MUSIC/SP

Version 5

Release 1

Administrator's Guide

Preface

About This Guide

This guide describes the MUSIC/SP Administrative Support Facility. Throughout this guide, the term MUSIC refers to MUSIC/SP (Multi-User System for Interactive Computing / System Product). Also, the descriptive title "MUSIC/SP Administrative Support Facility" may be referred to as simply the ADMIN facility.

The ADMIN facility enables you to install and maintain the MUSIC/SP system and optional products.

The functions and capabilities of the ADMIN facility include:

* Pre-configured system for immediate installation and use.
* Menu driven, easy-to-use system administrator functions.
* Executable procedures that reduce the need for detailed knowledge of system commands.
* Predefined procedures for installation of optional products and application of service.

The system administrator ensures that the system operates smoothly. In order to make administering the system as easy as possible, this guide contains the following two types of information:

* Information about administering the system, including:

    - Installing
    - Tailoring
    - Operating
    - Maintaining

* References to information in specific manuals

This document gives you specific information, and also serves as a guide to information contained in other manuals. As you become more and more familiar with your system, you will probably find yourself making greater use of the individual component product manuals.

Areas in this manual that have changed since the previous edition are identified by a flag (|) in the left-hand margin.

Who Uses This Guide

The person who uses this document is the system administrator of the system. This person need not be a system programmer.

Before you start using the ADMIN, you should be familiar with the basics of the MUSIC/SP system. Information on editing files, submitting jobs and running programs can be found in the user documentation.

How This Guide is Organized

This book contains the following information in five parts:

I.   **Planning** - contains a description of the system, a description of the administrator's role, and planning information.

II. **Installation and Tailoring** - describes how to install the system and how to tailor the functions and I/O configuration.

III. **Operating** - contains a description of how to start and stop the system, maintain data integrity and perform general operator tasks.

IV. **Administering** - describes authorizing users, managing system resources, increasing user and system file space, adding optional programs to the system.

V.   **Servicing** - describes what to do when you have a problem and how to update the system with available service.

MUSIC/SP Publications

The following is a list of all the current MUSIC/SP publications. These hardcopy publications can be ordered through the MUSIC Product Group. Online versions (softcopy) of the user publications can be accessed with the MUSIC/SP command called "MAN".

• *MUSIC/SP Administrator's Guide* (April 1996), describes how to install and operate MUSIC/SP.

• *MUSIC/SP Administrator's Reference* (April 1996), describes the internals of MUSIC/SP; utility programs and supervisory commands; gives detailed storage estimates; and documents console messages.

• *MUSIC/SP User's Reference Guide* (April 1996), describes how to use MUSIC/SP; its command language; terminal and batch set up; and job processing using the various language processors.

• *MUSIC/SP Guide for New Users* (April 1996), introduces new users to the use of MUSIC/SP via an IBM 3270-type workstation. It describes the FSI (Full Screen Interface) menu facility. New users learn how to use many programs on MUSIC/SP for such tasks as editing and running programs.

• *MUSIC/SP Office Applications Guide* (April 1996), describes the features of the TODO (Time, Office, and Documentation Organizer) facility. This includes the scheduling function, spell checking, and MUSIC/SCRIPT (text processing).

• *MUSIC/SP Mail and Conferencing Guide* (April 1996), describes electronic mail on MUSIC/SP. This includes Mail Profile, Mail Directory, using POP clients, and conferencing programs.

• *MUSIC/SP Internet Guide* (April 1996), describes the programs available on MUSIC/SP that provide communication between users through electronic conferencing and discussion lists. Emphasis is placed on access to the Internet with programs such as TELNET (logging on other computers), FTP (File Transfer Protocol), WEB (World-Wide Web), RN (Newsreader), and GOPHER (document search and

retrieval protocol).

- *MUSIC/SP Campus-Wide Information Systems* (*CWIS*) *Guide* (April 1996), describes how to create and maintain a Campus-Wide Information System, Help facility, or Classified Ads facility; how to do full-text searching; and how to provide gopher access. MUSIC/SP's resources are used to provide online distribution of information to a wide audience.

- *MUSIC/SP Teacher's Guide* (April 1996), describes various MUSIC/SP facilities related to the academic environment. Emphasis is placed on communication between teacher and student and easy methods for learning how to use MUSIC applications.

- *MUSIC/SP Client/Server* (*MCS*) *Booklet* (April 1996) provides an overview of MCS. Full documentation is available on the MCS diskette.

- *MUSIC/SP Personal Computer Workstation User's Guide* (May 1994), describes the components of the Personal Computer Workstation (PCWS). It is intended for the novice or experienced user of a personal computer, who wishes to connect to MUSIC/SP or another host system. Note that documentation for *PCWS for Windows* is available on the PCWS diskette.

Part I - Planning

Chapter 1. Introduction

What is the ADMIN Facility

ADMIN (Administrative Support Facility) is a user-friendly menu-driven environment under MUSIC/SP that helps a system administrator to install, service and administer MUSIC/SP easily and effectively. The menu system enables a system administrator with limited familiarity with MUSIC/SP system utilities to install a system with minimal time and effort.

The menu facility is task-oriented and guides the system administrator through various functions. These include:

- User authorization

- Backup and restoration of user data

- Tailoring system to specific environment

- Statistical and usage information of MUSIC/SP

The ADMIN facility software contains many executable procedures that reduce the system administrator's need for knowledge of detailed command format and syntax. Using a menu approach, the system administrator selects items to perform specific tasks. Results are displayed to the administrator. Education requirements for the system administrator have been reduced and the result is faster implementation of the system.

System Administrator's Role

The ADMIN facility allows a system administrator with little or no programming skills to install the system with minimal time and effort.

The system administrator has the job of installing the system. After installation, the administrator customizes and maintains the system, and acts as a focal point for user activities. Major tasks are:

- Installation and maintenance of MUSIC/SP

- Assigning and adding users and IDs

- Adding, deleting, or updating application programs to the system

- Managing change

- Monitoring performance

- Managing system security and backup

- Executing all activities supported on the ADMIN administration panel.

Chapter 2. Planning for Installation

Pre-Installation Task Overview

The system administrator should refer to "Installing MUSIC/SP" in Chapter 3 to perform system installation. This contains step by step instructions on how to install the pre-configured system or upgrade an existing system. Contained in Appendix A is an installation worksheet. It is recommended that this worksheet be completed prior to starting the installation. Questions such as the type of disks you will be using, the physical and logical addresses of disk volumes, and tape drives are included in this worksheet.

The *MUSIC/SP Administrator's Reference* contains detailed information on memory requirements, I/O configuration, performance options and system customization. This information is not required to install the pre-configured system.

Installation Objective

The objective is to make installation easy through the use of:

* Pre-configured MUSIC/SP environment

* VM Tailoring exec, enabling automatic creation of the proper virtual operating environment for MUSIC/SP

* User-friendly front-end panels for use by system administrator

* Executable procedures that reduce the need for detailed knowledge of system commands

* Automated method for installation of optional products and application of service

* Task-oriented documentation.

Hardware Requirements

* If you are running MUSIC/SP under VM, sufficient disk, workstations, tapes, and other I/O devices to support VM/SP, VM/IS, VM/XA, or VM/ESA.

* Supported disk device types can be the 3350, 3375, 3380, 3390, or 9345 devices. Also supported is the family of fixed block disks that include the 3370, 9332, 9335, 9336 devices (with the exception of the 3310 device since it is too small to support the minimum space). Once the system is installed, the following disk types are also supported: 3310, 3330, and 3340.

* MUSIC/SP is distributed in a preconfigured form on two volumes. On a VM system, they can be restored to the same or different physical disk devices. These disk volumes are preconfigured to support about 60 simultaneous users complete with the paging and scratch space required for them. Each of the two volumes will take about 160 megabytes of space. This includes about 30 megabytes of unused space to hold user files. This space can be reduced considerably if a lower number of simultaneous users is not required.

- One IBM 2440, 3410, 342X, 3430, 3480, 8809, 9346, 9347, or 9348 tape unit for use during installation and maintenance.

- Minimum processor real memory of 2 Megabytes is required. Additional memory will increase performance. If VM is used, you should make sure that VM does not page MUSIC/SP's memory by locking the pages or using the V=R option.

- At least one 3270-type workstation to be used by the system administrator. This can be a real or emulated 3270. On a 9371 processor, this can be the console.

- The following are supported as user workstations:

  - IBM 3178, 3179, 3191, 3193, 3194, 3278, 3279, 3270-PC, or 3180 display terminals

  - IBM 3161, 3162, 3163, 3164 ASCII display terminals

  - IBM 3101 ASCII TTY compatible terminal operating in character mode

  - IBM 2741 communications terminal with either EBCD or correspondence configurations

  - IBM Personal Computer

  - IBM Personal System / 2 *

  - Teletype ** Models 33, 35, and 43.

  - Workstations that are equivalent to those explicitly mentioned above may also function satisfactorily

Software Requirements

The IBM VS FORTRAN Version 1 Compiler and Library (Program Product 5748-FO3) or VS FORTRAN Version 2 Compiler, Library, and Interactive Debugger (Program Product 5668-806) is required by MUSIC/SP.

If you want to run multiple MUSIC systems under one processor then you require **VM/SP** (IBM program number 5664-167) or VM/SP HPO, VM/XA, or VM/ESA.

To communicate with systems on other processors (for example, sending electronic mail to another installation) you need to have **RSCS** (IBM program number 5748-XP1) in addition to VM.

To use interactive applications on other processors you require **VM/Pass-Through** (IBM program number 5748-RC1) in addition to VM.

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* Personal System/2 is a registered trademark of IBM Corporation.
** Teletype is a trademark of Teletype Corporation

Part II - Installation and Tailoring

Chapter 3. Starting the Installation and Tailoring

Installing MUSIC/SP

The distribution tapes contain the programs and datasets that make up the MUSIC/SP system. The goal of the installation procedure is to get that information off the tapes and onto disk. Those installing the system for the first time should follow the instructions in this chapter. If you are upgrading an existing system you only have to follow the instructions in the section "Upgrading an Existing MUSIC/SP System".

Distribution Tapes

Tape Volume Name	Contents
MUSICX	Dump of MUSICX disk.
MUSIC1	Dump of MUSIC1 disk.
SRC001	File 1: Installation EXEC. File 2: MUSIC source files.
SRC002	File 1: Stand alone DSF program. File 4: MUSIC source files.
SRC003	File 1: DMKDDR Stand-alone program File 6: Additional source files, if required
SRV001	Maintenance and optional products.
SRV002	Additional optional products if required.

Note: If you receive a single consolidated source tape (SRC001) instead of 3 source tapes (SRC001, SRC002, SRC003), files 3 and 4 of SRC001 contain the data from SRC002, and files 5 and 6 contain the data from SRC003. In that case, please mount SRC001 when a MUSIC batch job asks for SRC002 or SRC003.

Upgrading an Existing MUSIC/SP System

If you are currently running MUSIC/SP, you can upgrade directly to the current version of MUSIC/SP, without installing it as a new system. The upgrade procedure converts your existing system without disturbing user files, the userid table, or any optional products or packages you have installed.

If you are not running MUSIC/SP currently, skip to the next topic "Basic Installation Steps".

For upgrade procedures, submit the following job. Be sure to use tape SRC001 distributed with the new MUSIC/SP.

```
/SYS REGION=1024
/FILE 1 TAPE VOL(SRC001) LRECL(80) BLK(30720) SHR
/INC MFREST
TAPFIL=2,REPL=T,NAME='$GEN:UPGRADE.DOC'
```

This job restores the file $GEN:UPGRADE.DOC from the tape. The file contains detailed instructions for performing the upgrade. Print the file and follow the instructions.

Once the procedure is complete, skip ahead to the section "Transferring PCWS to the PC".

Basic Installation Steps

There are three major steps in the installation procedure. When MUSIC/SP is being installed under VM, the procedure is for the most part automated. In the stand-alone situation, without VM, some parts have to be done by hand.

Setup VM Directory and Initialize Disks

A CMS EXEC is provided to automate this. If you intend to use minidisks for MUSIC or have special local procedures for maintaining the VM directory, do not use the EXEC. In this case the local procedure should be used to allocate and initialize the minidisks and create the directory entry for MUSIC. If you are running MUSIC without VM there is no directory, but the disks must be initialized using the stand-alone Device Services Facilities (DSF).

Restore the MUSIC disks from tape

The MUSICX and MUSIC1 disks are loaded from the distribution tapes. The same procedure is followed regardless of whether VM is used.

Customize and Install Optional Products

If you are running without VM, a special procedure must be followed to reconfigure the distributed I/O configuration to match the one you have on the physical machine. Once complete the optional products can be installed.

```
        VM            Stand-Alone

  ┌──────────────┐  ┌──────────────┐
  │ INIT DISK    │  │  INIT DISK   │
  │ using EXEC   │  │              │
  │ or manually  │  │              │
  └──────────────┘  └──────────────┘
         │                 │
  ┌──────────────────────────────────┐
  │        RESTORE MUSICX             │
  │             ↓                     │
  │        RESTORE MUSIC1             │
  │             ↓                     │
  │             IPL                   │
  └──────────────────────────────────┘
         │                 │
              ┌──────────────┐
              │   =CONFIG     │
              └──────────────┘
                     │
              ┌──────────────┐
              │    NUCGEN     │
              └──────────────┘
         │                 │
  ┌──────────────────────────────────┐
  │          CUSTOMIZATION            │
  └──────────────────────────────────┘
```
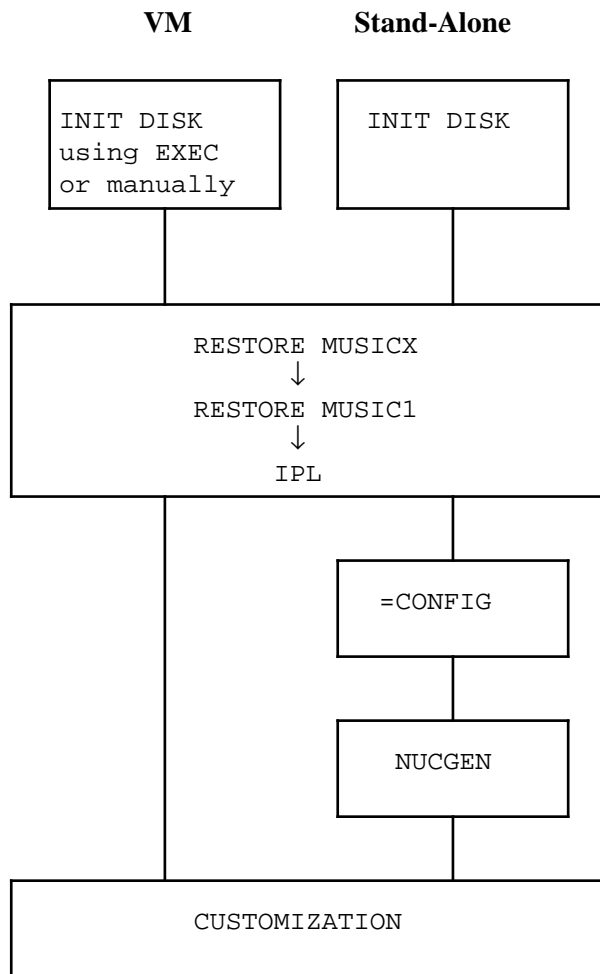
Figure 3.1 - Basic Installation Steps

Installation Under VM

The following describes the procedure for installing MUSIC/SP under VM. Skip to the section "Stand-Alone Installation" if you are not using VM.

Pre-Installation Planning

A worksheet is provided in Appendix A. This should be filled out prior to starting the installation procedure. The installation EXEC and disk restore procedures refer directly to information on this worksheet.

In order to fill out parts of the worksheet you may need the assistance of the VM operator, systems programmer, or someone who is familiar with your VM system.

You should also arrange for the use of two workstations and access to a tape drive. Throughout the installation the workstations will be defined as the "MUSIC CONSOLE" and the "SYSTEM ADMINISTRATOR'S TERMINAL". You should identify these workstations clearly to avoid any mix-ups during the installation.

An arrow symbol (===>) is used, in the text, to indicate areas where you must enter a response on one of the

workstations. Bold, uppercase letters show you the information you should enter. Information in brackets such as [x] is variable and should be obtained from the worksheet. Enter the indicated value from the worksheet without the brackets. The instructions will help you locate the information in these cases.

Logging onto the System Operator's ID

Begin at the MUSIC console. Logon to your VM/SP system using the VM System Support ID and password; items [A] and [B] from the worksheet in Appendix A. If your system operator is unwilling to provide you with this information, then he/she must perform these first two logon steps for you.

===> **LOGON [A]**

When your VM/SP system prompts you, enter the password.

===> **[B]**

Some system messages may appear at this time.

Note: If "MORE..." appears at the bottom right-hand of the screen, press the CLEAR key to continue. When "MORE..." no longer appears at the bottom of the screen, and a ready prompt ("R;") appears, you can proceed to the next step.

Loading the Installation Procedure

You will need to attach a physical tape drive [C] to the VM support virtual machine [A] as virtual device 181.

===> **ATTACH [C] [A] 181**

Mount and 'ready' the tape labelled 'SRC001' on the tape drive which you just identified by its physical address. If you are unexperienced at mounting a tape, you may want to ask for assistance from your VM/SP operator.

Once the tape has been mounted, and the tape drive is 'ready', you can load the installation procedures files by entering the following command.

===> **TAPE LOAD**

The system will load three files, then indicate on your workstation that it has reached the end of the tape. It is suggested that you then remove the tape from the tape drive to avoid having it accidentally damaged.

Starting the Installation Procedure

The automatic installation EXEC cannot be used if you are using minidisks for MUSIC or have nonstandard procedures for maintaining your VM directory. If either of these are the case, skip to the section on "Updating the VM Directory Manually". Start the installation procedure by entering the following command.

===> **MUSIC**

You will be prompted to indicate whether or not this is a first-time install. This is, so you should enter a 1

(one) in response.

===> **1**

Some introductory information will now be displayed. Again, if "MORE..." appears at the bottom of the screen, press the CLEAR key. This allows information that was not able to fit on the first screen to be shown on a subsequent screen. Once you have read all of the introductory information, you should respond GO.

===> **GO**

You will then be asked the physical address of the disk volume for MUSICX. You should reply using the address you recorded on the worksheet in Appendix A (item [D]).

===> **[D]**

Next, you will be prompted to indicate the device type of that disk volume. Again, use the information from the worksheet (item [E]).

===> **[E]**

Similarly, you will need to enter the physical address and device type for the MUSIC1 disk volume. First, indicate the physical address of the MUSIC1 disk volume, which you recorded on the worksheet (item [F]).

===> **[F]**

You will then be prompted for that disk volume's device type. Use the information from the worksheet (item [G]).

===> **[G]**

The system will now prompt you to enter a password, which it will assign as the initial password for the MUSIC virtual machine (ID) it will create for you. You may use your own password, or simply press the ENTER key and the default password MUSIC will be used. If you did not choose your own password on the worksheet (item [H]) and choose to use the default password, be sure to record it in item [H] of the worksheet at this time.

