log file to be deleted and requests confirmation.
Type **y** and press **Enter** to delete the Log File and all data in it. Type **n** and press **Enter** to cancel the deletion. Press **Enter** a second time.	The MCS Host Interface Administration Menu displays.

Initialization and Termination Options

The **Initialization** and **Termination** options on the MCS Host Interface Administration Menu are used to start and stop the host interface, controlling communication between the MCS and the HIS systems.

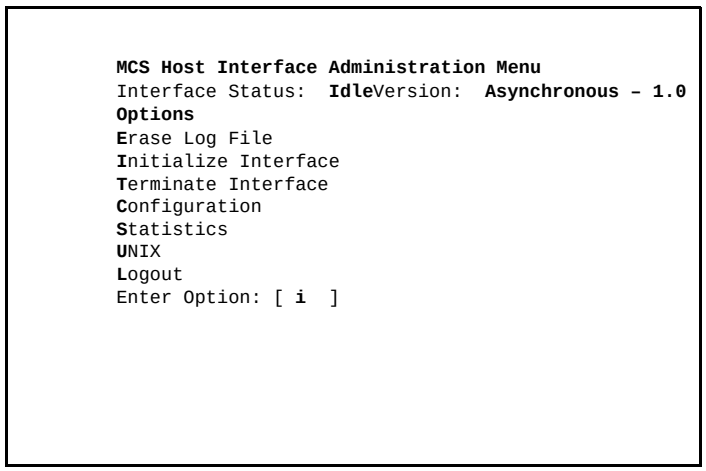


Figure 13-3 Interface Initialization/Termination

Initialization Procedure

Action	Result
On the MCS Host Interface Administration Menu, type **i** at the prompt and press **Enter**. (1)	The message “Initialize Interface” displays to show that the interface has been initialized as requested.
Press **Enter**.	The MCS Host Interface Administration Menu displays.

Termination Procedure

Action	Result
On the MCS Host Interface Administration Menu, type **t** at the prompt and press **Enter**. (1)	The message “Terminate Interface, Are you sure (y/n):” displays for confirmation before the termination is actually performed.
Type **y** and press **Enter** to continue with the termination. Type **n** and press **Enter** to cancel the termination.	The message “Interface has been terminated” displays.
Press **Enter**.	The MCS Host Interface Administration Menu displays.

Configuration Option

Use the **Configuration** option on the MCS Host Interface Administration Menu to change or accept default configuration values which govern communication across the interface.

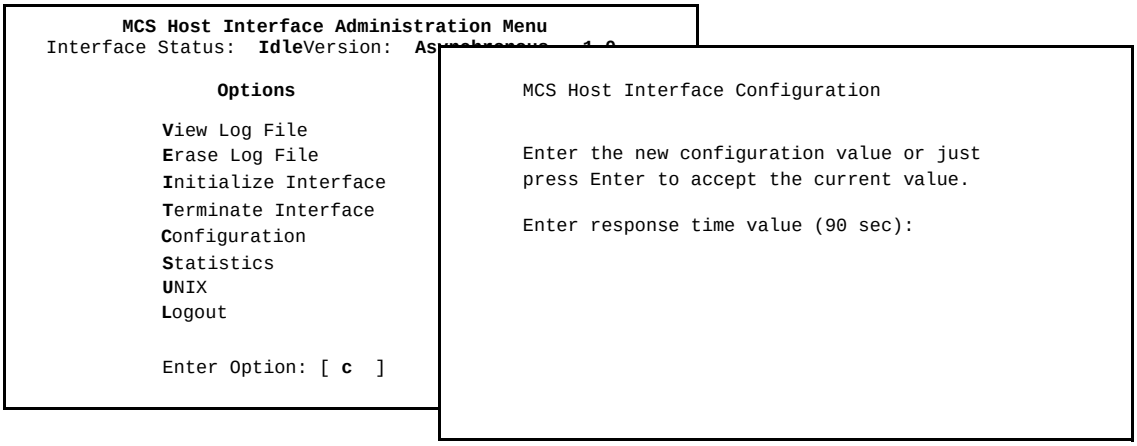


Figure 13-4 Interface Configuration File

Contents

The Configuration File contains parameters for which entries bring the host and the MCS into communication. In some cases, entries on one side of the link must be compatible with entries on the other side of the link. The parameters display one at a time for data entry with the default entry shown in parentheses.

Procedure

Action	Result
On the MCS Host Interface Administration Menu, type **c** at the prompt and press **Enter**. (1)	The Configuration File displays. (2)
In each field, either press **Enter** to accept the default value shown in parentheses or type a new value to the field and press **Enter**, according to the field definitions below: Field Name Response timer value	 Definition The amount of time MCS waits for an acknowledgment from HIS before resending the requested data; default = 90 sec.
Master synchronization timer value (30 sec)	The length of time that HIS waits for an acknowledgment or data-bearing message from MCS before assuming that communication is down between the two.
Slave synchronization timer value (180 sec)	The length of time that MCS will wait for a heartbeat or data-bearing message from the host before assuming that communication is down between the two.
Message request response timer value (30 sec)	In a two-way link, if MCS has asked the host to download messages, this is the amount of time that MCS waits for those messages.
Host link semaphore key value	The key of the semaphore used to control access to the host link; default = 2734.
Logging level	The level of detail at which information is recorded in the log file; default = 1 (error message only). Valid values include 1, 3, 5, and 7, where 7 is extensive tracing that is recommended for problem-solving only.
Host link shared memory key value	The semaphore key used to control access to the host link shared memory; default = 2734.

Action	Result
Field Name Number of times to send a negative acknowledgment	Definition The number of times MCS will send a negative acknowledgment to the host within the configured response time period before it stops sending one; default = 3.
Host interface working directory	The full path and filename of the host interface working directory; default = /oai/app/mcs/host/bin.
Logging and statistics directory	The full path and filename of the directory for the logging and statistical files; default = /oai/app/mcs/host/log.
Modem dial out telephone number ( )	The telephone number used to establish connection with the HIS system if the host interface is connected by modem.
Slave TTY port device	The name of the port device on the MCS designated terminal; default = /dev/ttynla.
Line mode	The line mode and speed, to match that of the host, from the selection displayed above the entry field; default = 1 (9600B, 8-N-1). After the last field, press **Enter**, the message “Update Completed” displays.
Press **Enter**.	The MCS Host Interface Administration Menu displays.

Statistics Option

Use the **Statistics** option on the MCS Host Interface Administration Menu to display any selected time-stamped file containing statistics by category of input.