===> **[H]**

You will now have to determine how much main storage to allocate to the MUSIC system. The default value is already set to 2 megabytes. You may increase this, up to 16 megabytes, according to your MUSIC system needs. This is also a good idea if you have adequate real storage.

Enter the amount of main storage you want to allocate, as indicated earlier on your worksheet (item [I]).

===> **[I]**

You will need to indicate whether or not MUSIC will be run in a 'VIRTUAL=REAL' storage area. You should check with someone familiar with the planning of your VM/SP system. Otherwise, if you are not sure, assume it will NOT be running in a 'VIRTUAL=REAL' storage area. Enter the response (YES or NO) which you recorded on the worksheet (item [J]).

===> **[J]**

The online instructions will now ask you to indicate the VM environment under which MUSIC is being installed. Use the numeric value you used on the worksheet (item [K]), where 1 represents VM/IS, 2 represents VM/SP HPO, and 3 represents VM/SP or other VM environment.

===> **[K]**

You are now given the option to allocate another optional disk volume to the MUSIC virtual machine. This is not required, although it may improve performance for your MUSIC system. It is recommended you only do so if your MUSIC/SP environment will require a second disk volume (see Chapter 12 "Increasing User Quotas and System Disk Space" in this guide). Otherwise, respond NO.

Enter the response (YES or NO) you recorded on the worksheet (item [L]).

===> **[L]**

If you responded NO, you should continue to the following section, "Running the Device Support Facilities (ICKDSF)" on page 2-7, since the following two prompts will not appear.

If you responded YES, you will prompted to enter the physical address of the optional disk volume. Use the address you recorded on the worksheet (item [L], sub-item [a]).

===> **[L(a)]**

You will then be prompted to enter the device type for the optional disk volume. Again, refer to the worksheet (item [L], sub-item [b]).

===> **[L(b)]**

Running the Device Support Facilities (ICKDSF)

At this point, the installation procedures will use the information you entered to tailor a CMS file for the MUSIC directory entry, update the VM directory, create a file to monitor the allocated disk volumes, create a unique exec for the next part of the installation procedures, and generate control statements for the Device Support Facilities (ICKDSF). You can follow these procedures by watching the workstation, since messages will indicate these steps are taking place.

Warning: If you experience problems anywhere in this section ("Running the Device Support Facilities (ICKDSF)") you will need to restart by pressing the PA1 key, typing 'IPL CMS', and returning to "Starting the Installation Procedure".

The ICKDSF program that initializes the disks will begin automatically. Note that initializing a disk overwrites any previous contents. After approximately one minute, ICKDSF will have been initialized (however, the screen will still indicate "RUNNING" mode in the lower right-hand corner; after one minute, you can assume it is ready).

Note: If "MORE..." appears instead, you will need to press the CLEAR key to clear the screen and allow additional messages to appear.

You will now need to identify your workstation to ICKDSF. This is done by pressing the ENTER key once.

===> **(press the ENTER key)**

After you have identified yourself to ICKDSF, it will prompt you to define an input device. Respond exactly as follows.

Note: Note that the '0's are numeric zeros.

===> **2540,00C**

Next, ICKDSF will want you to define an output device. Respond exactly as follows.

===> **CONSOLE**

ICKDSF may now attempt to initialize the disk volumes you identified earlier, unless you are not installing MUSIC for the first time. If you ARE installing MUSIC for the first time, you will be prompted to respond with a U or a T, where U allows ICKDSF to alter contents, and T terminates the facility altogether.

Note: Be sure to respond U for each disk volume, or you will need to restart as explained in the warning above.

===> **U**

You will need to respond with a U for each of the disk volumes which were allocated to MUSIC. Once all of the disk volumes have been altered, ICKDSF will indicate that it has completed, with a maximum condition code of zero (message number ICK00002I).

Note: If you do not get this message, or experience any other problems during ICKDSF processing, you will need to restart as explained in the warning above.

Finishing the CMS Part of the Installation

With the ICKDSF completed, you may now finish the CMS portion of the installation procedure. First, you will need to place your workstation into 'CP READ' mode. This is done by pressing the PA1 key (you may need to use the ALT key with the PA1 if your keyboard indicates it is required).

===> **(press the PA1 key)**

A message, 'CP READ', should appear at the bottom right part of your screen. If not, you should press the 'PA1' key again, until it does appear.

Next, you will need to start CMS again. Type the following command to do so.

===> **IPL CMS**

Once CMS has restarted, a message, 'VM READ', will appear at the bottom right part of your screen. At this point, press the ENTER key.

===> **(press the ENTER key)**

This will put you in 'RUNNING' mode, and a 'ready' prompt ('R;') will appear. At this time, you should begin execution of the unique program which was created earlier according to the information you entered. To do so, you should enter the following command.

===> **MUS2**

The program will begin, then return messages to you, indicating the address for the disk volumes you will need to know for later installation procedures.

Warning: Be sure to record these addresses as items [M] and [N] on the worksheet, under the section labeled "Device Addresses for the Disk Volume Restores", as this information is provided only once during the installation procedures.

At this point, the CMS part of the installation procedure is completed. You should now skip to the section "Restoring the MUSICX Disk Volume".

Updating the VM Directory Manually

This section is for those not using the automatic installation EXEC. The MUSIC virtual machine must be defined in the VM Directory so that the virtual address used by the distributed MUSIC system match those defined in the directory. The file SAMPLE DIRECT, that was restored from the distribution tape contains the basis for MUSIC's directory entry. This file contains the workstation and spooling device definitions. Create the VM directory entry for MUSIC based on this file.

When creating the directory entry you will have to add USER and OPTIONS statements. Disks must be defined using the DEDICATE or MDISK statements. A minimum of 2 Megabytes of storage is required. The ECMODE, REALTIMER, and BMX options must be specified. The VCUNOSHR option can reduce unnecessary contention on workstation I/O. Giving the MUSIC virtual machine operator privileges will simplify maintenance tasks. A low number (high priority) should be chosen for the priority to maximize the systems performance. It is also useful to have the system automatically IPLed when it is logged on by specifying the address of the MUSICX disk on an IPL statement. The following is given as an example:

```
USER MUSIC MUSIC 2M 16M ABCDEG 5
OPTIONS REALTIMER ECMODE BMX VCUNOSHR
IPL 120
CONSOLE 01F 3215 T OPERATOR
DEDICATE 120 C00
DEDICATE 220 C01
SPOOL 00C 2540 READER J
SPOOL 00D 2540 PUNCH
SPOOL 00E 1403
SPOOL 011 2540 PUNCH
SPOOL 012 2540 PUNCH
SPOOL 013 2540 PUNCH
SPOOL 017 1403
SPOOL 018 2540 READER M
SPOOL 019 2540 READER A
SPECIAL 520 3270
SPECIAL 521 3270
SPECIAL 522 3270
SPECIAL 523 3270
etc...
```

Record your choice of storage size, device addresses and passwords on the installation worksheet. This information will be required in subsequent steps.

The device addresses for the workstations and printers should not be changed.

The address of the disk should be defined using the following table. The first device of a specific type should be assigned the first address from the list. The second device, the next address and so on. FBA refers to "Fixed Block Architecture" disks like 3310, 3370, 9332, 9335 or 0671.

```
Type          addresses

FBA           120,220,320,321,322,323
3350          130,230,330,331,332,333
3375          140,240,340,341,342,343
3380          150,250,350,351,352,353
3390          160,260,360,361,362,363
9345          170,270,370,371,372,373
```

The distributed system requires two disk volumes. Minidisks can be used to provide this disk space although they are NOT recommended for production systems since there may be significant performance problems depending on what is sharing the disks with MUSIC. If minidisks are used, the virtual device addresses should be chosen based on device type from the table above. Each disk must have a minimum of 160 megabytes of space. The following table illustrates the minimum space for various disk types.

```
FBA           320,000 blocks
3330          808 cyl
3350          380 cyl
3375          640 cyl
3380          445 cyl
3390          445 cyl
9345          500 cyl
```

Once the directory entry has been create for MUSIC proceed to the next step.

Initializing the Disk Volumes

This step is not required for Fixed Block Architecture disks (3370, 9332, 9335). If you are using FBA disks skip to the section "Restoring the MUSICX Disk Volume". The Device Services Facility (DSF) is used to initialize the disks. There is a loadable copy of it on the SRC002 tape, but you could also use the version on your VM system. DSF writes the volume label, a VTOC, and checks the disk for errors. Any data previously on the disk is lost. Minidisks used with MUSIC must also be initialized using DSF. For complete information on DSF consult the publication *DSF User's Guide and Reference* (GC35-0033).

Logon to the MUSIC virtual machine.

===> **LOGON MUSIC**

When prompted for the password enter [H] from the worksheet.

===> **[H]**

Attach the tape drive to MUSIC.

===> **ATTACH [C] MUSIC 181**

Mount the SRC002 tape on the tape drive and ready the tape. The DSF program can now be loaded by IPLing from the tape as follows.

===> **IPL 181**

After the tape stops turning, press the enter key on your workstation.

===> **(press ENTER)**

DSF will display some messages and then ask you to identify the input device. Respond as follows.

===> **CONSOLE**

It will now ask for an output device. Again respond.

===> **CONSOLE**

The INIT command can now be used to initialize the disks. Parameters are dependent on the type of devices being used and may not all fit on one line. A hyphen is used to continue the INIT command. The format is as follows.

===> **INIT UNIT(uaddr) DEVICETYPE(type) VOLID(vol) -**
===>   **OWNERID(MUSIC) VTOC(0,1,ntrk) NOVERIFY**

```
    uaddr       - virtual address of the disk
    dev         - device type (e.g. 3380, 3375, 3350)
    vol         - Volume name (e.g. MUSICX, MUSIC1)
    ntrk        - Number of tracks per cylinder less one.
                    3380, 3390, 9345 - 14
                    3375 - 11
                    3350 - 29
```

If minidisks are being used, the MIMIC parameter must specify the number of cylinders being used.

    MIMIC(MINI(cyls))

If DSF release 15 or later is used, you must add the NIX option after NOVERIFY on the INIT command. This is needed to prevent creation of an indexed VTOC.

Issue an INIT command for MUSICX and wait for it to complete. Then initialize MUSIC1. Once all the disks are initialized terminate DSF as follows.

===> **(Press PA1)**

===> **SYSTEM RESET**

Now proceed with the next step.

Restoring the MUSICX Disk Volume

To restore the MUSICX disk volume, you will need to mount and ready the tape labeled 'MUSICX' on the same tape drive you used before (physical address on worksheet, item [C]).

Once the tape has been mounted, and the tape drive is ready, you should load the supplied restore utility by entering the following command.

===> **IPL 181**

The restore utility will be loaded in approximately 10-20 seconds.

Note: Do NOT unload the tape from the tape drive at this time, since you still need to restore the MUSICX disk volume using data stored on the tape.

You will now need to initiate the restore utility. To do so, press the ENTER key.

===> **(press the ENTER key)**

The restore utility will then prompt you to enter the device address of the MUSICX disk volume. You should use the device address supplied to you during the CMS part of the installation procedure, which you should have recorded on the worksheet (item [M]).

Note: Be sure to use the slash ('/') and the numeric zero ('0') as shown in the command below.

===> **/REPLY 0 [M]**

The restore facility will then want to know whether the device type is of Fixed Block Architecture (FBA). If the device type of the disk volume for MUSICX, which you recorded on the worksheet (item [E]), is a 3370, 9332, or 9335, you should respond YES (for 'xxx' below). Otherwise, you should respond NO.

===> **/REPLY 0 xxx**

The restore will now begin automatically for the MUSICX disk volume. The entire process will take anywhere from 15 to 45 minutes, depending on the device type you are using. The tape will not constantly be in motion during the restore process.

Once the restore is complete, the restore utility will indicate that the MUSICX volume has been restored with a 'Normal End' message on your workstation. You should then have the tape unloaded from the tape drive.

Restoring the MUSIC1 Disk Volume

To restore the MUSIC1 disk volume, you will need to mount and ready the tape labelled 'MUSIC1' on the tape drive you previously used during the MUSICX disk volume restore.

Once the tape has been mounted, and the tape drive is ready, you should load the supplied restore utility by entering the following command.

===> **IPL 181**

The restore utility will be loaded in approximately 10-20 seconds.

Note: You should NOT unload the tape from the tape drive at this time, since you still need to restore the

MUSIC1 disk volume using data stored on the tape.

You will now need to initiate the restore utility. To do so, press the ENTER key at this time.

===> **(press the ENTER key)**

The restore utility will then prompt you to enter the device address of the MUSIC1 disk volume. You should use the device address supplied to you during the CMS part of the installation procedure, which you should have recorded on the worksheet (item [N]).

Note: Be sure to use the slash ('/') and the numeric zero ('0') as shown in the command below.

===> **/REPLY 0 [N]**

The restore facility will then want to know whether the device type is of Fixed Block Architecture (FBA). If the device type of the disk volume for MUSICX, which you recorded on the worksheet (item [G]), is a 3370, 9332, or 9335, you should respond YES (for 'xxx' below). Otherwise, you should respond NO.

===> **/REPLY 0 xxx**

The restore will now begin automatically for the MUSIC1 disk volume. The entire process will take anywhere from 15 to 45 minutes, depending on the device type you are using.

Once the restore is complete, the restore utility will indicate that the MUSIC1 volume has been restored with a 'Normal End'. You should then have the tape unloaded from the tape drive.

Completing the Installation Procedures

At this point, the MUSIC/SP system, Version 2, Release 1, will have been restored on the two MUSIC disk volumes. You can now logoff from the VM System Support user ID.

===> **LOGOFF**

The pre-generated MUSIC system is now installed.

First Time Initialization

You are now ready to start up the MUSIC system for the first time. Logon the MUSIC console using the MUSIC userid and password.

===> **LOGON MUSIC**

When prompted for the password, use worksheet item [H].

===> **[H]**

The MUSIC system will be automatically loaded. Wait for the message

```
    M077 Enter operator id or special options or HELP
```

to appear. If the message does not appear within a minute, press the ENTER key to identify the console to the system. The M077 message should now appear.

There are a number of options that can be entered in response to the M077 message. For more details see the chapter on system operations in the Administrator's Reference. Normally you would respond with a blank line (press ENTER) to automatically start the system. Since this is the first time the system is being used you must reset the system accounting file.

===> **=RESET**

When the M077 prompt again appears respond by pressing the ENTER key and the system will automatically startup. This process will take a few minutes and various messages will be displayed on the MUSIC console. If the screen fills up press CLEAR to go to the next page.

When the message

```
    M300 BATCH IDLE
```

appears, the system is initialized and ready for use.

VM Notes

When the MUSIC CONSOLE screen fills up and message HOLDING appears, VM will stop MUSIC until someone clears the screen on the console. For this reason it is best to run MUSIC as a disconnected virtual machine. Once MUSIC has been started it can be disconnected by entering.

===> **/CP DISC**

The default directory entry for MUSIC specifies OPERATOR as the secondary console for MUSIC, so once MUSIC is disconnected any console messages are automatically rerouted to OPERATOR. The addition OPERATOR can send console commands to MUSIC using the VM SEND command.

The AUTOLOG1 virtual machine is used to automatically start up other service virtual machines when VM is loaded. MUSIC is a good candidate to be autologged. Modify the PROFILE EXEC on AUTOLOG1 to automatically start MUSIC.

Now skip to the section "Updating to the Current Release".

Stand-alone Installation

This section describes the procedure for installing MUSIC/SP without VM. The steps are basically the same as for the VM procedure, except for the extra configuration step to adjust the distributed configuration to match the actual I/O configuration of the hardware. Before beginning the installation process make sure you know the device types and addresses of the disks, tapes, workstations and printers on your system. The distributed system requires two disk volumes, MUSICX and MUSIC1. Choose these to be on different channels if possible. If more disk volumes are available they can be added to the system later.

Initializing the Disk Volumes.

This step is NOT required for Fixed Block Architecture disks (3370, 9332, 9335). If you are using FBA disks skip to the section "Restoring the MUSICX Disk Volume". The Device Services Facility (DSF) is used to initialize the disks. There is a loadable copy of it on the SRC002 tape. DSF writes the volume label, a

VTOC, and checks the disk for errors. Any data previously on the disk is lost. For complete information on DSF consult the publication *DSF User's Guide and Reference* (GC35-0033).

Mount the SRC002 tape on the tape drive and ready the tape. Select the program load option on the system console, enter the address of the tape drive in the appropriate field, start the load operation.

After the tape stops moving and the processor enters WAIT state, press the REQUEST key or ENTER key on the system console.

DSF will now issue the ICK005E message to ask you to define the input device. Define the console as the input device by typing CONSOLE and pressing the enter key.

===> **CONSOLE**

DSF will now issue the ICK006E message to prompt for an output device. Again define the console.

===> **CONSOLE**

DSF may now prompt you for the time and date it the clock is not correctly set. Enter the information in the indicated format and press ENTER.

The INIT command can now be used to initialize the disks. Parameters are dependent on the type of devices being used and may not all fit on one line. A hyphen is used to continue the INIT command. The format is as follows.

===> **INIT UNIT(uaddr) DEVICETYPE(type) VOLID(vol) -**
===>   **OWNERID(MUSIC) VTOC(0,1,ntrk) NOVERIFY**

```
        uaddr      - address of the disk
        dev        - device type (e.g. 3380, 3375, 3350)
        vol        - Volume name (e.g. MUSICX, MUSIC1)
        ntrk       - Number of tracks per cylinder less one.
                        3380, 3390, 9345 - 14
                        3375 - 11
                        3350 - 29
```

If DSF release 15 or later is used, you must add the NIX option after NOVERIFY on the INIT command. This is needed to prevent creation of an indexed VTOC.

Issue an INIT command for MUSICX and wait for it to complete. Then initialize MUSIC1 and wait for it to complete. Now proceed to the next step.

Restoring the MUSICX Disk Volume

To restore the MUSICX disk volume, mount and ready the tape labeled MUSICX. Once the tape is ready, load the restore program from the tape. This is done from the system console by selecting the program load option, specifying the device address of the tape in the appropriate location and executing the program load function. The restore utility take approximately 10-20 seconds to load.

Note: Do NOT unload the tape from the tape drive at this time, since the utility will restore data from this

tape to the MUSICX disk.

Press the ENTER key on the system console to start up the restore utility program. If nothing happens after ten seconds press it again.

===> **(press the ENTER key)**

The restore utility will then prompt you to enter the device address of the MUSICX disk volume.

Note: Be sure to use the slash ('/') and the numeric zero ('0') as shown in the command below. 'xxx' is the device address of the MUSICX disk.

===> **/REPLY 0 xxx**

The restore facility will then want to know whether the device type is of Fixed Block Architecture (FBA). If the device type of the disk volume for MUSICX is a 3370, 9332, or 9335, you should respond YES (for 'xxx' below). Otherwise, you should respond NO.

===> **/REPLY 0 xxx**

The restore will now begin automatically for the MUSICX disk volume. The entire process will take anywhere from 15 to 45 minutes, depending on the device type you are using. The tape will not constantly be in motion during the restore process.