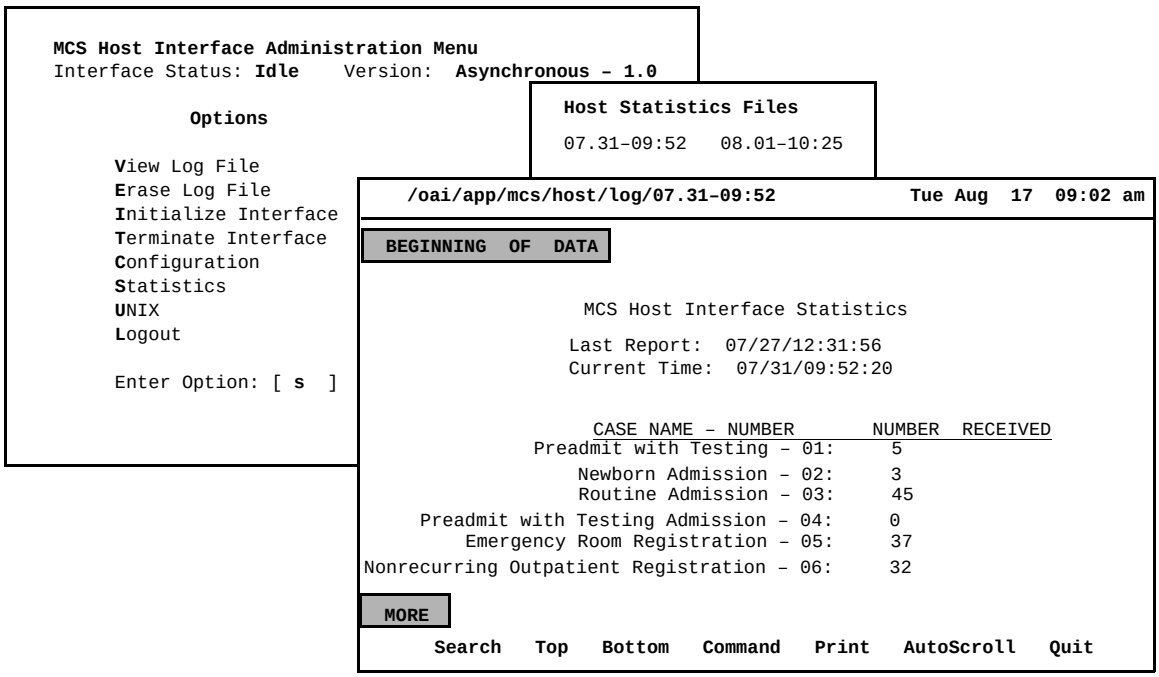


Figure 13-5 Interface Statistics

Display Contents

The fields in the display (e.g., Preadmit with Testing, Newborn Admission, etc.) are derived from the types of records that are sent from the host and defined for the host during its installation. The APM automatically opens new host statistics files and then removes them after one week.

Real-Time Display

The Statistics display reflects real-time activity in the file when it is in **AutoScroll** mode. When the cursor is positioned on the **AutoScroll** command, press the **Enter** key to toggle the mode on and off. In **AutoScroll** mode, the notation **A–S** appears in the bottom right-hand corner of the screen and new messages are scrolled onto the screen as they occur. These new messages are appended to the file.

Note: *The Current Time and Last Report notations show when the respective reports (i.e. last and current) are generated.*

Hardcopy Print

The **Print** command enables you to make hardcopy snapshots of either the current screen or the entire file contents.

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Appendix A BEEPER INTERFACE

Overview

This section specifies the features and basic operation of NEC's Medical Controller System alphanumeric paging interface. The MCS offers multiple databases that can be used to make and join callers to hospital staff and services. The MCS Beeper Interface (MCS/BI) will provide the operator with a facility to search the MCS database, select a specific individual or service, and enter an alphanumeric message that can be sent to an electronic paging device (beeper) through an alphanumeric paging terminal. Access to voice pagers will not be provided.

The communications protocol between the MCS and the alphanumeric paging terminal will be that recommended by the Personal Communications Industry Association, Telocator. The protocol was previously known as the Motorola/IXO alphanumeric protocol. The Motorola/IXO protocol was adopted by Telocator in September of 1988 as an industry standard for devices accepting input for paging requests and is known as Telocator Alphanumeric Protocol (TAP).

The preferred access method to the paging terminal is through a serial I/O connection. The MCS/BI will also support connection through a modem to a remote paging device. A beeper configuration menu will allow the input of a modem access number, response timers, and other control parameters.

A list of pre-defined messages that are commonly sent can be accessed by the operator. The operator can also enter a specific message at the input prompt when required. The pre-defined messages can be modified.

A time stamped record of each page will be saved to a log. This log can be viewed and printed to a line printer.

Database Fields

Two fields in the MCS database contain pager number information. The *Pager Id* field defines a person's pager address or Personal ID Number (PIN). The second field, *Pager Dial Number*, is a phone number field that is used to dial a user's paging provider or to access a pager that has a discrete phone number. If the database contains a dial number, that number will be used to place a call from the ATT Console. If the database only contains a *pager id*, the local paging system will be accessed if the MCS Beeper Interface is installed and active.

Architecture

This section provides information about the architecture of the beeper interface in order to give you a basic understanding how the beeper interface operates.

The following diagram depicts connectivity between the NEAX2400, the MCS, and a Hospital Information System (HIS). A brief explanation of the connections is provided below.