Once the restore is complete, the restore utility will indicate that the MUSICX volume has been restored with a 'Normal End' on the workstation. Unload the tape from the drive.

Restoring the MUSIC1 Disk Volume

To restore the MUSIC1 disk volume, mount and ready the tape labeled MUSIC1. Once the tape is ready, load the restore program from the tape. This is done from the system console by selecting the program load option, specifying the device address of the tape in the appropriate location and executing the program load function. The restore utility take approximately 10-20 seconds to load.

Note: Do NOT unload the tape from the tape drive at this time, since the utility will restore data from this tape to the MUSIC1 disk.

Press the ENTER key on the system console to start up the restore utility program. If nothing happens after ten seconds press it again.

===> **(press the ENTER key)**

The restore utility will then prompt you to enter the device address of the MUSIC1 disk volume.

Note: Be sure to use the slash ('/') and the numeric zero ('0') as shown in the command below. 'xxx' is the device address of the MUSIC1 disk.

===> **/REPLY 0 xxx**

The restore facility will then want to know whether the device type is of Fixed Block Architecture (FBA). If the device type of the disk volume for MUSIC1 is a 3370, 9332, or 9335, you should respond YES (for 'xxx' below). Otherwise, you should respond NO.

===> **/REPLY 0 xxx**

The restore will now begin automatically for the MUSIC1 disk volume. The entire process will take anywhere from 15 to 45 minutes, depending on the device type you are using.

Once the restore is complete, the restore utility will indicate that the MUSIC1 volume has been restored with a 'Normal End'. Unload the tape from the drive.

Initialization of MUSIC

At this point you start up the MUSIC system by loading from the MUSICX disk. Select the program load option on the system console, enter the device address of the MUSICX disk and execute the program load function. When the processor enters WAIT state press the ENTER key or the REQUEST key on the system console. When prompted by the M077 message, you must specify the "=CONFIG" option to create a temporary I/O configuration and use the "=RESET" option reset the accounting file.

The following is a typical dialogue of this process. If the system is shut down before completing the permanent configuration step this, dialogue must be repeated each time the system is started. Since this is only a temporary configuration you do not have to enter all the devices you have on your system, only the disks, tape, printer, and a few workstations are required.

```
    M066 MUSIC/SP, Level=xxx
    M077 Enter operator id or special options or HELP
===> =CONFIG

    M115 Temporary system I/O reconfiguration...

    Enter console address
===> 000
    Enter printer address or --- if none
===> 018
    Enter reader address or --- if none
===> ---
    Enter punch address or --- if none
===> ---

    Disk/Tape configuration: Enter one device per line
    in format 'tttt-cuu'...

===> F512-C00
===> F512-C01
===> F512-D00
===> F512-D01
===> 9TRK-580
===> (press ENTER)

    Terminal configuration
    Enter terminal control option.....

===> (press ENTER)

    Enter terminal info in format 'tttt-cuu'....

===> 3270-020
===> 3270-021
===> 3270-022
```

```
===> (press ENTER)

     Configuration complete
     M077 Enter operator id or special options or HELP
===> =RESET
     M118 Preparing to RESET (wipeout) accounting data set
     M077 Enter operator id or special options or HELP
===> (press ENTER)
```

Over the next few minutes a number of message will be displayed. When the message

```
   M300 BATCH IDLE
```

is displayed, system initialization is completed and you should be able to sign on the system administrators userid on one of the workstations defined during initialization. If the system fails to startup, retry the initialization and verify that the correct device addresses and types have been specified.

Creating the Permanent I/O Configuration

This part is done from a MUSIC workstation, not the system console. Sign on the the System Administrator's ID on one of the workstations defined in the previous step. When the system starts up the MUSIC logo should appear on the defined workstations.

===> (press ENTER)

The SIGNON panel should now appear. Enter the administrators userid and password. The password is initially set to MUSIC.

===> ID Command: /ID $000

===> Password: xxxxxxxx

After a few seconds you should see the System Administrator's main menu appear. At this point follow the instructions in Chapter 5 "Changing the I/O Configuration" to modify the default configuration to match the one on your machine. The key is to make sure that the device address and types defined in MUSIC match those defined in you hardware. You may find it helpful to read about the NUCGEN utility program in the Administrator's Reference. Details about the format of the various configuration parameters are documented there.

After the new I/O configuration has been successfully written to disk, you are ready to try out your production system. Sign off the Administrator's ID and return to the system console. Reload the system from the MUSICX disk. This time when prompted by the message

```
   M007 Enter operator id or special option or HELP
```

press the ENTER key. The system should start automatically. If the system fails to start due to some problem with the I/O configuration, go back and repeat from "Initialization of MUSIC", correcting any mistakes. If the system reports some errors, but managed to start anyway, correct the errors by repeating from "Creating the Permanent I/O Configuration". After verifying that the I/O configuration is correct by checking that the workstations are working you can go on to the next step.

Updating to the Current Release

Note: This section is for sites which are installing MUSIC/SP for the first time, and which have restored the MUSICX and MUSIC1 volumes in the previous steps. If you are upgrading an existing MUSIC/SP system, use the section "Upgrading an Existing MUSIC/SP System" at the beginning of this chapter, rather than this section.

After restoring the MUSICX and MUSIC1 volumes from tape, you must now run some jobs on MUSIC/SP to update it to the current level.

Logon to the MUSIC virtual machine and attach a tape drive:

===> **ATTACH [C] MUSIC 480**

Load MUSIC/SP from the MUSICX volume, if you have not already done so. Do not disconnect the MUSIC operator console from VM, that is, do not enter the command "/cp disc", since you will need the console for what follows. During this section, if the console screen fills up and the message HOLDING appears in the bottom right corner, press CLEAR or PA2 to clear the screen.

Sign on to the administrator's ID by entering the ID and password on the signon screen, which you obtain by pressing ENTER when the MUSIC logo appears on the workstation. The ID is $000 and the password is MUSIC. A successful sign-on causes the administrator's main menu, ADMIN00, to appear.

Press F3 to exit from the ADMIN facility. You should see the prompt *Go near the top of the screen. In the command area at the bottom of the screen, type the following command and press ENTER:

```
edit $gen:nucgen.job
```

The first screen of file $GEN:NUCGEN.JOB is now displayed. Locate the line that begins SYSRES='xxx', where xxx is 120 or some other device address. Move the cursor to xxx and type the 3-digit virtual device address of your MUSICX volume over it, and press ENTER. The device address required is item [M] on the installation worksheet. The line should now start SYSRES='yyy', where yyy is item [M] (for example, 120 for FBA device, 150 for 3380, 160 for 3390, 170 for 9345, etc.). Press F12 to move the cursor to the command area, type FILE in the command area, and press ENTER. This replaces the file and returns you to *Go mode.

In the command area at the bottom of the screen, type the following command and press ENTER:

```
submit $gen:update.restore to(music) r(music)
```

This submits a job to MUSIC batch. The message "M309 M xxx,SRC001" should appear on the MUSIC operator console, where xxx is the (virtual) device address of the MUSIC tape drive. Load and ready the SRC001 tape, ring out, on the drive. Do not ready the tape until you see the M309 message. For more information on running tape jobs, see "Attaching a Tape Drive to MUSIC" in Chapter 10. After a few seconds, the message "BATCH IDLE" should appear on the console. Return to the workstation and enter the following command in the command area:

```
$gen:update.jobs
```

This submits a series of jobs to MUSIC batch. Some of the jobs may require a tape mount, as above. When you see the console message "M309 M xxx,vvvvvv", load and ready tape vvvvvv, ring out, on drive xxx. The update jobs are finished when you see the message "BATCH IDLE" on the console.

Important: Do not do anything on the MUSIC workstation while the jobs are running.

Next you must shutdown MUSIC by entering the following command on the MUSIC console:

```
/stop
```

This completes the update process. Continue on to the next section.

Customization Using ADMIN

Start the system and sign on the the administrator's ID. For information on how to start the system and sign on to your administrator ID, see *Chapter 7. System Startup Procedure*. When you sign on to the administrator's ID, the ADMIN facility is automatically started. The main menu, ADMIN00, will appear. See figure 3.2 for an illustration of this menu. If for some reason you exit ADMIN, it can always be restarted by typing **ADMIN** in the command line and pressing the ENTER key.

Note: Refer to the *MUSIC/SP Administrator's Reference* for information about customizing MUSIC/SP to suit your installations needs. For example, details about customizing the Mail Facility and FSI is given there.

To select an option from the administration screens, type the option code of your choice. Along with the option code, you can type additional information for the selection.

- Items enclosed within (- -), are required parameters for the selected option.

- Items enclosed within (< >), are optional parameters for the selected option.

```
------------------ Support Tasks: ADMIN Main Menu --------------ADMIN00

SELECT OPTION ====>
                                               Time:    4:39 pm
 1  Information and statistical functions
 2  Working with userids                    1988     AUGUST      1988
 3  Working with the file system
 4  System tailoring tasks                S   M   T   W   T   F   S
 5  Service MUSIC & Optional Products         1   2   3   4   5   6
 6  Display file names   < pattern >      7   8   9  10  11  12  13
 7  Change password - system administrator 14  15  16  17  18  19  20
 8  Display BATCH job information         21  22  23  24  25  26  27
 9  Full Screen Interface (FSI)          28  29  30  31
10  Display OUTPUT from Batch execution
11  System HELP Facility < topic >            Day of year:   234
12  MUSIC operator console
13  What's NEW with MUSIC/SP
 H  Description and function usage
 X  Exit



=======================================================================
F1:Help on Menu F2:Todays Reminders F3:Exit F6:Mail Waiting F12:Retrieve
```

Figure 3.2 - Main Administration Screen

Changing System Administrator's Password

The password can be changed by selecting item 7 from the main menu.

```
┌─────────────────┐         ┌─────────────────┐
│ ADMIN00         │         │                 │
│                 │         │                 │
│ MAIN            │         │ CHANGE          │
│ MENU            │         │ PASSWORD        │
│                 │  ────>  │                 │
├─────────────────┤         ├─────────────────┤
│ Choose:         │         │ See             │
│ Option 7        │         │ Below           │
│                 │         │                 │
└─────────────────┘         └─────────────────┘
```
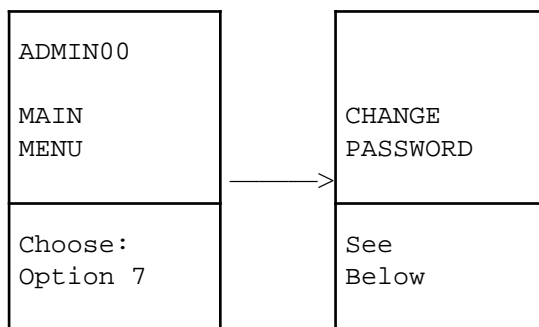
When you get to this panel, your screen looks like figure 3.3. Here you are prompted to enter:

• Current password --. Type the current password and press ENTER. The original password was MUSIC when the system was first installed.

• New password --. One to eight characters in length. Letters, digits, and special characters are permitted

• New password --. Second time is to verify the new password.

• Batch password --. After you change your sign-on password, you are asked if you want to change your batch password. Answer "YES" and follow the instructions. When prompted for your current sign-on password, enter the new one.

```
To terminate this request, issue the command
/CANCEL at any ? prompt at your workstation.

Userid is $000000

User Profile
Enter your current MUSIC sign-on password
?
Enter a new MUSIC sign-on password (1 to 8 characters)
?
Please enter the new password again  (to check for typing errors)
?


CHANGED

Do you want to change your MUSIC BATCH password?
?



------T----------------------------------------------------------T

                                                           Reading
```

Figure 3.3 - Panel to Change System Administrator's Password

Adding Save Library File Space

The system you have just installed has a relatively small amount of of pre-allocated file space. At this point you should allocate additional file space. See the section "Adding Additional Save Library File Space" in Chapter 12, for details on the procedure.

Add at least 40 million bytes of Save Library Datasets on the MUSIC1 disk. This can be done by allocating five 8MB datasets or a smaller number of larger ones. This should give you enough space to install any optional products. If you have sufficient free disk space, you may wish to add more libraries to both the MUSICX and MUSIC1 disks. See the topic "Displaying the VTOC" in Chapter 13 for more information about determining what space is free on disk.

Save Library Datasets can be allocated as required to satisfy user file space demands. Once allocated and incorporated into the file system, they cannot be deleted.

Activating the Automatic Maintenance Facility

Once the system is installed the Administrator may choose to activate the automatic maintenance facility. This system automatically submits batch jobs at certain times during the week to perform routine accounting and backup functions. These functions include:

- Daily backup of user files

- Execution of user accounting

- Nightly statistical reporting

- Weekly file system accounting and cleanup

- Weekly email cleanup

1. Choose the following panels:

```
+---------------+        +---------------+        +---------------+
| ADMIN00       |        | ADMIN04       |        |               |
|               |        |               |        |               |
| MAIN          |        | SYSTEM        |        | ACTIVATE      |
| MENU          |        | TAILORING     |        | AUTOMATIC     |
|               |        | TASKS         |        | MAINTENANCE   |
|               |  --->  |               |  --->  |               |
|               |        |               |        |               |
+---------------+        +---------------+        +---------------+
| Choose:       |        | Choose:       |        | See           |
| Option 4      |        | Option 8      |        | Below         |
+---------------+        +---------------+        +---------------+
```
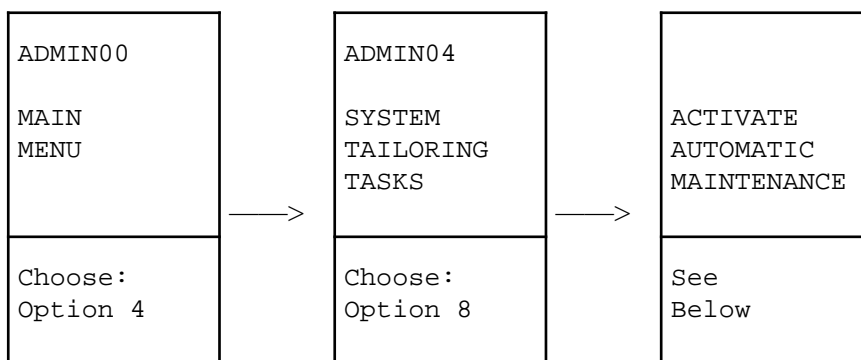
2. The next screen (see figure 3.4) illustrates that the automatic maintenance facility is not active.

3. To activate the automatic maintenance facility, enter:

    ====> yes

```
Automatic maintenance facility is presently
******* NOT ACTIVE *******.  Do you wish to activate
the automatic maintenance?  --- Yes / (No) ---
?
yes
RENAMED


Automatic maintenance facility has been ACTIVATED.  This
change will be in affect AFTER the NEXT IPL of the system.




------T----------------------------------------------------------T
          Press ENTER to continue.....                    More...
```

Figure 3.4 - To Activate the Automatic Maintenance Facility

Displaying/Updating Maintenance Schedule

Once the automatic maintenance facility is activated, the administrator can modify the parameters that control which jobs are submitted and when they are submitted. For detailed information on the parameters, see the section on the *AUTOSUB* Utility program in the Administrator's Reference. The actual jobs that are submitted can be modified by simply editing the files. This facility can be used to add an email cleanup job to your automatic maintenance facility. The submitted file to use for the email cleanup job is $ADM:AUTO.EMAILCLN.

1.   Choose the following panels:

```
+----------------+        +----------------+        +----------------+
| ADMIN00        |        | ADMIN04        |        |                |
|                |        |                |        | DISPLAY/       |
| MAIN           |        | SYSTEM         |        | UPDATE         |
| MENU           |        | TAILORING      |        | MAINTENANCE    |
|                |  ---->  | TASKS          |  ---->  | SCHEDULE       |
|                |        |                |        |                |
+----------------+        +----------------+        +----------------+
| Choose:        |        | Choose:        |        | See            |
| Option 4       |        | Option 9       |        | Below          |
+----------------+        +----------------+        +----------------+
```
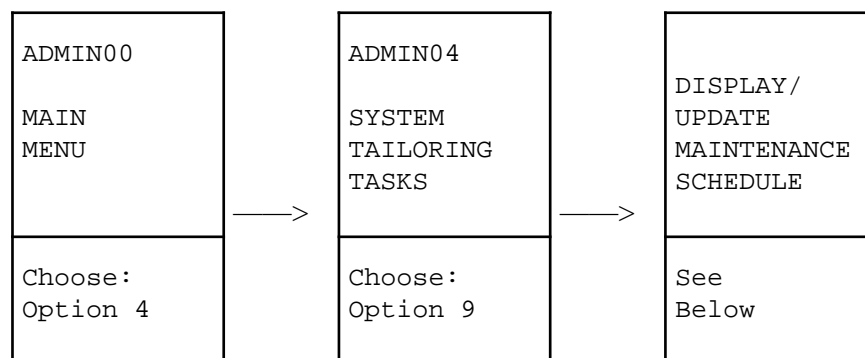
2.   The Automatic Maintenance Screen will be displayed next, (see figure 3.5). Press **F1** for help and parameter descriptions.

```
----------------- Display/Update Maintenance Schedule ---------------
Change/Update. To delete an entry, blank out the ID field & press ENTER

Description: Daily Statistical runs

      ID number: 0001

            Time: 1800              Time of day (HHMM in 24-hour clock)

            Days: 2,3,4,5,6              Sunday=1,Monday=2...Saturday=7

 Submitted file: $ADM:AUTO.STATJOBS

JCL Modification file:

          VM ID: *          Class:   Tag:

     Start date:            End date:                 dates are YYYYMMDD

     Skip dates:

========================================================================
PF-Keys: 1-Help  2-Edit  3-End  7-Up  8-Down 10-Edit cntl file 12-Cancel
```

Figure 3.5 - Updating the automatic maintenance schedule

National Language Support

MUSIC allows you to specify which national languages (from the list of supported languages) are to be installed on the system, and to specify the system default language.

1. Choose the following panels:

```
┌──────────────┐        ┌──────────────┐        ┌──────────────┐
│ ADMIN00      │        │ ADMIN04      │        │              │
│              │        │              │        │ NATIONAL     │
│ MAIN         │        │ SYSTEM       │        │ LANGUAGE     │
│ MENU         │        │ TAILORING    │        │ OPTIONS      │
│              │        │ TASKS        │        │              │
│              │ ─────> │              │ ─────> │              │
│              │        │              │        │              │
│ Choose:      │        │ Choose:      │        │ See          │
│ Option 4     │        │ Option 6     │        │ Below        │
│              │        │              │        │              │
└──────────────┘        └──────────────┘        └──────────────┘
```
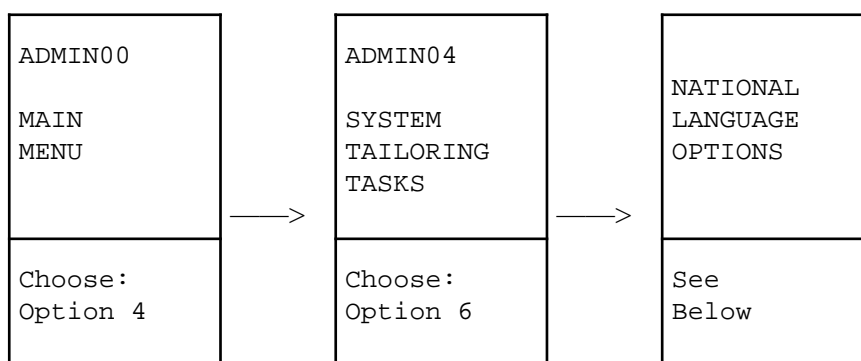
2. When the National Language Options screen appears type a Y (yes) beside the languages to be installed and type an X beside the one language that is to be the system default language. Note that English is always installed, so its entry in the "Install" column is not modifiable on the screen.