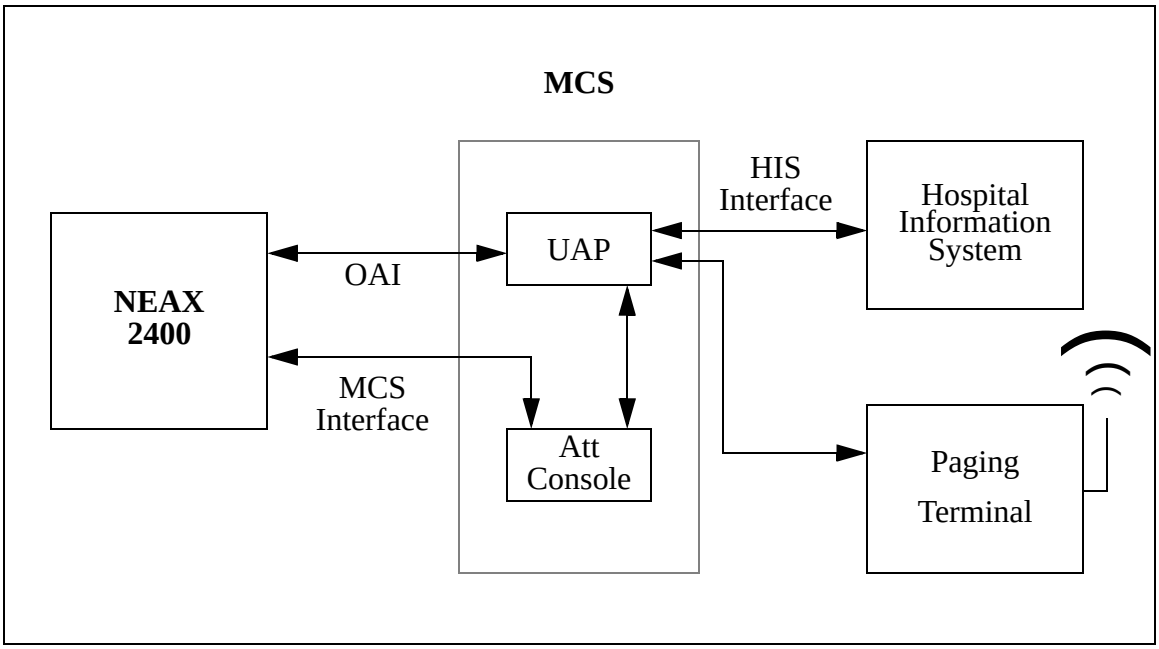

Figure A-1 Beeper Connectivity

The OAI link is either X.25 or TCP/IP. The HIS interface is an RS-232C DTE-to-DTE full-duplex connection or a TCP/IP network interface. The connection between the UAP and Attendant Consoles varies on the type of console equipment. For example, the SunRiver VGA stations require DB-9 with pins 2 and 4 not used.

The connection from the UAP out to the Paging System is an RS-232C DTE. In most cases one of the COM ports of the UAP can be used, otherwise, a port from a multi-port serial I/O card will be required. (The SunRiver stations have serial and parallel ports.) The paging terminal can be any device that can be interfaced using an RS-232C and accept the Telocator Alphanumeric Protocol (TAP) for paging requests.

NEC developed a beeper interface that can accept beeper request from a number of application users within the UAP. The beeper software interface can be used by both the MCS and other OAI applications (i.e. Dterm applications) concurrently. The beeper interface accepts IPC message from applications and communicates with the beeper terminal on the RS-232 connection.

A basic diagram of the beeper software interface is presented below. The diagram shows some of the basic UNIX internal's that will be required to process a message from an OAI application to the beeper terminal. The diagram might not be an accurate representation of the actual software interface since some of the details have been left out.

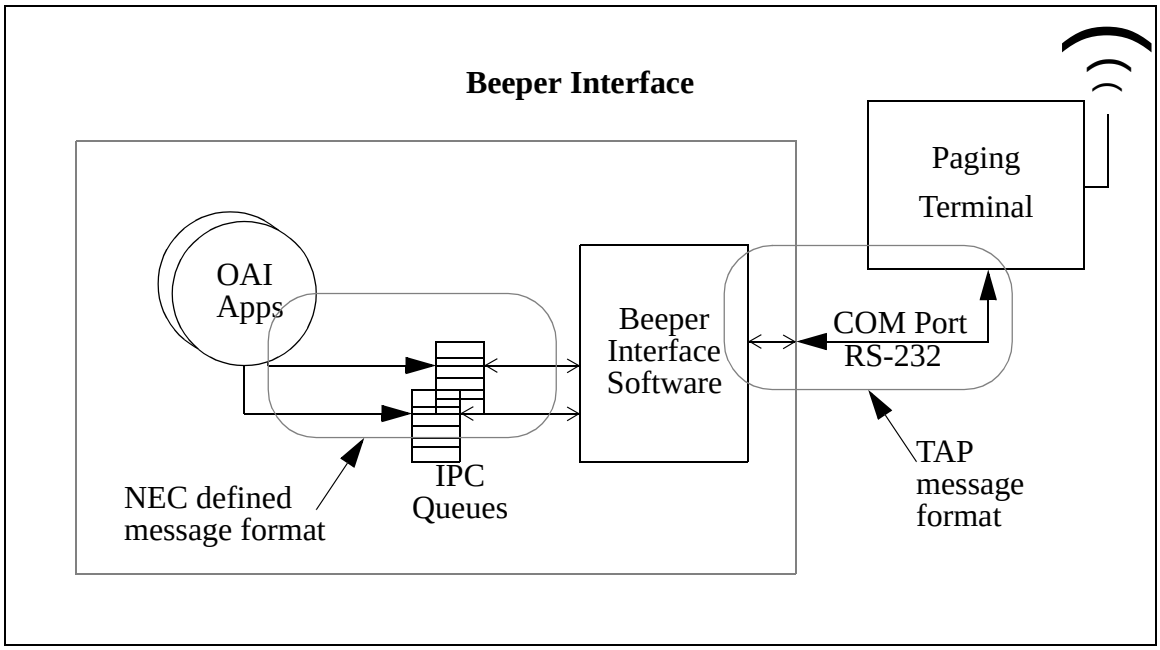

Figure A-2 Beeper Software Interface

The NEC defined message format can be provided to other application engineers upon request. The message format contains information that allows the beeper interface software to accept messages from unknown applications and return beeper status information to the application after the beeper request has been serviced by the beeper terminal.

Using the Beeper Interface

To launch the Beeper function, press **B** on the console keyboard or use the arrow keys to select the **Beeper** command and press **Enter** while the main operator menu is displayed. (All operator functions are launched from the main menu.) The command line is replaced with a prompt for you to enter the name of the person to receive a beeper page.

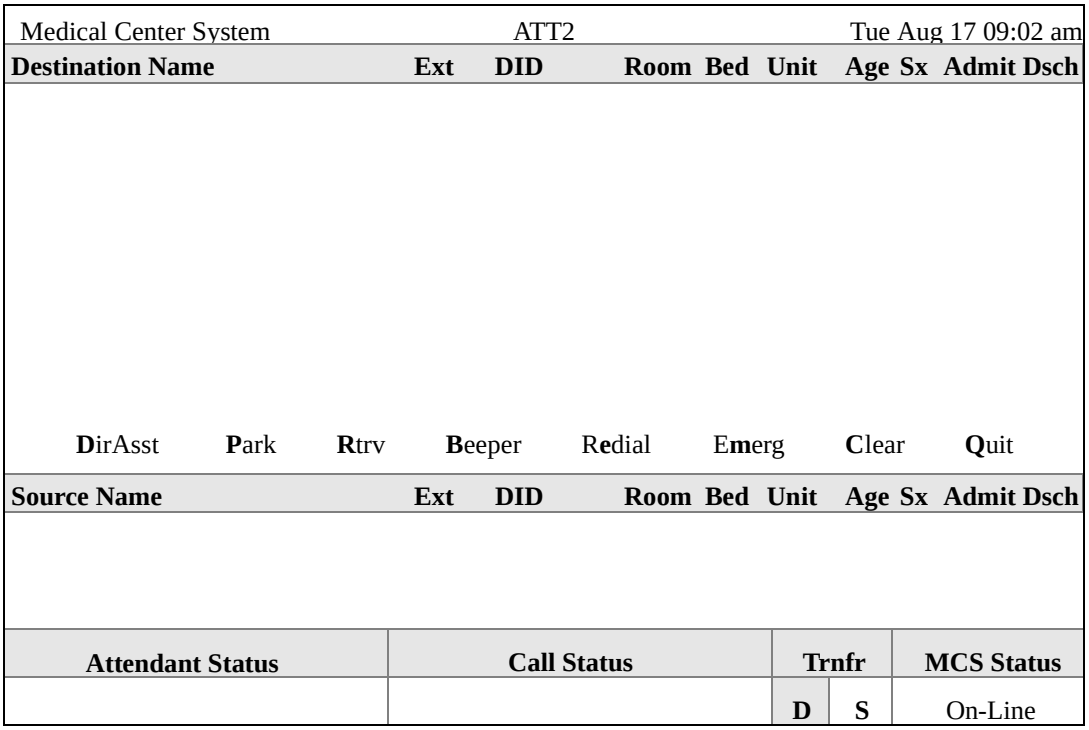

Figure A-3 Console Screen

Enter the name of the person to receive the page, and press **Enter**. If you press **Enter** without typing characters at the *Enter Name* prompt, the MCS attempts to select all of the names in the database that have a beeper number assigned. Currently, Physician and Employee records are the only records that contain a beeper number field.It is suggested that you enter at least one character of the name to be paged in order to limit the length of the database search.

An example of the results of a database look-up is shown in Figure A-4 on page 5.

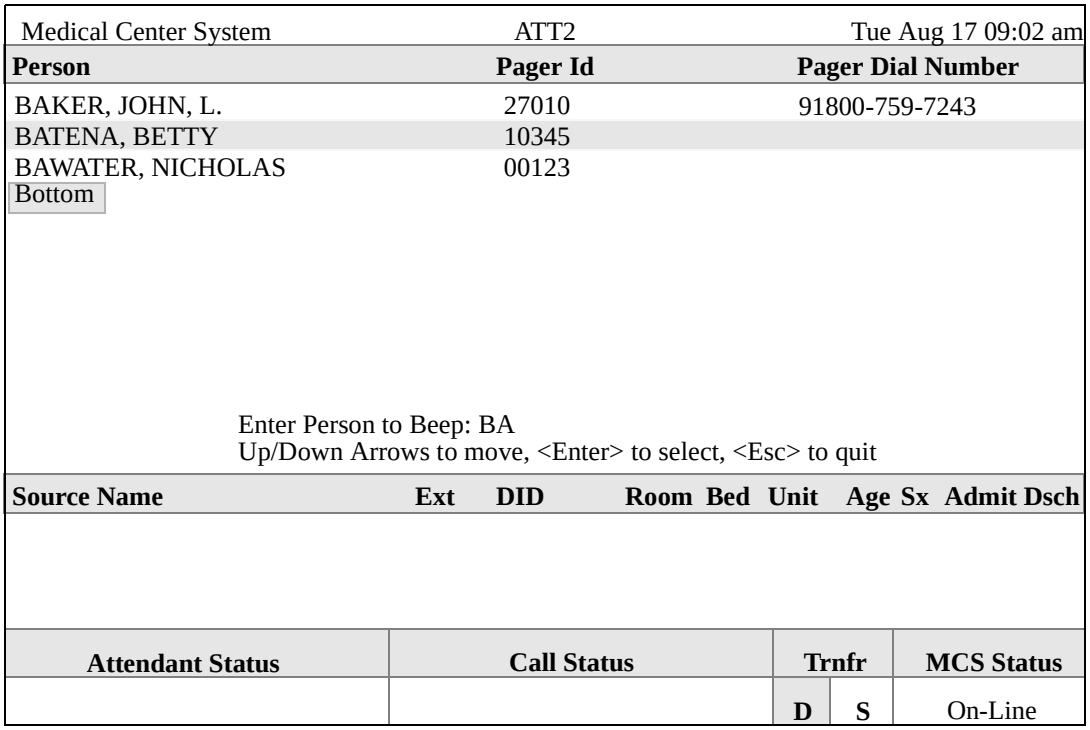

Figure A-4 Database Beeper Number Display

If more than one record is selected from the database, you must use the arrow keys to highlight the proper entry. To select the entry, press **Enter**. To return to the *Enter Person* prompt where you can change or add letters to the name look-up, type the desired character.

If the selected entry does not contain a dial number (e.g., Betty Batena in the example above), a screen similar to the one displayed in Figure A-5 on page 6 appears. The MCS processing of this type of call event is described in "Local Pager Process" on page 6.

If the selected entry does contain a dial number (e.g., John Baker in the example above), the MCS attempts to dial the number displayed in the *pager dial number* field. The processing of this type of call event is described in "Dial Number Process" on page 8.

Local Pager Process

Local pager records are those that have a pager ID but do not have a dial number. If you selected a local pager from the display list, follow the information provided in this section. For information about records that contain a dial number, see "Dial Number Process" on page 8.

The local page feature requires a connection to a local paging terminal system and interface software. If the paging system interface software is not installed or not active, an error message displays in the *Attendant Status* field at the bottom of the screen when you attempt to use this option.

Figure A-5 below illustrates the Pager Message screen that appears after you select a local pager record from the look-up screen illustrated in Figure A-4 on page 5.

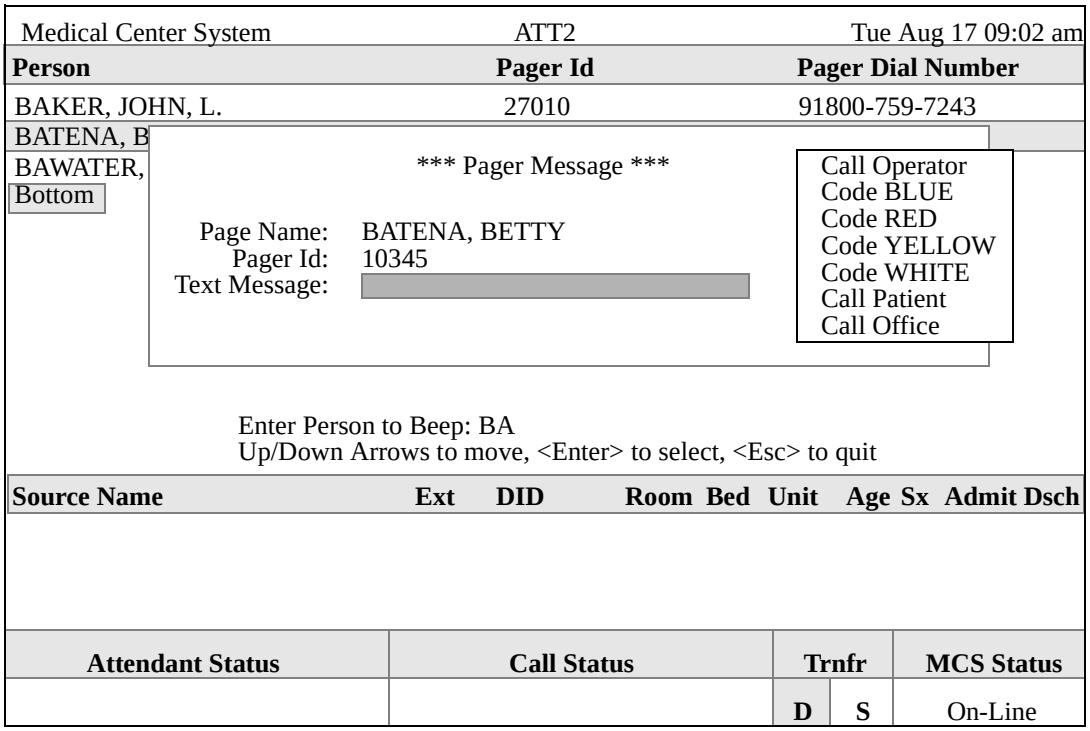

Figure A-5 Local Pager Message Screen

From the Pager Message pop-up screen, you can enter a text message to be sent to the displayed pager entry.