Transferring PCWS to Diskette

PCWS versions for both DOS and Windows are available as self-extracting files:

```
$PCW:PCWSDxxx.EXE        holds the PCWS for DOS version x.xx
$PCW:PCWSWxxx.EXE        holds the PCWS for Windows version x.xx
```

These files must be downloaded in binary mode.

Chapter 4. Adding Optional Products to the System

Installation Tasks

To install the optional products, the administrator should perform the following tasks:

1. Review the optional products tape

2. Display the list of current optional products installed

3. Retrieve information from the optional products tape

4. Install the optional products selected

5. Redisplay optional product list.

Reviewing Optional Products Tape

Depending on the products ordered you may receive one or more optional product tapes labelled SRV001, SRV002, etc. Review the tape label for a list of optional products ordered by your site. Record this information, along with the tape density, on your installation worksheet for reference during installation.

Notice that the IBM optional products that can be installed on MUSIC/SP always get installed from these custom-made tapes. Contact your IBM salesperson if you do not get the optional products you want.

Displaying Optional Products Currently Installed

To display currently installed optional product information, the administrator should choose the following panels:

```
┌──────────────────┐         ┌──────────────────┐         ┌──────────────────┐
│ ADMIN00          │         │ ADMIN05          │         │                  │
│                  │         │                  │         │                  │
│ MAIN             │         │ SERVICE          │         │ DISP. OPT'L      │
│ MENU             │         │ MUSIC &          │         │ PRODUCT          │
│                  │         │ OPT PRODUCTS     │         │ SERVICE LVL.     │
│                  │  ───>   │                  │  ───>   │                  │
│                  │         │                  │         │                  │
├──────────────────┤         ├──────────────────┤         ├──────────────────┤
│ Choose:          │         │ Choose:          │         │ See              │
│ Option 5         │         │ Option 2         │         │ Below            │
│                  │         │                  │         │                  │
└──────────────────┘         └──────────────────┘         └──────────────────┘
```
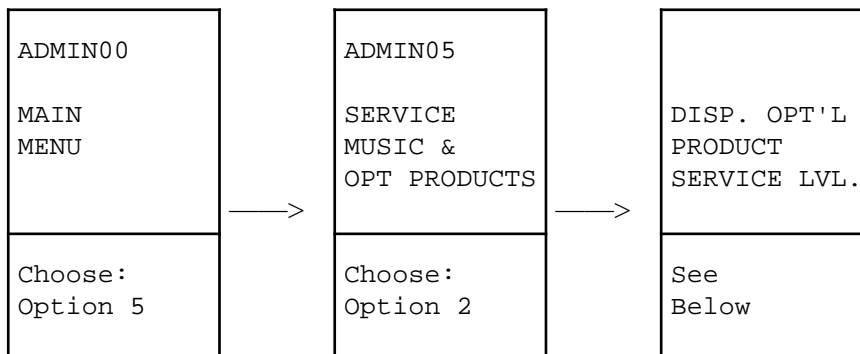
The $SRV:@PRODS.SLEVEL file is displayed next. It contains information on all products currently installed. The administrator can scroll and print this file.

Retrieving Optional Product Information

To retrieve optional product information:

1. Attach a tape drive to MUSIC.

    For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10.

2. Choose the following panels:

```
┌──────────────────┐          ┌──────────────────┐          ┌──────────────────┐
│ ADMIN00          │          │ ADMIN05          │          │ RETRIEVE         │
│                  │          │                  │          │ OPTIONAL         │
│ MAIN             │          │ SERVICE          │          │ PRODUCT INFO     │
│ MENU             │          │ MUSIC &          │          │                  │
│                  │          │ OPT PRODUCTS     │          │                  │
│                  │ ───────> │                  │ ───────> │                  │
├──────────────────┤          ├──────────────────┤          ├──────────────────┤
│ Choose:          │          │ Choose:          │          │ See              │
│ Option 5         │          │ Option 3         │          │ Below            │
└──────────────────┘          └──────────────────┘          └──────────────────┘
```
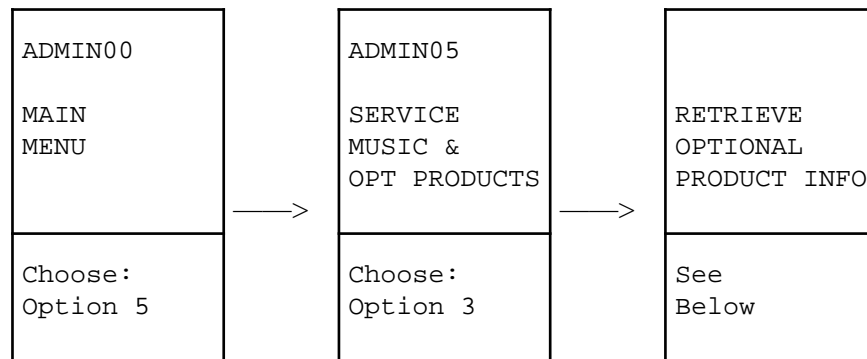
This procedure loads information from the optional products tape(s).

3. The screen which follows, (figure 4.1), indicates that a batch job has been sent to ADMIN. Press ENTER to clear the more... message, then follow the instructions that appear on the next screen.

    The batch job requires the Optional Products tape(s) to be mounted.

    For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10. Be sure to handle Batch Jobs and Mount Requests as they appear. Do not ready the tape before mount message appears.

Note: Do not continue with next step until the batch job has completed execution and the "M300 BATCH IDLE" message has appeared on the console.

```
This procedure submits a job to restore INITIAL files from
a MUSIC/SP service tape.  This is the FIRST STEP in applying
a service tape to MUSIC.  The files that will be restored are:

    $SRV:RST.SRV.INFO
    $SRV:SRV.TAPE.LEV

Do you wish to continue?  (yes/no)
?
yes
4 records submitted to SERVE



------T----------------------------------------------------------T

        Press ENTER to continue.....                    More...
```

Figure 4.1 - ADMIN Creates Batch Jobs

Installing Optional Products

1. Choose the following panels:

```
+------------------+        +------------------+        +------------------+
| ADMIN00          |        | ADMIN05          |        |                  |
|                  |        |                  |        | INSTALL          |
| MAIN             |        | SERVICE          |        | OPTIONAL         |
| MENU             |        | MUSIC &          |        | PRODUCTS         |
|                  |        | OPT PRODUCTS     |        |                  |
|                  |  ---->  |                  |  ---->  |                  |
+------------------+        +------------------+        +------------------+
| Choose:          |        | Choose:          |        | See              |
| Option 5         |        | Option 4         |        | Below            |
+------------------+        +------------------+        +------------------+
```
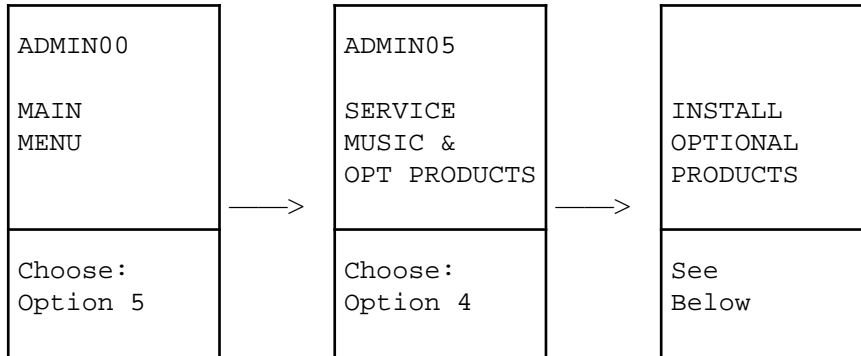
2. The next 2 screens, (samples shown in figures 4.2 & 4.3) prompts you to record the list of optional products to be installed. Refer to the Installation Worksheet for the list of optional products ordered.

    •   Type over the character N with Y to indicate which optional product to install

    •   Press the **ENTER** key, to accept the input

    •   ===> **F3**, to end and execute.

```
------------------------ Optional Products --------------------------

Install Product   Product Name                                  Program #

      N           VS Fortran V1 Compiler and Library            5748-FO3
      N           OS PL/I Optimizing Compiler and Library       5734-PL3
      N           VS COBOL Compiler and Library                 5740-CB1
      N           File Transfer Facility for 3270-PCs           5665-311
      N           PASCAL VS Compiler and Library                5796-PNQ
      N           OS RPG-II Compiler and Library                5740-RG1
      N           Interactive Instructional Presentation System 5668-012
      N           Interactive Instructional Authoring System    5668-011
      N           VS APL                                        5748-AP1
      N           VS BASIC Compiler and Library                 5748-XX1
      N           General Purpose Simulation System             5734-XS2
      N           VS COBOL II Compiler and Library              5668-958
      N           Displaywrite/370 V1                           5665-460
      N           VS Pascal Compiler and Library                5668-767
      N           GDDM Base                                     5665-356
      N           GDDM PC Link Feature                          5665-356


======================================================================
PF-Keys: 1-Help  3-End & Execute 8-Next scr 12-Cancel ENTER-Accept input
```

Figure 4.2 - List of Optional Products Available (*sample*, *1st screen*)

```
----------------------- Optional Products ---------------------------


Install Product   Product Name                             Program #

       N          GDDM - Presentation Graphics Facility      5668-812
       N          GDDM - Interactive Map Definition          5668-801
       N          GDDM - Interactive View Utility            5668-723
       N          G1 FORTRAN Compiler                        5734-FO2
       N          FORTRAN MOD II Library                     5734-LM3
       N          IBM BASIC Version 2                        5665-948
       N          C/370 Compiler V1                          5688-040
       N          C/370 Library V1                           5688-039
       N          3090 Vector Facility Simulator             5798-DWF
       N          PL/I V2 Compiler, Library & Test Facility  5668-909
       N          VS FORTRAN V2 Compiler, Library & Debug    5668-806
       N          Displaywrite/370 V2                        5685-107
       N          C/370 Compiler V2                          5688-187
       N          C/370 Library V2                           5688-188
       N          RPG/370 Compiler and Library               5688-127



========================================================================
PF-Keys: 1-Help  3-End & Execute 7-Prev scr 12-Cancel ENTER-Accept input
```

Figure 4.3 - List of Optional Products Available (*sample*, *2nd screen*)

3.   After pressing the **F3** key, ADMIN then submits batch jobs to load the optional products (see figure 4.4). Mount and ready the appropriate Optional Product tape only when it is requested.

For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10.

```
10 RECORDS SUBMITTED , ROUTE-MUSIC
1 RECORDS SUBMITTED , ROUTE-MUSIC
1 RECORDS SUBMITTED , ROUTE-MUSIC
1 RECORDS SUBMITTED , ROUTE-MUSIC
1 RECORDS SUBMITTED , ROUTE-MUSIC
1 RECORDS SUBMITTED , ROUTE-MUSIC
1 RECORDS SUBMITTED , ROUTE-MUSIC
11 RECORDS SUBMITTED , ROUTE-MUSIC


The Optional Products that will be installed cannot be
used until the system is re-IPLed.
4 RECORDS SUBMITTED , ROUTE-MUSIC





------T--------------------------------------------------------T

          Press ENTER to continue.....                    More...
```

Figure 4.4 - Loading Optional Products

4.   The optional products are loaded after the BATCH IDLE message is received.

5.   Re-start MUSIC before using the optional products.

     For more information, see "Stopping MUSIC" in Chapter 8, and "Starting MUSIC" in Chapter 7.

Redisplaying Optional Products List

It is recommended that before the optional products are made available to users, the administrator should run the sample installation verification programs for the selected products. A sample program is available for each of the following products. See table below.

```
 Product Name          Sample Program Name


 VS BASIC              VSBASIC.TEST
 VS FORTRAN            VSFORT.TEST
 GPSS                  GPSS.TEST
 OS PL/I               PLI.TEST
 VS COBOL              COBOL.TEST
 OS RPG II             RPG.TEST1, RPG.TEST2
 PASCAL VS             TESTPGM1, TESTPGM2
 C/370                 C.TEST
 COBOL II              COBOL2.TEST
```

The administrator should also redisplay the Optional Product Service Level panel to verify successful execution of the installation (figure 4.5). See the topic "Displaying Optional Products Currently Installed"

earlier in this chapter for instructions.

```
$SRV:@PRODS.SLEVEL                 L 80   W 1 72        Rec 1/13
-->*Top of file
   Product ID Level   Product Name & release Service Description     In

   GPSSV14     A00001 OS GPSS-V 1.4          Service from base tape  01
   OSRPGII10   B00002 OS RPG-II & LIB 1.0    Service from PUT 8702   06
   OSPL151     B00004 OS PL/I & LIB 5.1      Service from PUT 8801   03
   VSCOBOL24   B00004 VS COBOL & LIB 2.4     Service from PUT 8801   03
   3270FT10    B00005 3270 FILE TRANSFER 1.0 Service from PUT 8801   03
   VSFORT41    B00004 VS FORTRAN & LIB 4.1   Service from PUT 8801   03
   VSBASIC30   A00001 VS BASIC & LIB 3.0     Service from PTF tape 3 01
   VSAPL40     A00001 VS APL 4.0             Service from Base Tape  01
   IIAS20      A00001 IIAS 2.0               Service from PTF tape 1 01
   IIPS20      A00001 IIPS 2.0               Service from PTF tape 1 01
   PASCAL22    B00003 VS PASCAL & LIB 2.2    Service through item 0130
   *End of file



--+-T--1----+----2----+----3----+----4----+----5----+----6----+----7--
Command: _
                                                            Reading
Default PFs: 1:Help    2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 4.5 - Display of Installed Products

Chapter 5. Changing the I/O Configuration

Preconfigured

The ADMIN facility provides a pre-configured system package which is distributed in a load-and-go format. The restore facility allows ADMIN to be installed on a wide range of IBM disks. This pre-configuration makes the complex task of designing a configuration unnecessary.

The *NUCGEN* Utility program is used to modify this configuration. ADMIN provides an interface to NUCGEN that allows you to modify the configuration without detailed knowledge of the various options and parameters. The control statements for the NUCGEN job that is modified by this interface are in the file $GEN:NUCGEN.JOB. For a more in depth discussion of NUCGEN, refer to the Administrator's Reference.

When to Change Configuration

As your system grows it may be necessary to change the system configuration. You will need to change the system configuration if you need or want to:

• Increase the number of workstations

• Change or add device addresses

• Increase the maximum user region size

• Change sign-on message.

Displaying and Changing Configuration

To view and/or change the current system configuration, choose the following panels:

```
ADMIN00              ADMIN04              ADMIN04A
                                                               NUCGEN:
MAIN                 SYSTEM               ADDITIONAL            UPDATE
MENU                 TAILORING            TAILORING             SYSTEM I/O
                     TASKS                TASKS                 CONFIG/NUC
            —>                   —>                    —>
Choose:              Choose:              Choose:               See
Option 4             Option 10            Option 5              Below
```
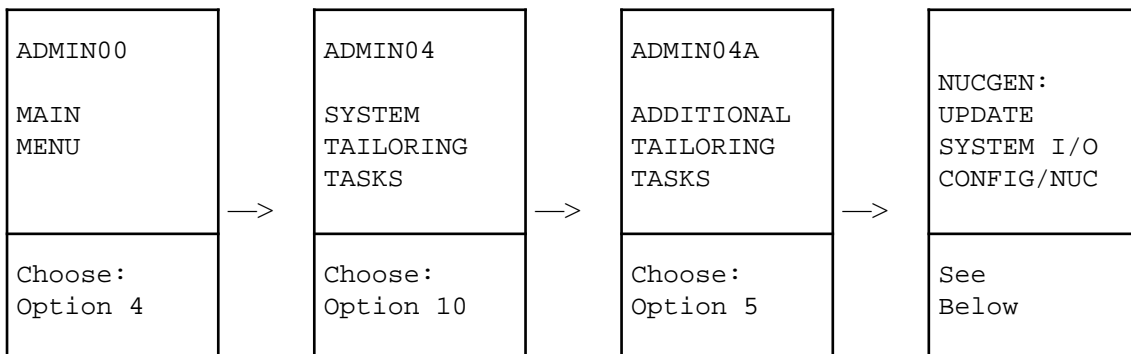
When you get to this panel, your system configuration is displayed. To view the system configuration panel, see figure 5.1.

```
---------------------- System Configuration --------------------------

 Sign On Message: MUSIC/SP Version 3,
    CPU Charge Factor: 100  I/O Charge Factor: 3   System Level: V31
Number Extra Session: 100   System Resident Addr:120 (MUSICX disk)
 Maximum REAL Region: 272            Console Addr:01F
 Maximum User Region: 3000   Batch Printer Addr:00E (or blank if none)
 REG=MAX User Region: 0       Batch Reader Addr:    (or blank if none)
     RAM Disk Region: 800      Batch Punch Addr:    (or blank if none)


Tape TAPE 480-483 9TRK


Dsk F512 120-121  F512 220-221  F512 320-324  3350 130-131  3350 230-231
    3350 330-334  3375 140-141  3375 240-241  3375 340-344  3380 150-151
    3380 250-251  3380 350-354


Terminals     (items that start with an * are not presently being used)
BTRM 010-012                      TTY  030-037 DIALUP,1200
*TTY 038-03F DIALUP,1200          3270 520-54F DIRECT
*3270 550-57F DIRECT




=========================================================================
PF-Keys: 1-Help   3-End   10-Edit file   12-Cancel   ENTER-Accept input
```

Figure 5.1 - First Section of System Configuration File

Upon entering the system configuration panel:

1.   You can type over the default values to customize the configuration.

      It is very important that you set the System Resident Address to match the virtual address of the
      MUSICX disk. The value specified depends on the type of disk being used. If this is not set correctly
      the reconfiguration will not work. The other items can be changed as required.

      a)   The Sign On Message is displayed on the users workstation when he connects to your system. This
            can be changed to uniquely identify your MUSIC system. It can be up to 50 characters in length.

      b)   CPU Charge Factor, is used to calculate the number of service units a job uses. Two charging
            factor numbers are used to calculate the number of service units a job uses. The first number gives
            processor time component, see table below. If the recommended numbers from the table are used,
            one service unit will correspond to roughly one second of processor time.