You can enter your own message or select site definable *canned* message text or both. To display a list of *canned* message text as illustrated in Figure A-5, expand the display. You can usually expand the display by pressing **Tab**. To scroll through the list, press any of the following keys: **Tab**, **Space Bar**, **UpArrow**, and **DownArrow**. Press **Enter** to select the highlighted message. To exit the input screens and return to the *Enter Person to Beep* prompt, press **Esc**. Pressing almost any other key (e.g., **BackSpace** or **Delete**) returns you to the *Text Message* prompt.

From the *Text Message* prompt, press **Enter** to accept the current text message.

A beeper interface message is sent to the local beeper interface. If the interface is not accepting messages, an error message will display at the bottom of the *Pager Message* screen.

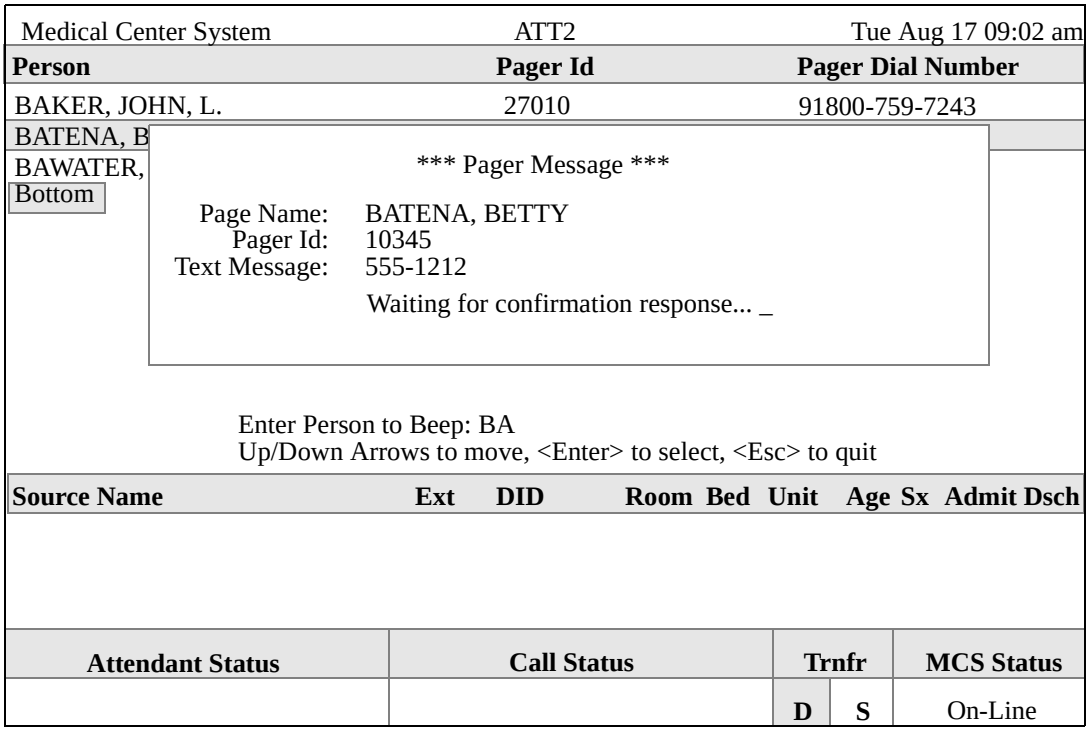

Figure A-6 Pager Message Error

Dial Number Process

This section describes the processing of a database entry that contains a *dial number*. If you selected an entry that contain a dial number from the display list illustrated in Figure A-4 on page 5, follow the information provided in this section. For information about records that do not contain a dial number, see "Local Pager Process" on page 6.

An entry that has a *dial number* can also have a *pager id*. This dial number feature has been kept for customers that currently use it. The MCS will attempt to place a call from the ATT console using the *NEAX2400 OAI make call* command. The number should contain the required access code data, etc., to place a call as if it were being dialed manually from the ATT console.

After placing a call, the MCS queries the beeper code table of the database. If there are any codes in the table, a list of these beeper codes display. (See Figure A-7.) The beeper code entries consist of a description field and a numeric code field. These numeric codes can be used to describe an event to the person being paged. You can use the commands listed at the bottom of the scroll window to move within the beeper code display.