```
┌─────────────────────────────────────┬─────────────────────────────────────┐
│  PROCESSOR TIME COMPONENT           │          MACHINE TYPE               │
├─────────────────────────────────────┼─────────────────────────────────────┤
│            20                       │           4331-M1                   │
│            42                       │           4331-M2                   │
│            70                       │           4361-M3                   │
│           100                       │           4361-M4                   │
│           160                       │           4341-M12                  │
│           230                       │           4381-M1                   │
│           300                       │           4381-M2                   │
│            63                       │           9370-M20,M40              │
│           113                       │           9370-M50                  │
│            92                       │           9370-M30,M60              │
│           230                       │           9370-M90                  │
│            92                       │           9371                      │
│                                     │                                     │
└─────────────────────────────────────┴─────────────────────────────────────┘
```

The second number is used to factor in the I/O charge. The I/O component of the service unit is calculated by multiplying this factor by the number of I/O operations divided by 300. So the recommended value of 3, results in one service unit for 100 I/O operations.

    c)   The initial configuration supports eight TTY terminals and 48 3270-type workstations, for a total of 56 workstations. To expand, remove the asterisks (*) from the additional two terminal statements. See figure 5.1 for an illustration. This adds an additional eight TTY terminals and 48 3270-type workstations. To expand past this, you may need to add additional page and swap datasets.

    d)   Number of Extra Session, specifies the number of extra terminal control blocks (TCBs) to be allocated for multi-session support. If this number is omitted, the number of extra TCBs is 50 percent of the number of workstations defined.

    e)   On 9371 processors see note about tape drive addresses in *Chapter 10. General Operator Tasks*.

You may also change the configuration options by entering

===> **F10**

This allows you to directly edit the file $GEN:NUCGEN.JOB which contains the control statements for the NUCGEN utility. When you have finished making changes, issue the FILE command to update the file and return you to the next step in the procedure. If you accidentally pressed F10 and do not wish to edit this file directly, enter the command ACONFIG to return to the previous screen or QQ to quit the edit.

2.   To save your changes press

    ===> **ENTER**, to accept any changes

    Then press

    ===> **F3**, to exit from the configurator panel

    If you do not want to save the changes press

    ===> **F12**, to CANCEL any changes that may have been made exit from the configurator panel.

3.   You will now be asked if you want to create the new nucleus. Respond by entering:

===> **YES or NO**

4. If the nucleus is created without any errors, it will automatically be placed on the system's resident volume. If errors are detected, you will be requested to correct the errors and a new nucleus creation will be done.

5. Re-IPL the MUSIC system. For more information, see "Starting MUSIC" in Chapter 7.

After entering the appropriate response, press ENTER and you will return to the ADMIN04A screen.

Backing up the System Nucleus

The system nucleus contains the main controlling system software for MUSIC/SP. It also contains the I/O configuration. It is good practice to have a backup on tape of the nucleus in case you want to go back to a previous copy. This backup can be done once you have run the change configuration steps described above. To perform this backup choose the following panels.

```
┌─────────────┐      ┌─────────────┐      ┌─────────────┐      ┌─────────────┐
│ ADMIN00     │      │ ADMIN04     │      │ ADMIN04A    │      │             │
│             │      │             │      │             │      │ CREATE BACK─│
│ MAIN        │      │ SYSTEM      │      │ ADDITIONAL  │      │ UP OF CUR─  │
│ MENU        │      │ TAILORING   │      │ TAILORING   │      │ RENT SYSTEM │
│             │      │ TASKS       │      │ TASKS       │      │ NUCLEUS     │
│             │ ──>  │             │ ──>  │             │ ──>  │             │
│             │      │             │      │             │      │             │
│ Choose:     │      │ Choose:     │      │ Choose:     │      │             │
│ Option 4    │      │ Option 10   │      │ Option 11   │      │             │
└─────────────┘      └─────────────┘      └─────────────┘      └─────────────┘
```
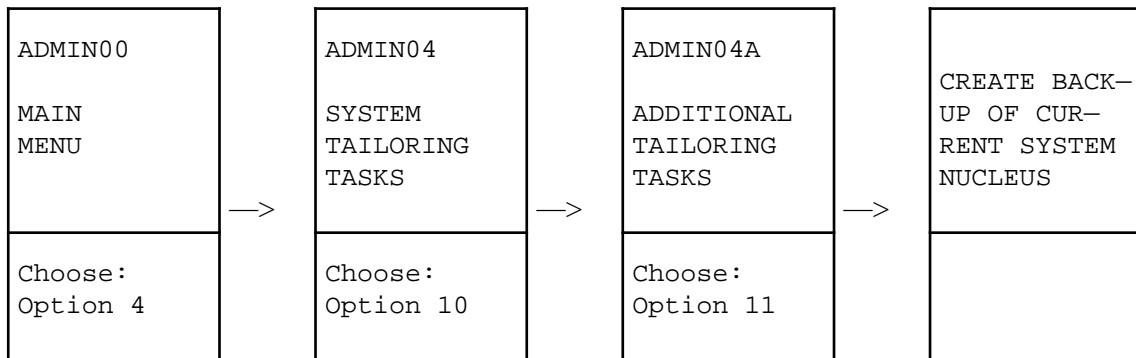
Chapter 6. Finishing Installation

This chapter contains the final steps to installing MUSIC/SP.

Contributed Software Library

A collection of contributed programs is distributed with MUSIC/SP. The contributed programs have proved useful at MUSIC/SP installations. They are distributed as a convenience to MUSIC/SP sites. Each site can optionally install these programs. From *Go mode enter "CSL", or from the SELECT OPTION line of ADMIN, enter "/CSL". You will obtain a list of the programs and how to install them.

Get the Latest Information from MUSCOM

Use the MUSCOM facility to get up-to-date information about MUSIC problems and answers to frequently asked questions. This is done by selecting the "Get Info" option of the first MUSCOM screen. See *Chapter 15 - MUSCOM* for more details.

MUSIC Users Group

Users of MUSIC/SP may join the MUSIC Users Group (MUG). This group organizes conferences, courses and publishes a newsletter. To get information about the users group use MUSCOM's "Get Info" option to get an index of the available files. Some of these files have information on the group and its current activities. See *Chapter 15 - MUSCOM* for more details.

Part III - Operating

Chapter 7. System Startup Procedure

Starting MUSIC Under VM

The MUSIC/SP is started by loading the system from the MUSICX disk. Under VM this is done as follows.

Under VM you must first logon to the MUSIC virtual machine.

1. ===> LOGON **MUSIC**

2. ===> Enter password

3. ===> Press **ENTER** key after logon or reconnect message

4. ===> Press **ENTER** key after M077 message

5. ===> Press **CLEAR** key when more or holding appears at bottom right

6. ===> **/CP DISC**, when SYSTEM INITIALIZATION COMPLETING message appears.

System initialization takes approximately 1-2 minutes to complete. The "/CP DISC" command puts MUSIC into disconnected mode and frees up the console or workstation for other uses. It is recommended that you run MUSIC in this mode since it prevents VM from stopping MUSIC when the console screen fills up. While disconnected, messages will be automatically redirected to the VM operator's console and the VM operator can send console commands to MUSIC using the SEND command. In other words all, of MUSIC's operational functions can be carried out from the VM master console.

In addition, the administrator can use the CONSOLE program from a MUSIC workstation session to review the most recent system messages and enter console commands. See the Administrator's Reference for details.

It is also possible to add MUSIC to the PROFILE EXEC of the VM AUTOLOG1 virtual machine so that it is automatically started when VM is initialized.

Starting MUSIC Stand-Alone

The MUSIC system is started by loading it from the MUSICX disk. If MUSIC is running stand-alone (without VM), select the program load option on the system console, specify the address of the MUSICX disk as the load address, and execute the load operation. The details of how this is done vary from processor to processor.

When prompted by the M077 message press the ENTER key to automatically start up the system. There are a number of other options that can be entered at this time to initialize printers, set the time and date, and reconfigure I/O addresses. Consult the Administrator's Reference (Part II) for details.

```
LOG MUSIC
ENTER PASSWORD  (IT WILL NOT APPEAR WHEN TYPED):


FILES: 003 RDR,  NO PRT,  NO PUN
LOGON AT 17:01:47 GMT MONDAY 04/17/89
Press ENTER Key


M066 MUSIC/SP, Level=MUSV2R1 10APR89
M077 Enter operator id or special options or HELP
Press ENTER Key


17:01 PM MON APR 17, 1989. Initializing.
17:01 M103 VM command issued: SET RUN ON
17:01 M103 VM command issued: SPOOL 00C CONT
17:01 M103 VM command issued: SPOOL 00C CL A
17:01 M097 The following volumes are permanent:
17:04 M105 MUSICX on unit 120 SYS
17:04 M105 MUSIC1 on unit 220 SYS NDS
17:04 M070 No disk drives are available for mounts.
17:04 M139 Storage size  2048K. Pageable storage  1284K
17:04 M140 MAXMPL=  5, MAXRRS= 232K, Num RCBs=  20
17:04 M092 System initialization completing.


/cp disc
                                              RUNNING
```

Figure 7.1 - System Startup

Note: This is an example of logging on a MUSIC system with 3370 disk packs.

Signing onto the System Administrator's ID

In order to perform system administrator functions, you must first be signed onto your administrator ID. The following instructions explain how to do this.

1.   If MUSIC/SP is running under VM you must first connect to it using the DIAL command. In the stand-alone situation (without VM) the MUSIC logo should appear on the workstations when the system in initialized and the DIAL command need not be used.

   ===> **DIAL MUSIC**

2.   After the MUSIC/SP logo screen appears, press the ENTER key.

3.   You must now identify yourself as the administrator by entering the predefined userid and password on the displayed SIGN ON screen.

   ===> ID Command: /ID **$000**

   ===> Password   **xxxxxx**

   The initial password for userid $000 is **MUSIC.**

4.   Once the sign on has successfully completed, the ADMIN facility will automatically start and you will

be presented with the main administrators menu (ADMIN00). If for some reason you exit from ADMIN, it can be restarted by entering the command

===> **ADMIN**

Signing off Administrator ID

To sign off the administrator ID, type the following command:

===> /**OFF**

Note: You may enter **/OFF** from the top command line in any of the administrator panels. If you have exited from the panels, you may also enter **/OFF** from the *Go message.

Abnormal Termination

There are a few conditions that will cause MUSIC/SP to shut itself down. These are described in the *MUSIC/SP Administrator's Reference*. Should these conditions happen, you should take a main storage dump as described below.

Taking a Main Storage Dump

A copy of the contents of MUSIC's main storage can be written to disk by loading from the MUSIC1 disk. Under VM this can be done by typing "IPL xxx" where xxx is the address of the MUSIC1 volume. This is valuable as a debugging aid if MUSIC is not working correctly. See the program PRDUMP in the *MUSIC/SP Administrator's Reference* for information on how to print it.

Chapter 8. Stopping MUSIC

Stopping MUSIC

The system may have to be shut down for maintenance, to install a new product, to change the I/O configuration, or to test the hardware. It is important to shutdown the system in an orderly fashion and there are a number of thing to be done before actually stopping the system.

If you are running MUSIC under VM in disconnected mode, you should first log on to the MUSIC virtual machine so you can issue the console commands to shut the system down. Alternatively the commands can be sent to the disconnected MUSIC machine from the VM operators console, or issued by the system administrator from the CONSOLE program.

Inform users that the system in shutting down. The following command will inform users that the system will shutdown in 5 minutes. If you have more specific information enter the text following the "ALL" keyword.

===> **/MESSAGE ALL**

Check to see if there is a batch job still active.

===> **/BATCH**

When you are satisfied that the users have been informed and batch is idle, you can stop the system. Stop BTRM jobs for all VMREADX and RDMAILER jobs and the System Log Server, by issuing the following command for each job, when *n* is the job's TCB number. *n* can be found by running "WHOSON $MON" at a workstation. RDMAILER jobs are identified as NMAILR in the WHOSON output. Stop the System Log Server (SYSLG) last.

===> **/REPLY n STOP**

After stopping the BTRMs, shutdown the system by:

===>**/STOP**

The system closes the accounting file and enters a disabled wait state.

Chapter 9. Maintaining Data Integrity

Daily Backup

In order to protect installations against loss of data due to fire or user error, perform a BACKUP operation. This typically involves running a program which copies all or critical portions of the disks to tape. This tape can be stored off-site or placed in a fire-proof vault.

ADMIN automatically performs system backups provided that you have activated the Automatic Maintenance Facility. (See "Activating Automatic Maintenance" in Chapter 3).

Here is a list of some of the activities ADMIN performs:

* Run daily backups

* Produce usage and statistical reports

* Update fund limits for each userid

* Perform userid table backup operation.

Daily Activities

The following is an overview of which programs and utilities are automatically run daily off-hours. These steps are done only if you have activated the Automatic Maintenance Facility.

1. Jobs to print statistical counters are initiated to invoke the COUNTS, WAITS, IOTIME and LIBSPACE programs. These printed outputs are useful for tracking system usage.

2. A backup copy of the userid table is produced with CODUMP.

3. The session accounting program, ACTDMP, produces accounting records for the day's activity.

4. The funds used field (NOW$) in the user profile is updated, using the records produced by the ACTDMP utility

5. The Save Library incremental archive program (MFARCH) is run to backup user files to tape. This requests a different tape for each day in the default 15 day cycle. Any files that have been modified since the last run, are backed up. Over the full cycle, all files are backed up, whether they have been modified or not.

Weekly Activities

The following is an overview of which programs and utilities are automatically run weekly off-hours. These steps are done only if you have activated the Automatic Maintenance Facility.

1. ELOG.CLEANUP and FILE.DELETE are used to cleanup of some Editor, menu and REXX work files.

2. MFACCT is used for the Save Library accounting run.

Full Pack Backups

It is recommended that you take regular full pack backups of all your MUSIC disks. These backups can be used to quickly recover you system in the event a major disk failure. They take time and require that MUSIC is shutdown. For this reason they are usually done at night or on the weekend. If you do not intend to take a full pack backup of your system on a weekly or monthly basis, make sure that you do take one after installing the system and before applying any major changes. These backups are **NOT** done automatically by ADMIN. The following procedure will give you a good full pack backup.

• Shutdown MUSIC.

• Backup **ALL** MUSIC's disks using VM's DDR program or another full pack dump program.

• Re-start MUSIC.

• Store the backup tapes together in a safe place.

It is important that MUSIC is shutdown during the backup, to guarantee that the disks are not modified during the backup procedure and that the dumps of the various disks are in sync. In the case of a major disk failure the system can be recovered as follows.

• Fix the disk hardware problem.

• Restore **ALL** the MUSIC disks from the backup tapes.

• Restore the system userid table.

• Restore files from the full cycle of incremental archive tapes, starting with the oldest tape.

    For more information about the VM DUMP/RESTORE program (DDR), see the *Systems Facilities for Programming* manual.

Restoring Users' Files from Daily Backup

This facility allows for the restoring of Users' files from the nightly Save Library backup tapes.

The MUSIC system provides a facility to backup any user files that have changed. It also can back up all files over a period of time. ADMIN cycles over a period of 15 backup tapes. Users' files will be on one of those 15 tapes.

To restore Users' files:

1. Attach a tape drive to the MUSIC console.

    For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10.

2. Choose the following panels:

```
┌─────────────────┐         ┌─────────────────┐         ┌─────────────────┐
│ ADMIN00         │         │ ADMIN03         │         │                 │
│                 │         │                 │         │ RESTORE USER    │
│ MAIN            │         │ WORKING         │         │ FILES FROM      │
│ MENU            │         │ WITH FILE       │         │ DAILY BACKUP    │
│                 │         │ SYSTEM          │         │                 │
│                 │ ────>   │                 │ ────>   │                 │
├─────────────────┤         ├─────────────────┤         ├─────────────────┤
│ Choose:         │         │ Choose:         │         │ See             │
│ Option 3        │         │ Option 1        │         │ Below           │
└─────────────────┘         └─────────────────┘         └─────────────────┘
```
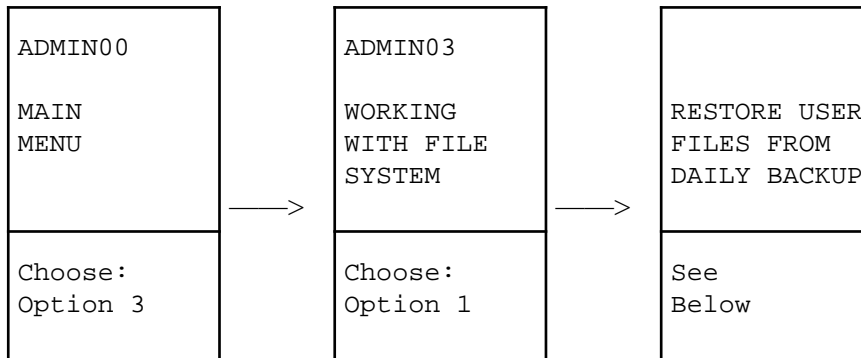
3.   At the Restore input screen, enter:

   •   Userid **must be a valid userid (1 to 16 characters).**

   •   User's file names.

   See figure 9.1 for a sample restore.

4.   ===> Press **ENTER** key.

5.   ===> Press **F3** to execute the facility.

   A batch request will be sent to restore the files from the appropriate backup tape.

6.   After the mount message appears on the MUSIC console, mount and ready the tape.

   For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10. Be sure to handle batch jobs and mount Requests as they appear.

```
------------ Restore User Files from Daily Backup Tapes ----------------


Userid: AB01                         (file ownership - no subcode)

 User file names (without "userid:" part):
 pl1prog
 cobolprog
 testprog




                                 Number of filenames entered 0


=========================================================================
PF-Keys: 1-Help  3-End & execute ENTER-Accept input 10-Refresh 12-Cancel
```

Figure 9.1 - Restore Three Files for AB01 Userid

Archiving and Deleting User Files

This facility allows archiving of user files based on a single userid or range of userids. An option allows archived files to be automatically deleted from the Save Library.

To archive files:

1. Attach a tape drive to the MUSIC console.

   For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10.

2. Choose the following panels:

```
┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
│ ADMIN00         │        │ ADMIN03         │        │                 │
│                 │        │                 │        │ ARCHIVE USER    │
│ MAIN            │        │ WORKING         │        │ FILES           │
│ MENU            │        │ WITH FILE       │        │ AND DELETE      │
│                 │        │ SYSTEM          │        │                 │
│                 │ ────>  │                 │ ────>  │                 │
│                 │        │                 │        │                 │
├─────────────────┤        ├─────────────────┤        ├─────────────────┤
│ Choose:         │        │ Choose:         │        │ See             │
│ Option 3        │        │ Option 2        │        │ Below           │
│                 │        │                 │        │                 │
└─────────────────┘        └─────────────────┘        └─────────────────┘
```
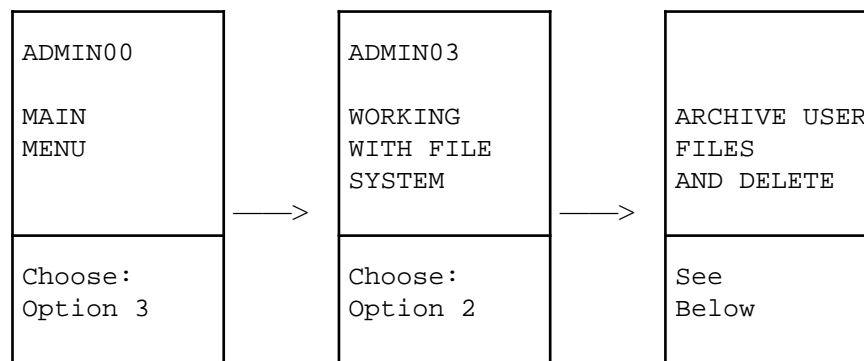
3. At the Archive Files input screen, enter:

   • The Blocksize to be used when creating this archive tape; default is 16000.

   • The tape recording density. **Only** 1600 or 6250 recording densities are valid; default is 1600.

   • The Tape Volume name to be assigned to the archive tape. Can be up to six alphanumeric characters.

     This name is required when performing a restore. A unique 6-character name must be assigned to each archive tape.

   • A valid userid.

     If only one userid is to be archived, you need only enter the userid in the Starting Userid field. An ending userid is not required.

   • The Group Sequence which specifies the type of sequence to be used for the range of userids; default is N.

   • The Delete Option: specify Y to delete the archived files or N to not delete the archived files; default is N.

   The Description field is optional, but helpful, for future references. The Display Archived File Information facility presents information on archived tape files and this description field is displayed there.

   See figure 9.2 for a sample archive and delete.

4. ===> Press **ENTER** key.

5. ===> Press **F3** to execute the facility.

   A batch request is sent to archive the files for the specified userids.

6. After the mount message appears on the MUSIC console, mount and ready the tape.

   For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10. Be sure to handle batch jobs and mount requests as they appear.

```
------------------------- Archive Files ----------------------------

            Tape Blocksize: 16000     (multiple of 80, max 32720)
              Tape density: 6250      (1600 or 6250)
          Tape Volume name: PLI251


  Starting Userid: AB01                    (file ownership id,
    Ending Userid: AB10                         no subcode)

    Suffix Length: 2    (1-4) (Suffix is end part of userid, for group)
   Group Sequence: N   N-numeric   A-alphabetic   B-alphanumeric


 Delete archived files: y


   Archive description:  Archive/delete files for userids AB01-10


======================================================================
PF-Keys: 1-Help 3-End & execute 10-New tape 12-Cancel ENTER-Accept input
```

Figure 9.2 - Archive and Delete Files for Userids AB01-AB10

Restoring User Files from an Archive

This facility allows retrieval of files from an Archive tape created by the Archive and Delete User Files facility. All files or a selected set of files can be restored for a single userid or for a range of userids, in a single operation.

To perform the restore function from an archive, the administrator must:

1. Attach a tape drive to the MUSIC system.

   For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10.

2. Choose the following panels:

```
┌──────────────┐          ┌──────────────┐          ┌──────────────┐
│ ADMIN00      │          │ ADMIN03      │          │              │
│              │          │              │          │ RESTORE USER │
│ MAIN         │          │ WORKING      │          │ FILES FROM   │
│ MENU         │          │ WITH FILE    │          │ ARCHIVE TAPE │
│              │          │ SYSTEM       │          │              │
│              │  ──────> │              │  ──────> │              │
│              │          │              │          │              │
├──────────────┤          ├──────────────┤          ├──────────────┤
│ Choose:      │          │ Choose:      │          │ See          │
│ Option 3     │          │ Option 3     │          │ Below        │
│              │          │              │          │              │
└──────────────┘          └──────────────┘          └──────────────┘
```
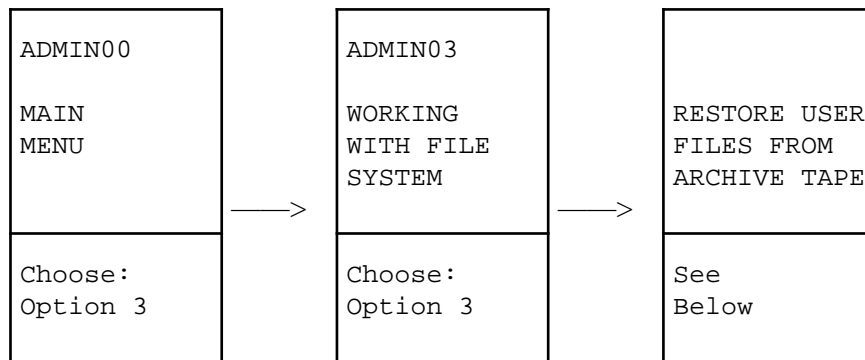
3. At the Restore Files input screen, enter:

    •   The tape volume label. The volume label **must** be the same as specified when the archive was
        created. Maximum length is six alphanumeric characters. The volume label of NOVOLN can be
        used to process a tape that was NOT created by the archive facility.

    •   Userids must be valid 1 to 16 character userids (no subcodes).

    •   The group sequence; default is N for numeric range of userids.

    •   The restore all option; default is N to restore only the files listed. If N, include file names to be
        restored in the appropriate file name section of the screen.

        See figure 9.3 for a sample restore sequence.

4. ===> Press **ENTER** key.

5. ===> Press **F3** to execute the facility.

    A batch request is sent to restore the files from the appropriate backup tape.

    For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10. Be sure to handle batch
    jobs and mount requests as they appear.

```
---------------------Restore Archived User Files----------------------


    Tape volume label:  PLI251

       Starting Userid:  AB01             (file ownership id - no subcode)
         Ending Userid:
        Suffix Length: 2     (1 to 4)
       Group Sequence: N     N-numeric   A-alphabetic   B-alphanumeric

    Restore all files: Y     if N, enter file names below

      selected files...  (starting and ending userid must be the same)

   File names (without "userid:" part)
>                                                                      <
>                                                                      <
>                                                                      <
>                                                                      <
>                                                                      <
>                                                                      <
======================================================================
PF-Keys: 1-Help 3-End & execute 10-New tape 12-Cancel ENTER-Accept input
```

Figure 9.3 - Choose to Restore All Files for Student AB01

Displaying Archived File Information

The Administrator can view archived tape information by:

1. Choosing the following panels:

```
+----------------+        +----------------+        +----------------+
| ADMIN00        |        | ADMIN03        |        |                |
|                |        |                |        | DISPLAY        |
| MAIN           |        | WORKING        |        | ARCHIVE TAPE   |
| MENU           |        | WITH FILE      |        | INFORMATION    |
|                |        | SYSTEM         |        |                |
|                | -----> |                | -----> |                |
+----------------+        +----------------+        +----------------+
| Choose:        |        | Choose:        |        | See            |
| Option 3       |        | Option 4       |        | Below          |
+----------------+        +----------------+        +----------------+
```
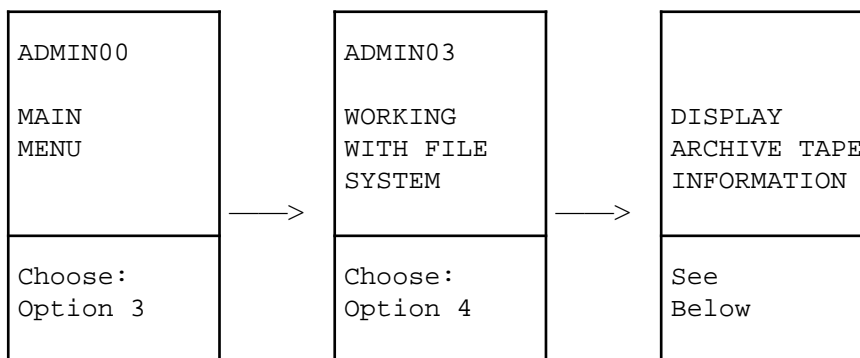
2. The File Management Screen is displayed; see figure 9.4. This screen contains a list of all archived files. To scroll, select the appropriate function keys displayed at the bottom of the screen.

    When an archived tape is no longer needed you should remove the information from the list by issuing the command:

    ===> PURGE filename (filename being a filename from the display)

3. ===> Press **F3** key, to EXIT.

```
--------------------- LIBRARY MANAGEMENT SCREEN ----------------------
Command ==>


                                         Files: 1   Bytes:    2 K
Current Directory ==>
Cmd/Opt  Filename              RECL FM  --Space-- Used    Written Acces
----------------------------------------------------------------------
_____  $ADM:UUSERS.160001600   80 FC    2K  33% 1 0000000 31MAR93 RW









------------------------------------------------------------- 09:30:13
Options: E:Edit B:Browse X:Execute C:Copy R:Rename D:Delete 11:File Info
PF-Keys  1:Help 3:Exit    4:Col Flp 7:Up    8:Down   9:Locate 10:Refresh
```

Figure 9.4 - Displaying Current Archive Information

Restoring System Source Files

Source modules for the MUSIC/SP system are located on the source tapes. This facility allows for retrieving source modules and placing them in the Save Library. Multiple source modules may be retrieved using this facility. To review a list of files that reside on the source tape, issue the command:

===> BROWSE $GEN:SOURCE.KEY

To restore ADMIN source files:

1. Attach a tape drive to the MUSIC console.

    For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10.

2. Choose the following panels:

```
┌────────────────┐        ┌────────────────┐        ┌────────────────┐
│ ADMIN00        │        │ ADMIN03        │        │                │
│                │        │                │        │ RESTORE        │
│ MAIN           │        │ WORKING        │        │ SYSTEM         │
│ MENU           │        │ WITH FILE      │        │ SOURCE FILES   │
│                │        │ SYSTEM         │        │ FROM TAPE      │
│                │  ───>  │                │  ───>  │                │
│                │        │                │        │                │
├────────────────┤        ├────────────────┤        ├────────────────┤
│ Choose:        │        │ Choose:        │        │ See            │
│ Option 3       │        │ Option 5       │        │ Below          │
│                │        │                │        │                │
└────────────────┘        └────────────────┘        └────────────────┘
```
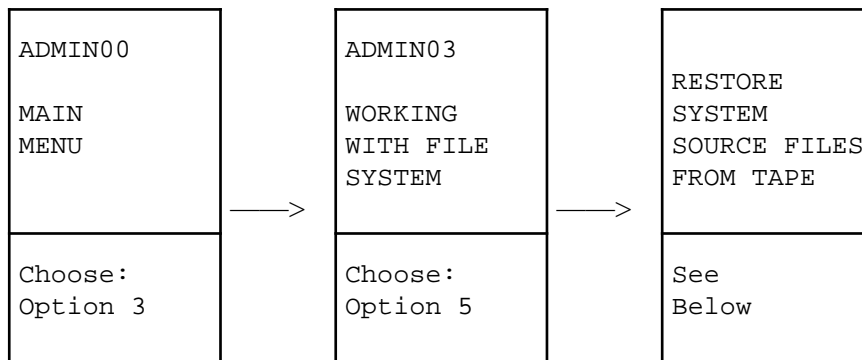
3.   The Retrieve Source input screen appears next; see figure 9.5. At this screen, enter:

   •   The names of the source modules you wish to restore.

     A specific file may be retrieved by entering the full file name.

     If all files for your specific system userid are to be retrieved, enter

     ===> **userid:***

     Else, if a specific set of files are to be retrieved, beginning with the same prefix enter:

     ===> **userid:prefix***

   •   The Replace Existing Files option default is N.

     N signifies that existing files will not be replaced if a file of the same name is restored from tape.

4.   ===> Press **ENTER** key, to accept input.

5.   ===> Press **F3** to continue and execute.

6.   After the mount message appears on the MUSIC console, mount and ready the required tape(s).

   For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10. Be sure to handle batch jobs and mount requests as they appear.

```
--------------------- Restore System Files --------------------------


File name(s) to be restored      Replace existing file(s)?: N  (Yes No)
  >                       <
  >                       <
  >                       <     Filenames can be of the form:
  >                       <
  >                       <      $xxx:filename - single file
  >                       <      $xxx:*        - all files for id $xxx
  >                       <      $xxx:prefix*  - all files for id $xxx
  >                       <                      that start with prefix
  >                       <      $xxx:pattern  - wild chars * ? in pattern
  >                       <                      (e.g. $PGM:MF*.S )
  >                       <      <listfile     - file names from a file
  >                       <
  >                       <      Use PF2 to view the list of file names
  >                       <      available (SOURCE.KEY)
  >                       <
  >                       <         Number of filespecs entered: 0


========================================================================
PF-Key:1-Help 2-View 3-End&execute 10-Refresh 12-Cancel ENTER-Accept inp
```

Figure 9.5 - Restore All Files Associated with Userid $MEM

Displaying Daily Archive Request Log

When the Daily Archive Facility is activated, the system automatically generates an Archive job stream, to back up the changed Save Library files. If the Archive request is not successful, (operator mounted a tape without the write ring, I/O error on the physical tape, job was cancelled prior to completion, etc.), then the files selected for backup during the run were not copied to tape. They will be backed up on the next run of the Archive Facility (usually the next day). This facility provides a vehicle to view the status of each Daily Archive Request.

To Display the Daily Archive Request Log:

1.   Choose the following panels:

```
┌─────────────────┐         ┌─────────────────┐         ┌─────────────────┐
│ ADMIN00         │         │ ADMIN03         │         │                 │
│                 │         │                 │         │ DISPLAY         │
│ MAIN            │         │ WORKING         │         │ DAILY           │
│ MENU            │         │ WITH FILE       │         │ ARCHIVE LOG     │
│                 │         │ SYSTEM          │         │ INFORMATION     │
│                 │  ──→    │                 │  ──→    │                 │
│                 │         │                 │         │                 │
├─────────────────┤         ├─────────────────┤         ├─────────────────┤
│ Choose:         │         │ Choose:         │         │ See             │
│ Option 3        │         │ Option 6        │         │ Below           │
└─────────────────┘         └─────────────────┘         └─────────────────┘
```
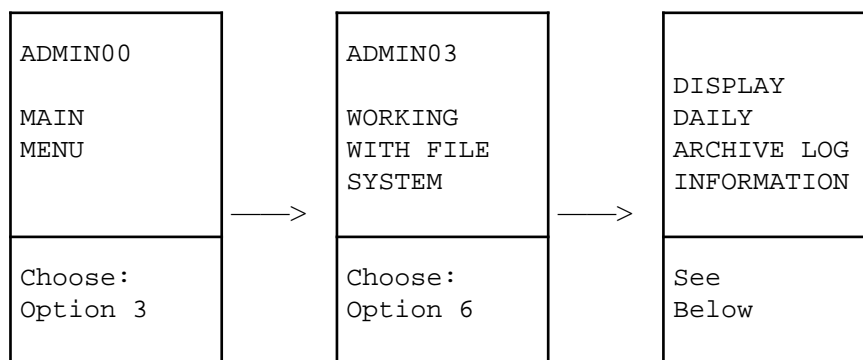
2.   The Daily Archive Request Log screen appears next; see figure 9.6. This screen displays the status of

the Daily Archive requests, showing when an Archive Started and Ended. The ending status is either COMPLETED (archive was successful) and FAILED (archive failed and should be rerun).

```
$ADM:AUTO.ARCHIVE.LOG                    L 80   W 1 72      Rec 1/9
    *Top of file
-->
    Archive  STARTED   for tape ARCH01 on 8 Mar 1989 08:15:04
    Archive COMPLETED for tape ARCH01 on 8 Mar 1989 08:41:00

    Archive  STARTED   for tape ARCH02 on 8 Mar 1989 08:15:04
    Archive COMPLETED for tape ARCH02 on 8 Mar 1989 08:41:00

    Archive  STARTED   for tape ARCH03 on 8 Mar 1989 08:15:04
    Archive *FAILED*  for tape ARCH03 on 8 Mar 1989 08:41:00




    ---+--T-1----+----2----+----3----+----4----+----5----+----6----+--
Command:
                                                       Reading

Default PFs: 1:Help    2:Print    3:Quit    4:Top    5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 9.6 - Display Daily Archive Log

Rerunning Last Daily Archive Request

When the Daily Archive Facility is activated, the system automatically generates an Archive job stream, to back up the changed Save Library files. If the Archive request is not successful, (operator mounted a tape without the write ring, I/O error on the physical tape, job was cancelled prior to completion, etc.), then the files selected for backup during the run were not copied to tape. They will be backed up on the next run of the Archive Facility (usually the next day). This facility provides a vehicle to rerun the FAILED Archive as soon as the problem is discovered.

To rerun the Last Daily Archive Request:

1. Attach a tape drive to the MUSIC console.

    For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10.

2. Choose the following panels:

```
┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
│ ADMIN00         │        │ ADMIN03         │        │                 │
│                 │        │                 │        │ RERUN LAST      │
│ MAIN            │        │ WORKING         │        │ DAILY           │
│ MENU            │        │ WITH FILE       │        │ ARCHIVE         │
│                 │        │ SYSTEM          │        │ REQUEST         │
│                 │ ───>   │                 │ ───>   │                 │
│                 │        │                 │        │                 │
├─────────────────┤        ├─────────────────┤        ├─────────────────┤
│ Choose:         │        │ Choose:         │        │ See             │
│ Option 3        │        │ Option 7        │        │ Below           │
│                 │        │                 │        │                 │
└─────────────────┘        └─────────────────┘        └─────────────────┘
```
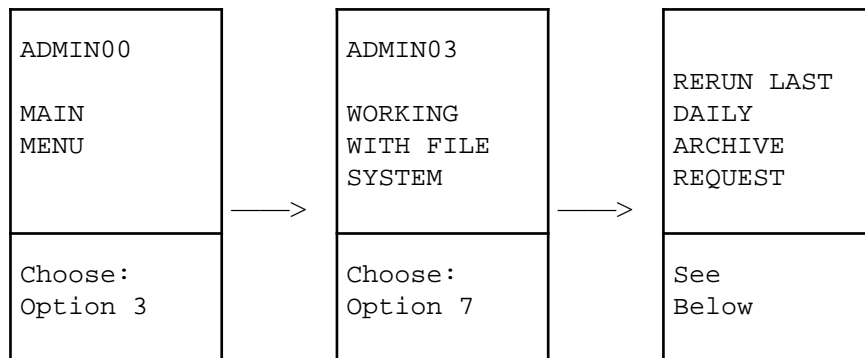
3.   The Rerun Archive input screen appears next; see figure 9.7. This screen informs you of the current Archive cycle number and prompts you to enter one of the following:

   • === > **YES** (to rerun the last daily archive request)

   • === > **NO**   (to cancel the last daily archive request

   • === > **LIST** (to display daily archive request log)

   • === > **EXIT** (to terminate the request).

   If **YES** is entered, wait for the mount message to appear on the MUSIC console, then mount and ready the tape.