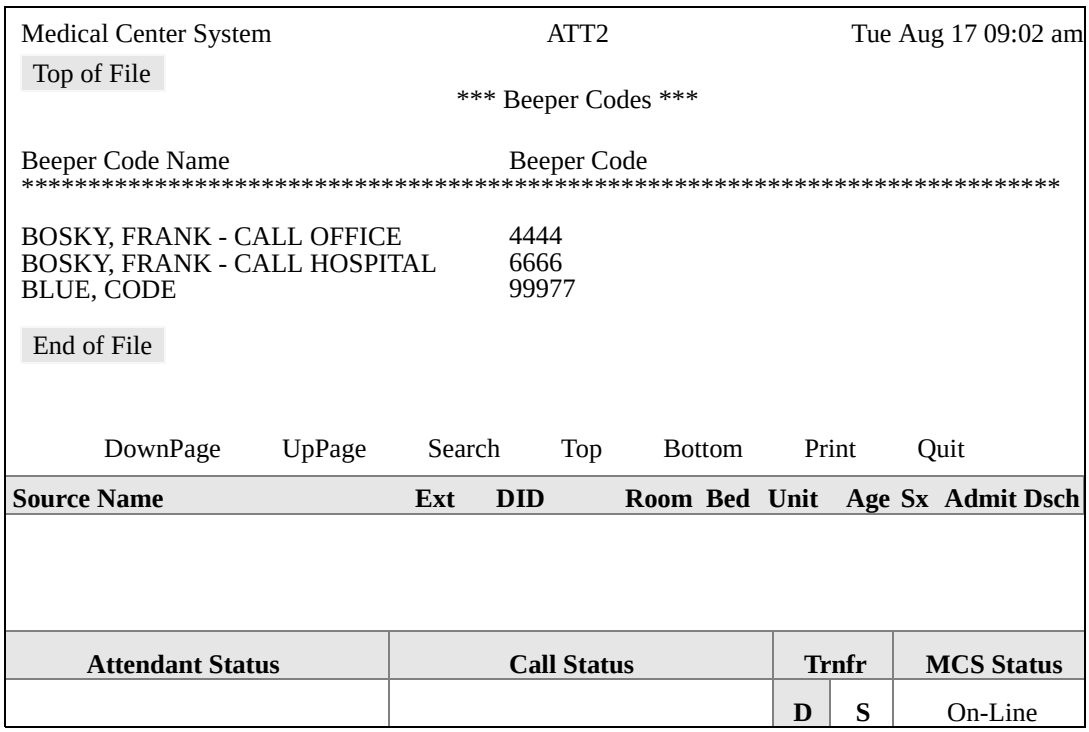

Figure A-7 Beeper Codes Screen

You will need to complete the rest of the paging process manually. Some Wide-Area paging systems require a Personal Id Number (PIN) to identify the person to receive the page. After you enter a PIN, you must enter a numeric code. These steps are separated by either tones or voice prompts.

After placing the call and displaying the beeper code screen you can return to the main operations menu by pressing **Esc**. If the MCS is unable to place the call an error message will display in the *Call Status* field at the bottom of the screen.

Error and User Interface Messages

This section contains a list of error messages that might appear during some beeper operations.

- *Beeper Interface Not Installed* - The beeper interface software that would handle the communications between UAP Applications and the local beeper terminal is either not installed or has not been installed properly.
- *Beeper Interface Offline* - The beeper terminal is not communicating with the beeper interface software or in not active. First check that the beeper interface is active, then check the physical connection between the UAP's communication port and the beeper terminal's communication port. If the error continues to occur, check the beeper interface configuration, and ensure that the communication device port is accurate.
- *Queue Status Error [x]* - While attempting to send an IPC message to the beeper interface, a message queue error occurred. The value *[x]* is the system error that occurred. This error occurs very infrequently. However, in the event that this error does occur, take note of the error number, and contact the site technician. Restarting the beeper interface and/or the MCS menu process should correct this error condition.
- *Unable to send beeper message* - The MCS menu process was unable to send an IPC message to the beeper interface. This error is usually a result of the beeper interface terminating abnormally. Make sure that the beeper interface software is active. If the software is active, this message indicates that other message interface problems are occurring in the system. Check the APM error log.
- *Failure: Timed Out* - The MCS menu process timed-out waiting for a response from the beeper interface software. If the beeper interface appears to be active and this message occurs frequently, you need to increase the response timer.
- *Failure: Out-of-service* - The beeper interface timed-out waiting for an acknowledgment from the beeper terminal. If the beeper terminal appears to be functioning properly and the error occurs frequently, you need to increase the response timer between the beeper interface software and the beeper terminal.

Interface Configuration

A special UNIX user account, *bpradm*, allows access to configurable interface data. This section presents most of the screens that you might need to access during installation and support of the interface.

Main Menu

After logging into the UNIX system with the user account name *bpradm*, the following menu displays.

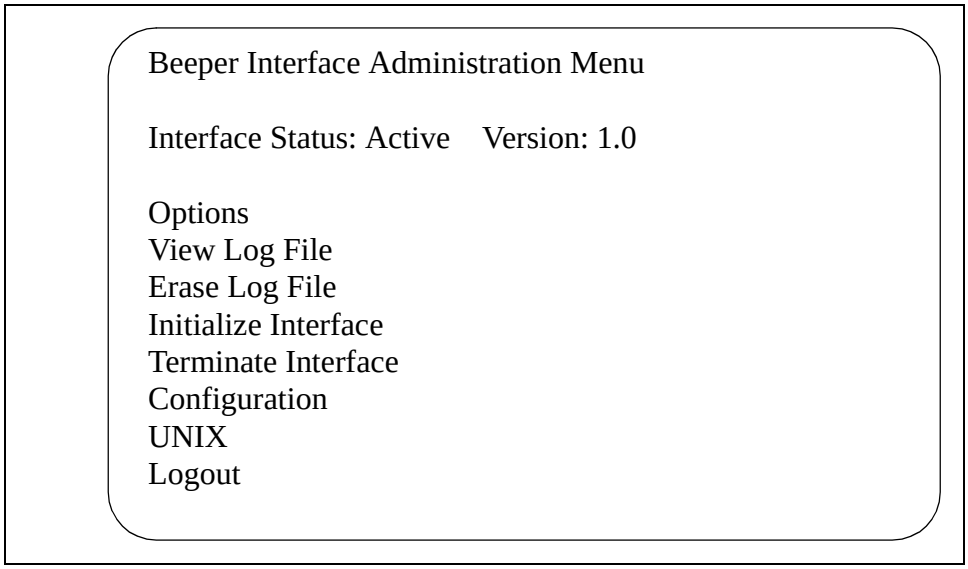

Figure A-8 Beeper Interface Administration Menu

In the figure above, the interface status is active. When the status is active, you can start and stop the interface from this menu as well as view some of the log files and set the interface configurable data.

Configuration Menu

Selecting **Configuration** displays the following menu of options:

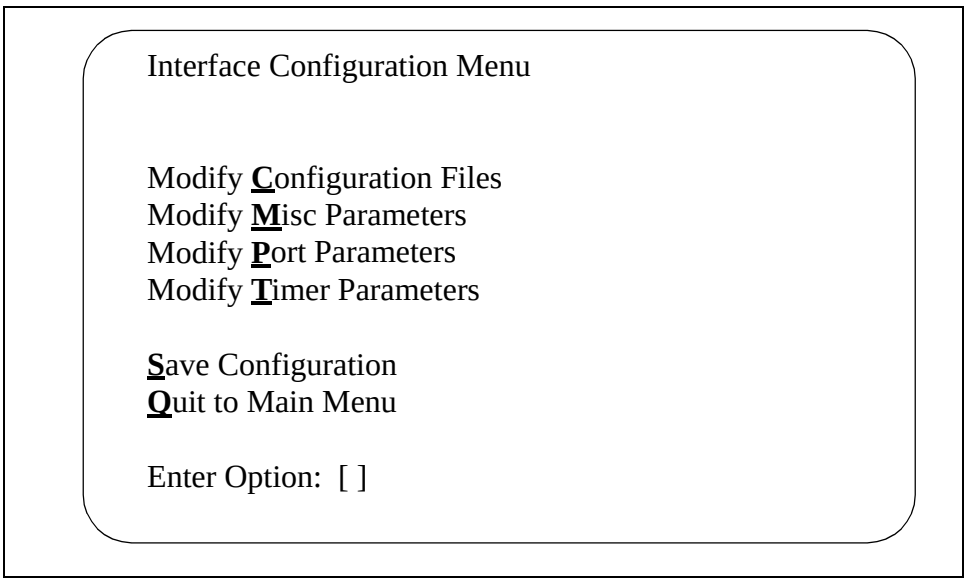

Figure A-9 Configuration Menu

Valid commands or options are indicated by the bold underlined letters. Each option is discussed in detail below.