   For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10. Be sure to handle batch jobs and mount requests as they appear.

```
┌────────────────────────────────────────────────────────────────────────┐
│ This facility allows for the re-running of the last                      │
│ Daily Archive request.                                                   │
│ ******* ONLY PERFORM THIS REQUEST if the Archive job FAILED.             │
│                                                                          │
│ The last Archive ATTEMPTED by the system (which failed)                  │
│ used tape number ******* 01 *******.   If this is the                    │
│ correct number, respond YES to continue.  Otherwise, respond             │
│ NO, to terminate.  Please respond --- YES | NO | LIST | EXIT ---         │
│ ?                                                                        │
│                                                                          │
│                                                                          │
│                                                                          │
│                                                                          │
│                                                                          │
│                                                                          │
│ ------T----------------------------------------------------------------T │
└────────────────────────────────────────────────────────────────────────┘
```

Figure 9.7 - Rerun LAST Daily Archive Request

Compressing System Userid Table

To reclaim unused entries by compressing the system userid (code) table:
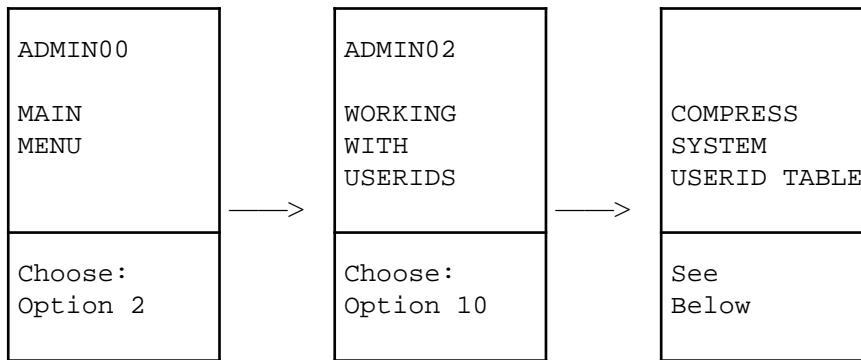
1. Choose the following panels:

```
┌─────────────────────┐        ┌─────────────────────┐        ┌─────────────────────┐
│ ADMIN00             │        │ ADMIN02             │        │                     │
│                     │        │                     │        │                     │
│ MAIN                │        │ WORKING             │        │ COMPRESS            │
│ MENU                │        │ WITH                │        │ SYSTEM              │
│                     │        │ USERIDS             │        │ USERID TABLE        │
│                     │ ────>  │                     │ ────>  │                     │
│                     │        │                     │        │                     │
├─────────────────────┤        ├─────────────────────┤        ├─────────────────────┤
│ Choose:             │        │ Choose:             │        │ See                 │
│ Option 2            │        │ Option 10           │        │ Below               │
└─────────────────────┘        └─────────────────────┘        └─────────────────────┘
```

2. The compress facility prompts the administrator to ensure there are no users signed on. See "Displaying Active Users" in Chapter 13, for more information on active workstation sessions.

    At this time the facility provides the option of continuing or terminating the request. See figure 9.8.

    ===> **Y or N**, default is N for no.

    When Y for yes is entered, the compress facility performs two steps before the userid table is compressed.

    •   Step 1.....Dumps the Userid Table

    •   Step 2.....Restores the Userid Table

3. ===> Press **ENTER** key to exit the function.

```
Compressing the System Code Table, to reclaim unused entries

*** THERE MUST BE NO OTHER USERS SIGNED ON WHEN THIS
*** FUNCTION IS RUN.

Do you wish to continue with this function?  --- Yes / (No) ---?
?
Y

Step 1.....Dumping the Code table

Step 2.....Restoring the Code table

Code table has been compressed




------T-------------------------------------------------------------T
          Press ENTER to continue.....                       More...
```

Figure 9.8 - Entered Y to Perform the System Userid Compress

Restoring System Userid Table from Backup

To restore the system userid (code) table:

1. Choose the following panels:

```
ADMIN00                ADMIN02

MAIN                   WORKING           RESTORE SYS.
MENU                   WITH              USERID TABLE
                       USERIDS           FROM BACKUP
                 ──→                ──→

Choose:                Choose:           See
Option 2               Option 11         Below
```

2. The restore facility prompts the administrator to ensure there are no users signed on. See "Displaying Active Users" in Chapter 13, for more information on active workstation sessions.

    At this time the facility provides the option of continuing or terminating the request. See figure 9.9.

    ===> **Y or N**, default is N for no.

3. After entering either a yes or no response

===> Press **ENTER** key to exit the function.

```
Restoring the System Code Table from a backup copy.
that was created on 10NOV86

*** THERE MUST BE NO OTHER USERS SIGNED ON WHEN THIS
*** FUNCTION IS RUN.

Do you wish to continue with this function?   --- Yes / (No) ---?
?
Y


  .....Restoring the Code table

Code table has been restored from the backup copy.





------T------------------------------------------------------------T

          Press ENTER to continue.....                    More...
```
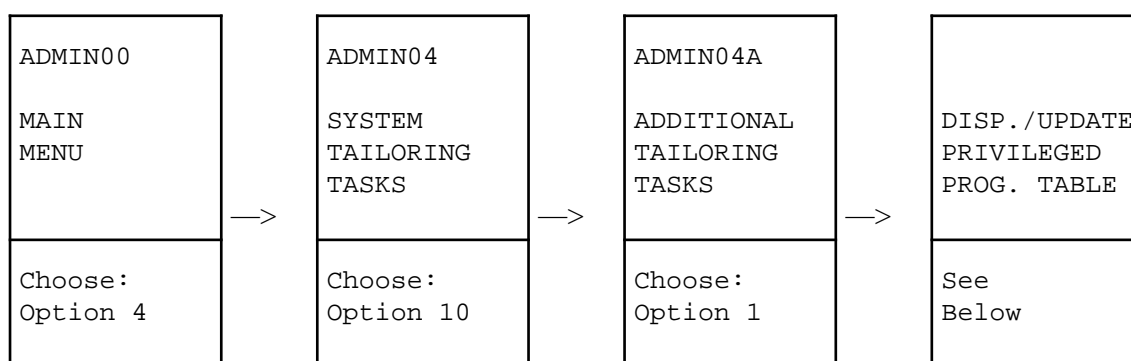
Figure 9.9 - Entered Y to Restore System Userid Table

Displaying/Updating Privileged Program Table

The table of privileged programs, consists of file names and associated privileges. This allows for programs which require special privileges for execution, to be run by non-privileged users.

To display and/or update the program privilege table:

1. Choose the following panels:

```
+------------+        +------------+        +------------+        +------------+
| ADMIN00    |        | ADMIN04    |        | ADMIN04A   |        |            |
|            |        |            |        |            |        |            |
| MAIN       |        | SYSTEM     |        | ADDITIONAL |        | DISP./UPDATE|
| MENU       |        | TAILORING  |        | TAILORING  |        | PRIVILEGED |
|            |        | TASKS      |        | TASKS      |        | PROG. TABLE|
|            | ---->  |            | ---->  |            | ---->  |            |
|            |        |            |        |            |        |            |
| Choose:    |        | Choose:    |        | Choose:    |        | See        |
| Option 4   |        | Option 10  |        | Option 1   |        | Below      |
|            |        |            |        |            |        |            |
+------------+        +------------+        +------------+        +------------+
```

2. The existing table of privileged programs will be displayed first; (see figure 9.10). The administrator can browse this table by using the function keys defined on the bottom of the screen. Or the administrator can exit from this table to update existing privileges and create new privilege program entries, by entering **F3,** which will bring up the Privilege Program table (see figure 9.11).

For an explanation of the function keys see "Program Function Keys" in Appendix B.

```
$000:@ADMIN.O                          L 80   W 2 73      Rec 1/37
     *Top of file
--> -- LOOKUP --     TABLE OF PRIVILEGED PROGRAMS
     LOOKUP MODULE AT 828250
     TABLE AT 828288,    33 ENTRIES


      1. 828288   $PGM:EDITOR       D020    FILES    CODES    LSCAN    SY
      2. 8282A0   $PGM:PEDIT        C020    FILES    CODES    SYSCOM
      3. 8282B8   $PGM:ARCHIV       3800    MAINT    LSCAN    DREAD
      4. 8282D0   $PGM:PROFIL       4000    CODES
      5. 8282E8   $PGM:LBLIST       1800    LSCAN    DREAD
      6. 828300   $PGM:DSLIST       0C00    DREAD    CREAD
      7. 828318   $PGM:OLDSUB       0420    CREAD    SYSCOM
      8. 828330   $PGM:VMSUBM       0020    SYSCOM
      9. 828348   $PGM:VMPRINT      0020    SYSCOM
     10. 828360   $PGM:DSREN        0E00    DREAD    CREAD    VIP
     11. 828378   $PGM:UDSARC       0C00    DREAD    CREAD
     12. 828390   $PGM:TRANS$       C400    FILES    CODES    CREAD
     13. 8283A8   $PGM:PSUBMT       8020    FILES    SYSCOM
     ---+--T-1----+----2----+----3----+----4----+----5----+----6----+--
Command:
                                                         Reading
Default PFs: 1:Help    2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*     7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 9.10 - Table of Privileged Programs

```
---------------------- Privilege Program Table ----------------------
Update existing privileges as req.  To DELETE entry, blank out FILENAME.


Filename: $PGM:FIRSTTIME.PGM      Filename MUST include user code

Enter Y or N for EACH privilege needed by this program

 Files: N Create, Read, Modify and Delete any Save Library or UDS file.
 Codes: Y Access to the System User Code Table.
 Maint: N Access to computer room maintenance facilities.
 Lscan: N Read any private Save Library file.
 Dread: N Read access to ANY location on a disk volume.
 Cread: N Read ANY loc. in main storage, even if storage is protected.
   VIP: N Modify ANY location on disk AND any location in main storage.
  Info: N Access to general system information facilities.
Sysmnt: N Access to system programmer maintenance facilities.
  Supv: N Create, Read, Modify and Delete any Save Library or UDS file,
          provided the first 2 characters of the code match.
Syscom: N Allow access to the VM virtual printer, punch and reader.



=======================================================================
PF-Keys:   1-Help   3-End  10-Edit file    12-Cancel  ENTER-Accept input
```

Figure 9.11 - Updating Privilege Program Table

3.   Once at the Privileged Program Table, (see figure 9.11) you may:

   •   ===> Press **ENTER** key to accept information entered

        Also, once you press the **ENTER** key the next program privileges which you are able to modify
        will be displayed. Once all programs which you have authority to modify have been exhausted,
        you will be able to enter in NEW privilege program entries.

   •   ===> **F12**, to cancel processing changes

   •   ===> **F3**, to save and process all changes

        At this time you will be asked if you want the table to be assembled and included in the system
        nucleus; default is **YES** (see figure 9.12).

```
Using the information contained in your privileged program
file, a PRIVILEGED program table must be created to reflect
any changes you may have made.  The PRIVILEGED program table
is contained within the NUCLEUS.  Creating a new table requires
that a new NUCLEUS be created.
Usually you will respond "YES" to the following question.  If
your response is "NO", then a PRIVILEGED program table and
the NUCLEUS will not be built.

Do you wish the PRIVILEGED program table to be created.
A NUCLEUS will also be created if you respond "YES".
Please answer   --- (Yes) / No ---
?




------T-----------------------------------------------------------T
                                                           Reading
```

Figure 9.12 - Placing Updated Privilege Program Table in System Nucleus

Chapter 10. General Operator Tasks

This chapter contains operational information of interest to the systems administrator during installation and maintenance. For a more complete discussion of system operations and console commands see the *MUSIC/SP Administrator's Reference*.

Tape Drives on IBM 9371 Processor

The following notes applies to tape drives on the IBM 9371 processor only. Tape drives on other models of the 9370 processor family do not have this requirement.

When running MUSIC/SP on the 9371, special care must be used when defining the address associated with the tape device. This is true for the 9346 (1/4 in) or the 9348 (1600/6250) units. The address selected MUST be on a unique channel. No other devices can exist on the channel with the tape unit. If you followed the sample configurations in this book, then channel 4 can be used.

When running under VM, this can be accomplished by specifying the VIRTUAL address on the ATTACH or DEDICATE statement.

When running NATIVE (without VM), the physical address of the tape unit is specified via the Configuration Setup screen. Refer to the *9371 I/O Installation and Configuration Guide* (SA24-4220).

Attaching a Tape Drive to MUSIC

The MUSIC system requires a tape drive to perform functions such as installing optional products, archiving, and restoring files. Under VM the tape drives are usually assigned to a virtual machine when they are required using the **ATTACH** command.

===> **ATTACH xxx MUSIC vvv**

xxx   This is the real address of the tape drive that you want to attach.

vvv   This is the virtual address of the tape drive on MUSIC.

        MUSIC can support a up to four tape drives. By default the virtual addresses are 480, 481, 482 and 483. When a batch job is run that requires a tape, the system selects the first online drive it finds and an requests the tape mounted on that drive. If no tape drives are attached, the system will ask you to attach a drive and vary it online.

```
    M306 /ID TAPEJOB   $000 000 000 000 000
    M512 480 OFFLINE
    M314 Put unit online then type "/VARY xxx ON"...
```

===> **/CP ATTACH D70 MUSIC 480**

```
    *OK
```

===> **/VARY 480 ON**

```
M309 M 480,TAPXXX
```

If a drive is already attached and varied online, the system will skip the M512 and M314 messages and ask for the tape to be mounted. The format of the mount message (M309) is as follows.

```
M309 M XXX,YYYYYY
```

XXX The virtual address of the tape drive.

YYYYYYY
 The volume name from the /FILE statement of the required tape.

 When this message appears, mount and ready the tape on the appropriate drive. If a tape is ready on the drive before the mount message is issued, the system will automatically unload it. Once the tape is readied the batch job begins automatically.

Note: When using a tape for input only, be sure to remove the write-protect rings from the tape. Tapes used during the installation of the system fall into this category.

Most system installation and maintenance tape jobs do nothing special to request a tape mount. The fact that there is a /FILE statement for a tape in the job is enough to cause the system to issue the M308 message. Sometimes a /PAUSE statement is also included in the job giving special instructions to the operator about how the tape or the job should be handled. These show up on the console as M310 messages. To proceed with the job enter.

===> **/GO**

To skip the job enter.

===> **/NOGO**

It is recommended that when users submit batch jobs that require tapes, they include a message to inform the operator about where the tape is and whether the write protect ring should be in or out.

After MUSIC completes the batch job, it sends the output listing either to the system printer or to the output queue. Using the OUTPUT facilities, print files can be inspected, purged, sent to a printer or copied to a file. To review files in the OUTPUT queue, use the OUTPUT command issued from administrator workstation. For additional information on the OUTPUT command, see the *MUSIC/SP User's Reference Guide*.

Displaying Batch Information

Active Batch job information can be displayed by:

1. Choosing the following panels:

```
┌─────────────────────┐         ┌─────────────────────┐
│ ADMIN00             │         │                     │
│                     │         │ DISPLAY             │
│ MAIN                │         │ BATCH               │
│ MENU                │         │ INFORMATION         │
│                     │ ──────> │                     │
├─────────────────────┤         ├─────────────────────┤
│ Choose:             │         │ See                 │
│ Option 8            │         │ Below               │
│                     │         │                     │
└─────────────────────┘         └─────────────────────┘
```
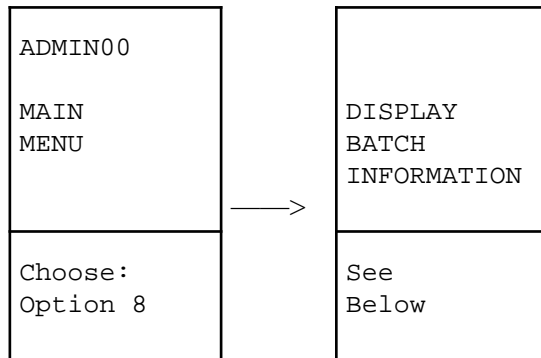
The next screen (figure 10.1) displays the active batch information.

2. To EXIT:

    ===> Press **ENTER** key

```
┌──────────────────────────────────────────────────────────────────────┐
│ MUSIC Batch Job Status                                                 │
│                                                                        │
│ Userid CFXXMNT                               THU APR 01, 1993  10:46:23│
│                                                                        │
│                    Pages     Cards     Service Units                   │
│ Maximum Requested:   999       999      59940                          │
│    Used thus far:      1         0          0                          │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│ ------T-------------------------------------------------------------T  │
│                                                                        │
│        Press ENTER to continue.....                      More...       │
└──────────────────────────────────────────────────────────────────────┘
```
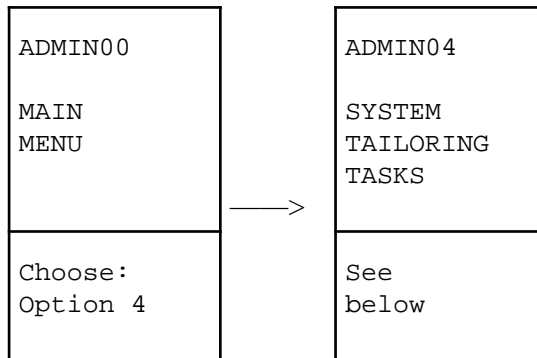
Figure 10.1 - Batch Information Display

Updating and Displaying System Messages

The Operations and Software Alert messages appear at the top of the screen when a user signs on. To review the News file, the News facility will need to be invoked.

To display or update these messages, the administrator should:

Choose the following panels:

```
┌─────────────────┐        ┌─────────────────┐
│ ADMIN00         │        │ ADMIN04         │
│                 │        │                 │
│ MAIN            │        │ SYSTEM          │
│ MENU            │        │ TAILORING       │
│                 │        │ TASKS           │
│                 │ ──────>│                 │
│                 │        │                 │
├─────────────────┤        ├─────────────────┤
│ Choose:         │        │ See             │
│ Option 4        │        │ below           │
│                 │        │                 │
└─────────────────┘        └─────────────────┘
```

These selections display the ADMIN04 screen. See figure 10.2.

Note: Maximum length of the Operations and Software Alert messages is one line.

```
+-------------------------------------------------------------------------+
|                                                                         |
| --------------------- System Tailoring Tasks -------------------ADMIN04 |
|                                                                         |
| SELECT OPTION ====>                                                     |
|                                                      Time:   2:55 pm    |
|  1 Display/update NEWS facility                                         |
|  2 Display/update OPERATIONS alert file       1988    AUGUST      1988  |
|  3 Display/update SOFTWARE alert file                                   |
|  4 Display/update Conference/Equipment list   S   M   T   W   T   F   S |
|  5 Configure/administer the MAIL facility         1   2   3   4   5   6 |
|  6 Configure for national language support    7   8   9  10  11  12  13 |
|  7 Display/update the Printer ROUTING info   14  15  16  17  18  19  20 |
|  8 Activate Automatic Maintenance            21  22  23  24  25  26  27 |
|  9 Display/update Maintenance Schedule       28  29  30  31             |
| 10 Additional system tailoring tasks                                    |
|  H Description and Function usage                                       |
|                                               Day of year:  244         |
|                                                                         |
|                                                                         |
| ======================================================================= |
| PF1: Help on Menu   PF2: Todays Reminders   PF6: Mail Waiting   PF3:Exit |
+-------------------------------------------------------------------------+
```
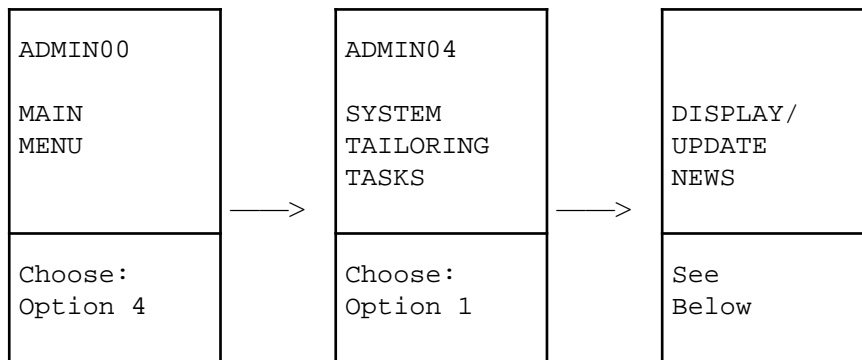
Figure 10.2 - System Facility Functions Menu

News Facility

The news facility allows general users to obtain information about recent items of interest at your installation. To display and/or update the news facility:

1.   Choose the following panels:

```
  ┌──────────────────┐        ┌──────────────────┐        ┌──────────────────┐
  │ ADMIN00          │        │ ADMIN04          │        │                  │
  │                  │        │                  │        │ DISPLAY/         │
  │ MAIN             │        │ SYSTEM           │        │ UPDATE           │
  │ MENU             │        │ TAILORING        │        │ NEWS             │
  │                  │        │ TASKS            │        │                  │
  │                  ├────>   │                  ├────>   │                  │
  │                  │        │                  │        │                  │
  ├──────────────────┤        ├──────────────────┤        ├──────────────────┤
  │ Choose:          │        │ Choose:          │        │ See              │
  │ Option 4         │        │ Option 1         │        │ Below            │
  │                  │        │                  │        │                  │
  └──────────────────┘        └──────────────────┘        └──────────────────┘
```

2. To modify the message, edit the $PGM:NEWS.DATA file (see figure 10.3). Add new items with the
    date at the beginning of the file as these lines are displayed first. The lines entered are displayed line by
    line as they exist in the file. Issue the FILE command to save the updated file.

Note: The current news can also be viewed by entering NEWS from the command line.