Configuration Files

To modify the configuration files enter "**C**" at the **Enter Option** prompt. All the configuration files, will be displayed as shown in the following window:

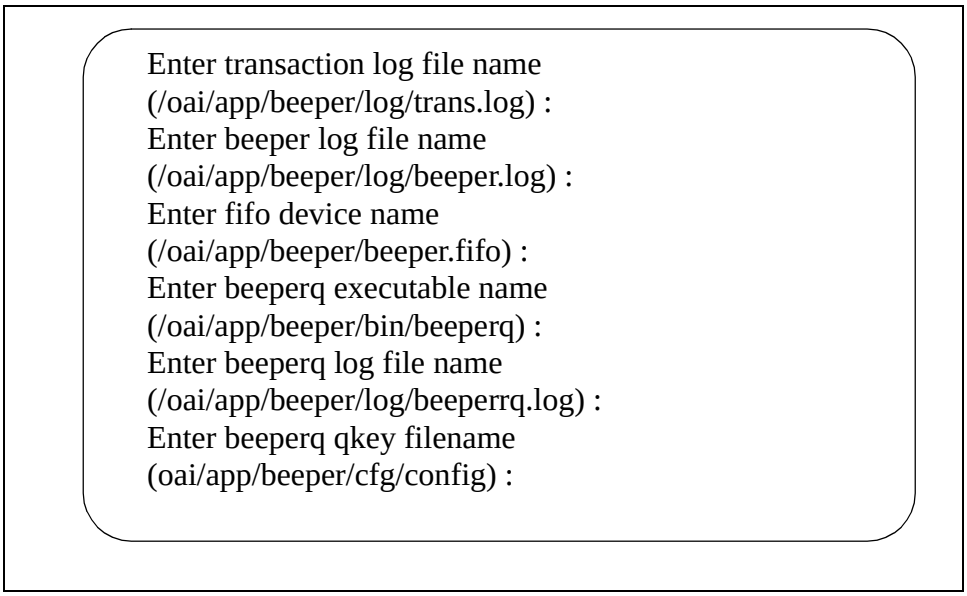

Figure A-10 Configuration Files

You will rarely need to change this information. These files indicate the location of configuration data.

Once the configuration file update is complete, you will be returned to the **Configuration Main Menu**.

Miscellaneous Parameters

To modify the miscellaneous parameters enter "**M**" at the **Enter Option** prompt. The window shown below will be displayed. Once you have entered the parameters you will be returned to the **Configuration Main Menu**.

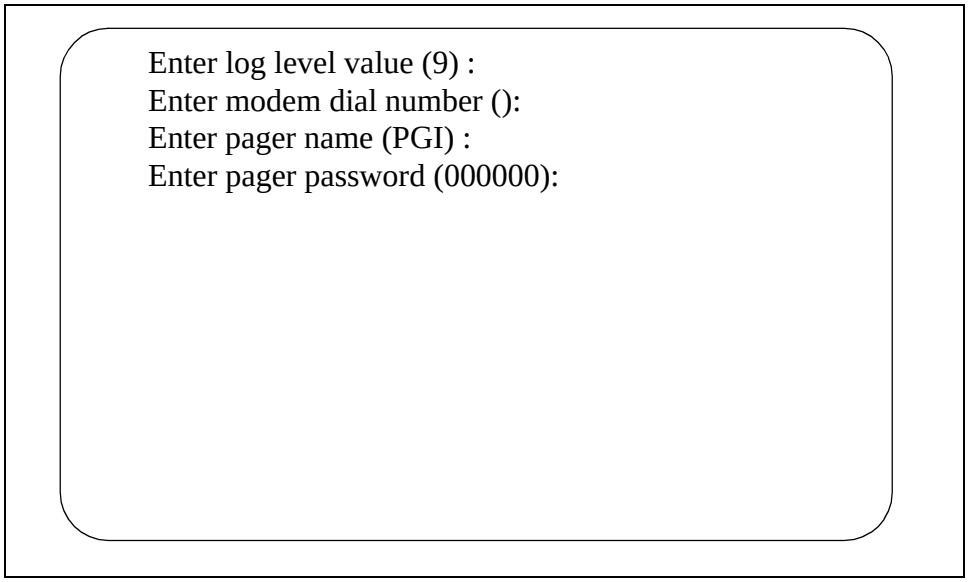

Figure A-11 Misc Parameters Window

These miscellaneous parameters are vendor specific. In most cases the default values should work.

Port Parameters

To modify the port parameters enter "**P**" at the **Enter Option** prompt. The window shown below will be displayed.

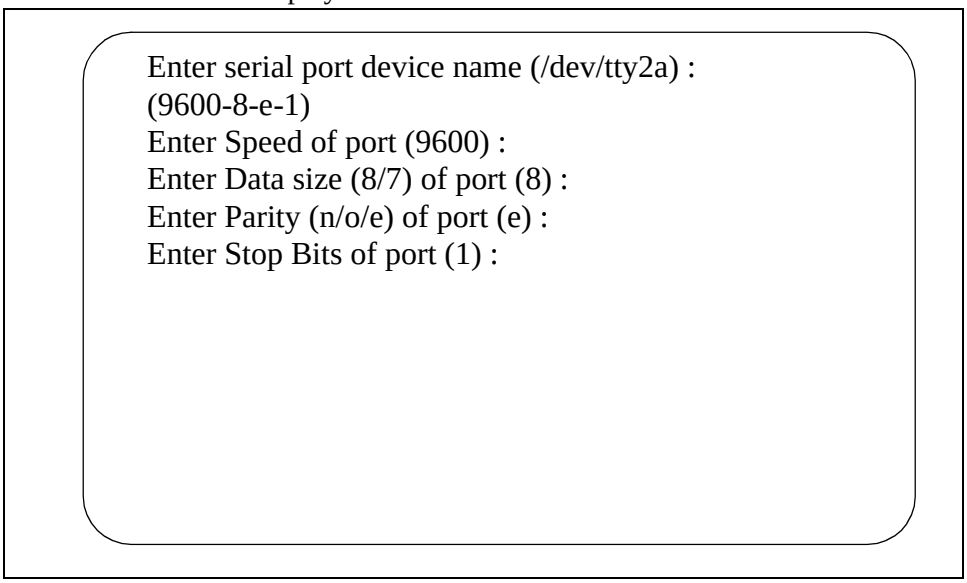

Figure A-12 Port Parameters Window

The port parameters are also vendor specific. In most cases the default values should work. Once you have entered the parameters you will be returned to the **Configuration Main Menu**.

Timer Parameters

To modify the timer parameters enter "**T**" at the **Enter Option** prompt. The timer parameters, will be displayed as shown in the window below.

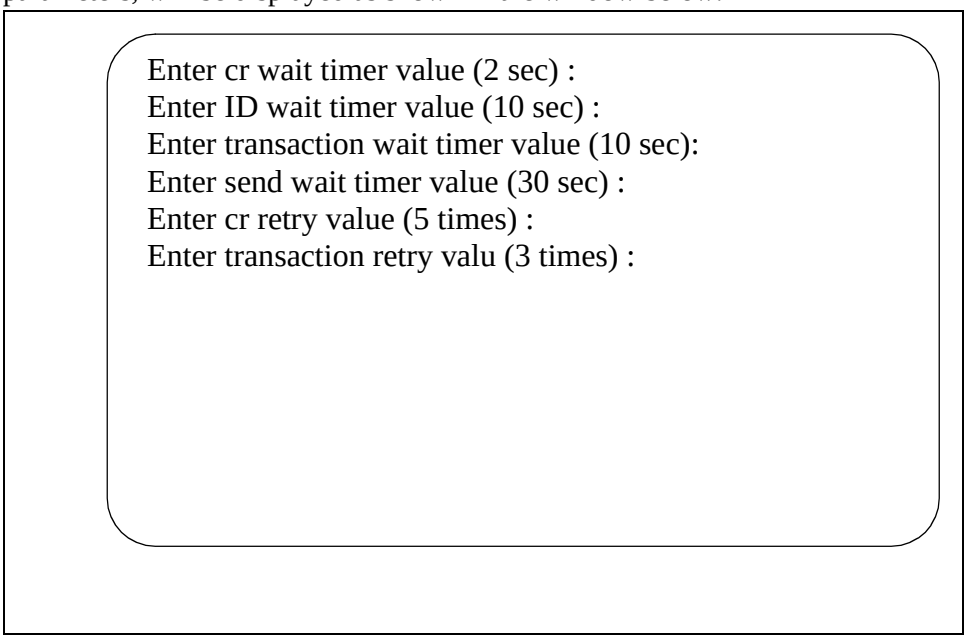

Figure A-13 Timer Parameters Window

The timer parameters relate to the TAP message format. These timing variables might require coordination with the vendor specific beeper terminal data. Once you have entered the parameters you will be returned to the **Configuration Main Menu**.

Viewing Transaction Log Files

You can view the current transaction log by selecting **View Log File** option from the main screen. Three log files are saved by the beeper interface: One traces transaction messages between OAI application and the beeper interface, a second traces transaction messages between the beeper interface and the beeper terminal interface, and the third is a transaction only file. The third transaction log file will contain the results of each beeper request received by the interface. The disposition of each request is logged in this file - success or failure. Below is an illustration of the View Log File Menu:

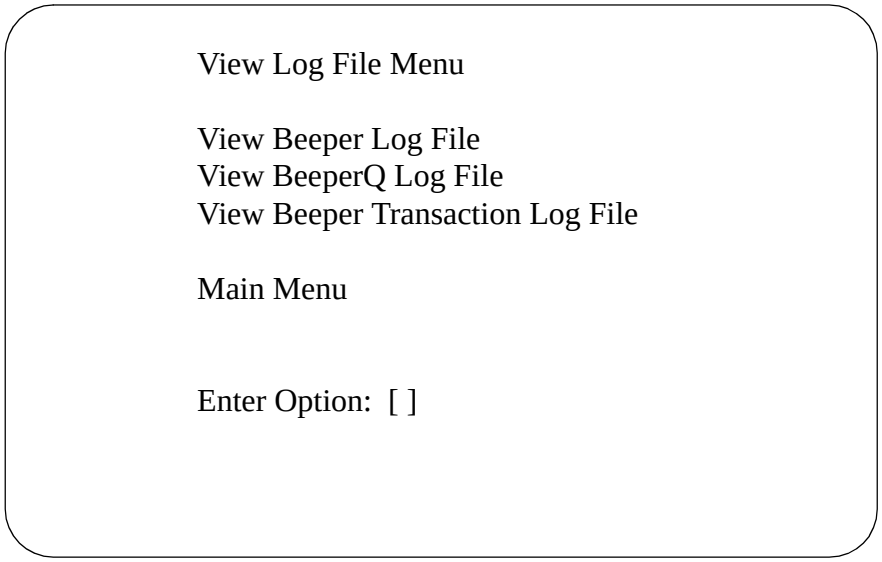

Figure A-14 View Log File Menu

Select the log file that you want to view. A screen similar to the following displays. You can use **PgUp** and **PgDn** as well as command line options that are listed across the bottom of the display. These options are described below:

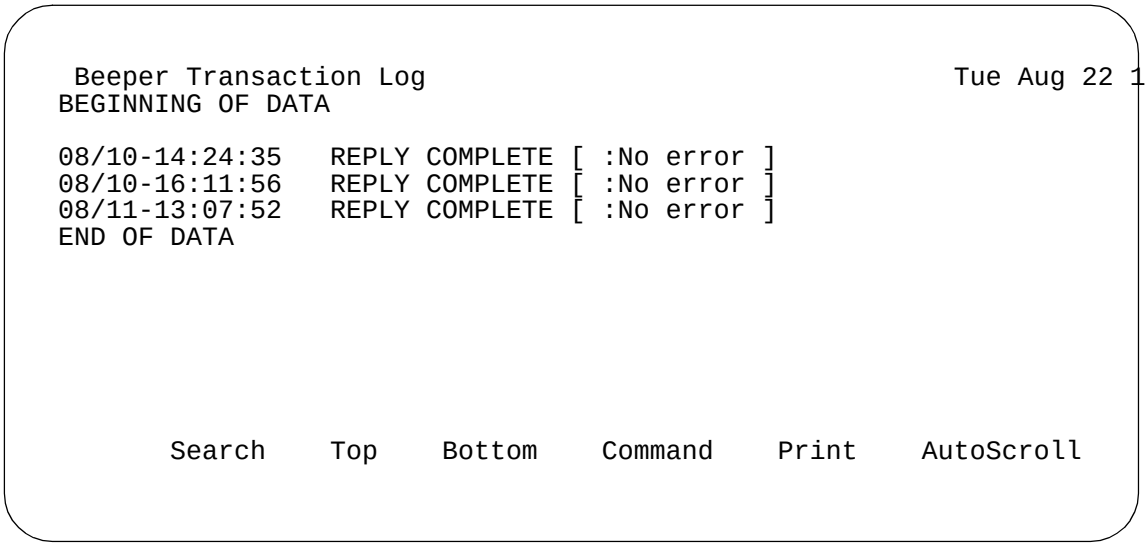

Figure A-15 Beeper Transaction Log

The **AutoScroll** feature allows you to view the file in real-time. As new messages are received, they display at the bottom of the screen. The other command line options allow you to move within the file, print a screen display or the complete file, or execute an external UNIX command.

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