```
┌──────────────────────────────────────────────────────────────────────────────┐
│ $PGM:NEWS.DATA                            L 80   W 1 72     Rec 1/5            │
│     *Top of file                                                              │
│ --> News as of January 15, 1995:                                              │
│                                                                               │
│       Welcome to the MUSIC/SP system.                                         │
│       The new version of MUSIC/SP Version 4 is now running.                   │
│     *End of file                                                              │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│ ----+-T--1----+----2----+----3----+----4----+----5----+----6----+--7--        │
│ Command:                                                                      │
│                                                                   Reading     │
│ Default PFs: 1:Help   2:Split    3:Quit    4:Mark    5:Center 6:Del Line      │
│   *EDIT*      7:Uppage 8:Downpage 9:Locate 10:Ins ln 11:Right 12:Command      │
└──────────────────────────────────────────────────────────────────────────────┘
```
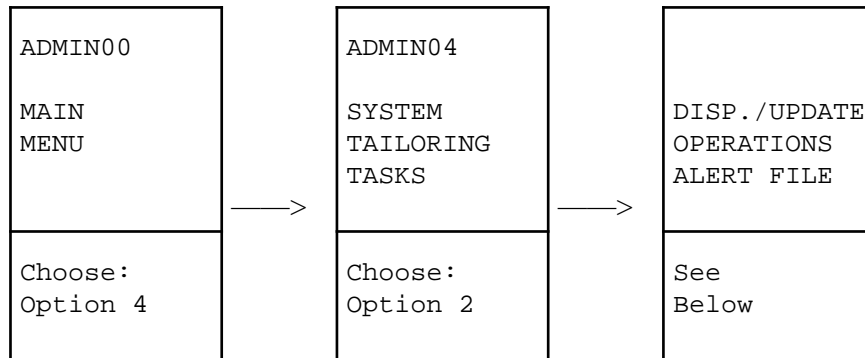
Figure 10.3 - Editing the News File

Operations Alert

To display and or update the operations alert message, choose the following panels:

```
 ┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
 │ ADMIN00         │        │ ADMIN04         │        │                 │
 │                 │        │                 │        │                 │
 │ MAIN            │        │ SYSTEM          │        │ DISP./UPDATE    │
 │ MENU            │        │ TAILORING       │        │ OPERATIONS      │
 │                 │        │ TASKS           │        │ ALERT FILE      │
 │                 │  ───>  │                 │  ───>  │                 │
 │                 │        │                 │        │                 │
 ├─────────────────┤        ├─────────────────┤        ├─────────────────┤
 │ Choose:         │        │ Choose:         │        │ See             │
 │ Option 4        │        │ Option 2        │        │ Below           │
 └─────────────────┘        └─────────────────┘        └─────────────────┘
```

Once entered, the administrator has the option of changing the message; see figure 10.4. If Y for yes was entered and the administrator no longer wishes to change the message, enter:

===> **/CAN**

This terminates the request to change the message.

```
┌──────────────────────────────────────────────────────────────────────┐
│ The Operations Alert file currently contains the following:          │
│                                                                      │
│                                                                      │
│  Operations Alert, MUSIC system down at 18:00 for maintenance!       │
│                                                                      │
│ Do you want to replace the information in the Operations             │
│ Alert file?   --- (Yes) / No ---                                     │
│ ?                                                                    │
│ Y                                                                    │
│                                                                      │
│ Enter in the single line message to be displayed?                    │
│ Responding with a BLANK line will cause the Operations Alert         │
│ News to be set to a blank.  Nothing will be displayed to the         │
│ user when they sign onto the system.  To terminate this              │
│ request, enter /CANCEL and press Enter.                              │
│ ?                                                                    │
│                                                                      │
│                                                                      │
│                                                                      │
│ ------T----------------------------------------------------------T   │
│                                                                      │
│                                                      Reading          │
└──────────────────────────────────────────────────────────────────────┘
```
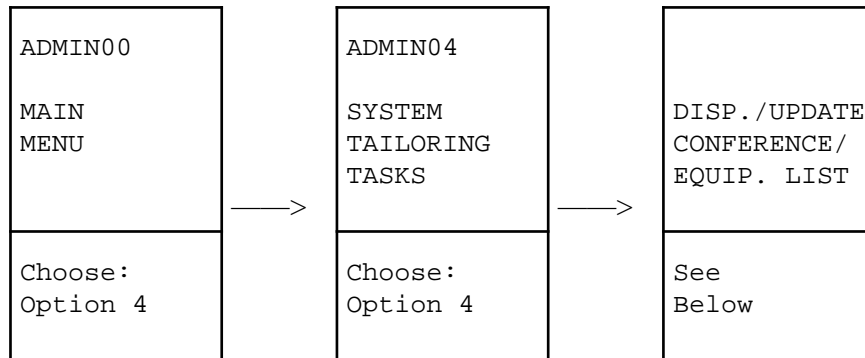
Figure 10.4 - Editing Operations Alert File

Software Alert

To display and or update the software alert message, choose the following panels:

```
┌─────────────────┐      ┌─────────────────┐      ┌─────────────────┐
│ ADMIN00         │      │ ADMIN04         │      │                 │
│                 │      │                 │      │ DISP./UPDATE    │
│ MAIN            │      │ SYSTEM          │      │ SOFTWARE        │
│ MENU            │      │ TAILORING       │      │ ALERT FILE      │
│                 │      │ TASKS           │      │                 │
│                 │ ───> │                 │ ───> │                 │
│                 │      │                 │      │                 │
├─────────────────┤      ├─────────────────┤      ├─────────────────┤
│ Choose:         │      │ Choose:         │      │ See             │
│ Option 4        │      │ Option 3        │      │ Below           │
│                 │      │                 │      │                 │
└─────────────────┘      └─────────────────┘      └─────────────────┘
```
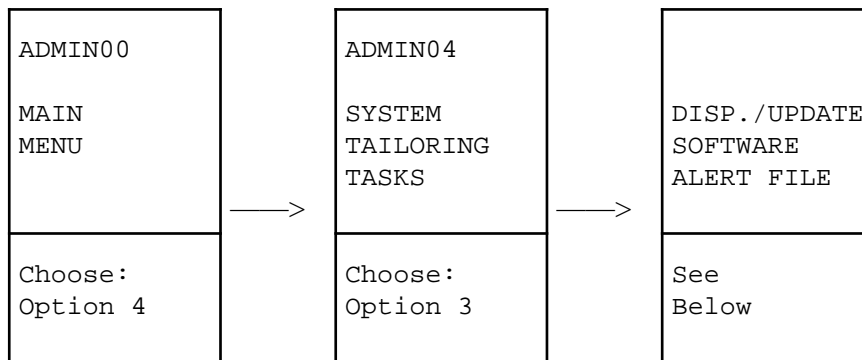
To change or display the software alert message follow the procedure specified for the operations alert message. See figure 10.5.

```
┌────────────────────────────────────────────────────────────────────────┐
│                                                                        │
│ The Software Alert file currently contains the following:              │
│                                                                        │
│                                                                        │
│  Software Alert, MUSIC/SP has been upgraded to Version 4  (95/05/30)    │
│                                                                        │
│ Do you want to replace the information in the Software                  │
│ Alert file?   --- (Yes) / No ---                                       │
│ ?                                                                      │
│ sbd                                                                    │
│ y                                                                      │
│                                                                        │
│                                                                        │
│ Enter in the single line message to be displayed?                      │
│                                                                        │
│ Responding with a BLANK line will cause the Software Alert             │
│ News to be set to a blank.  Nothing will be displayed to the           │
│ user when they sign onto the system.  To terminate this                │
│ request, enter /CANCEL and press Enter.                                │
│                                                                        │
│                                                                        │
│                                                                        │
│ ------T---------------------------------------------------------------T │
│                                                                        │
│                                                            Reading      │
└────────────────────────────────────────────────────────────────────────┘
```

Figure 10.5 - Editing Software Alert File

Displaying and Updating Conference Room List

The Display and Update Conference Room List is used in the calendaring/meeting facility. When users access the calendaring/meeting facility through TODO, they are presented with a list of conference rooms and/or equipment available. The administrator controls which user IDs have access to specific conference rooms and or equipment. To use this facility:

Choose the following panels:

```
┌─────────────┐        ┌─────────────┐        ┌─────────────┐
│ ADMIN00     │        │ ADMIN04     │        │             │
│             │        │             │        │             │
│ MAIN        │        │ SYSTEM      │        │ DISP./UPDATE│
│ MENU        │        │ TAILORING   │        │ CONFERENCE/ │
│             │        │ TASKS       │        │ EQUIP. LIST │
│             │  ───>  │             │  ───>  │             │
├─────────────┤        ├─────────────┤        ├─────────────┤
│ Choose:     │        │ Choose:     │        │ See         │
│ Option 4    │        │ Option 4    │        │ Below       │
│             │        │             │        │             │
└─────────────┘        └─────────────┘        └─────────────┘
```

See figure 10.6 for an example. Here the administrator chose to grant instructor userids AB00 and BC00, the capability to add. These instructors would be able to reserve the Computer Conference Room. Press F2 to add, and then F3 to end/save.

To view the access list, enter the room name and then press F5.

```
------------------- Conference Rooms/Equipment List -------------------

Name of Conference Room or Equipment Item    => RM205
Mail code for the Administrator of this item => $000
Description of the above named item          => Computer Conference Room

User IDs authorized to access this item.
Type= " " only view items "A" only add new items "U" add/change any item

Userid       Type  Userid      Type  Userid       Type  Userid      Type
AB00          A
BC00          A







F1:Help  F2:Add      F3:End/Save   F4:Clear    F5:Find   PA1:End/No Save
F6:Change    F7:Previous     F8:Next     F10:Delete    F12:End/No Save
```

Figure 10.6 - Grant 2 Instructor Userids with ADD Capability for Room 205.

Part IV - Administering

Chapter 11. Working with Userids

Introduction to Working with Userids

A userid (sometimes called a "code") is a 1 to 16 character label that identifies a user to the system. The userid is the name by which the user is known to MUSIC. Each userid has a password and other options and attributes associated with it.

Userids can be made up of valid characters from the letters A to Z, the digits 0 to 9, and the special characters $ # @ _.

A userid can consist of a file ownership id followed by an optional "subcode". The subcode part can be 0 to 8 characters. The total length of the userid cannot exceed 16. Userids with the same file ownership part share the same library of files. Valid characters in subcodes are letters, digits, and the special characters $ # @ _.

Userid Examples

The following userid is for John Smith and has a subcode:

```
SMITH123              - full userid
SMITH                 - file ownership
123                   - subcode
SMITH:filename        - form for file names
```

The next example shows a userid for Bill Brown without a subcode.

```
B_BROWN               - full userid
B_BROWN               - file ownership
B_BROWN:filename      - form for file names
```

CODUPD Program

The CODUPD utility program is used to allocate, change, and delete userids. Use the ADMIN selection "Working with Userids" to facilitate the use of CODUPD.

Recommendations when Creating Userids

Consider these recommendations when creating userids:

1. Avoid single-character userids (length 1), such as A, since then a MUSIC file name A:XXX would look like a DOS file name. Some MUSIC applications (such as MAIL) assume such a file name refers to a DOS file.

2. Userids longer than 8 characters may cause problems for some external electronic mail systems, i.e. mail between MUSIC and other operating systems.

3. Avoid the character @ in userids, since it has special significance in electronic mail addresses. Also,

avoid the underscore character (_) in userids, since the X400 standard does not allow it in e-mail addresses. Special characters $ and # are OK, but see (5) below.

4. Avoid file ownership id's longer than 12 characters. Although the file ownership part of a userid can be up to 16 characters, more than 12 can restrict the length of the file name proper (the part after ":"), and may cause problems when renaming or copying files from one id to another. (The "file ownership" part of a userid is the userid excluding the subcode (if any) at the end. If there is no subcode, then the file ownership id is the same as the userid. Only the file ownership part is used as the xxx: prefix in file names.)

5. Avoid creating userids starting with $, since many of these are reserved for storing MUSIC system files.

6. Avoid userids that start with the characters SYS, especially SYS1 and SYS2. This is to avoid conflicts between MUSIC UDS names and system data set names.

Supervisor Userids

The system administrator's userid, $000 is created when MUSIC is first installed. The administrator signing on with this userid controls modifications of all userids.

A supervisor privilege can be assigned to a userid. With supervisor privileges the user can inspect and modify any files belonging to IDs which begin with the same first two characters. If the administrator created a userid AB00 with supervisor privileges, the userid AB00 would have full access to files saved by users AB10, ABXX, etc.

Instructors usually have supervisor privileges over their student's userids. By using the TRANS$ utility, the instructor can also transfer part of the fund limits from one student to another -- off-loading the responsibility from the administrator. More information on the TRANS$ utility can be found in the *MUSIC/SP Administrator's Reference*. The administrator still maintains control over adding or deleting userids and assigning funds, but the instructor can transfer funds, inspect files, and change passwords for the instructor's own class.

Assigning Student Userids

Userids exist primarily for accountability. This includes keeping track of who owns what files and who is using computer resources.

Typically, each user is assigned a single, unique, userid. In a student environment, a single userid per student does not afford the degree of accountability ordinarily required. A student is normally assigned a different userid for each computer course being taken. This makes it possible to keep track of the computer resources used per course, and to set different limits for each one. If instructors feels it is justified, they can increase limits when they are exceeded. If, on the other hand, only one userid was assigned per student, it would be difficult to know if a student was using the allocation properly.

Suggestions on Allocating Student Userids

Assign each class a sequence of userids starting with the same two characters. For example, a sequence might be AB01, AB02, AB03, etc. Also, assign the instructor a userid beginning with the same two characters, for example AB00. This allows 1,521 userids per class, with a possibility of 1,131 different classes. Larger classes can be accommodated by using several sequences.

Autoprogram

Each userid can be assigned an autoprogram. By default, the FSI (Full Screen Interface) facility is invoked. If this is not wanted, blank out the autopgm name field on the userid allocation screen.

First Time Program

Each userid can be assigned a first time program. This program is run the first time the user signs on to a newly allocated userid. By default, a first time program is assigned to new userids added from the facility described below. It asks the user to enter in his name and identification number. (See the FIRST option in the CODUPD description in the *MUSIC/SP Administrator's Reference* for more information.)

Setting Up Userids for a Class

To allocate a set of userids:

1. Choose the following panels:

```
 ┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
 │ ADMIN00         │        │ ADMIN02         │        │                 │
 │                 │        │                 │        │                 │
 │ MAIN            │        │ WORKING         │        │ ADD             │
 │ MENU            │        │ WITH            │        │ USER            │
 │                 │        │ USERIDS         │        │ USERID(S)       │
 │                 │ ──────>│                 │ ──────>│                 │
 │                 │        │                 │        │                 │
 ├─────────────────┤        ├─────────────────┤        ├─────────────────┤
 │ Choose:         │        │ Choose:         │        │ See             │
 │ Option 2        │        │ Option 1        │        │ Below           │
 │                 │        │                 │        │                 │
 └─────────────────┘        └─────────────────┘        └─────────────────┘
```
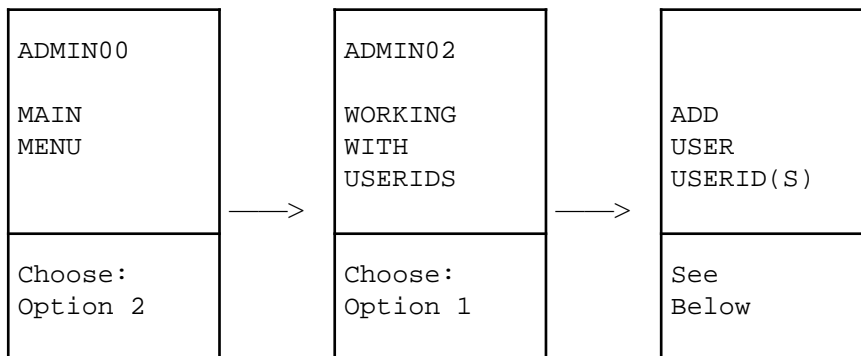
2. Entering the range of userids and associated parameters needed from Create Userids screen; see figure 11.1. A list of standard defaults for user funds and limits is displayed on this screen. For a description on each of these parameters, press the HELP key (F1).

3. After the range of userids is entered,

    ===> Press **ENTER** key

4. A message will appear on top of the screen that the specified userids have been created. In order to continue the creation process the administrator will need to:

    ===> Press **F3** key.

5. Now the administrator is prompted to continue or not. If the administrator continues, the system program generates a random set of passwords, and prints a report showing each allocated userid with the associated passwords.

Note: Individual userids can also be created by choosing option 9, Invoking the Userid Authorization Facility.

```
----------------------- Create Userids -----------------------------

    Userid or group prefix: _
         Number: 1     Specifies the number of userids to generate
 Suffix length: 0      Value 0 - 4 (enter 0 for a single userid, no group)
Group sequence: N      N-numeric A-alphabetic B-alphanumeric  (for suffix)
        Subcode:       0-3 character subcode (blank for no subcode)
  User name:                                      Id type: 0
Description:
Sign-on Options   Password:        (leave blank to generate random pw's)
 Single: Y  Fixed Password: N  Cancel/Change Autopgm: Y  # Extra Sess: 5
                                           First time pgm num: 1
Operating Options
 Private only: N  No common: Y  Fix alwayspgm: N  Supprss "In progrss": Y
Execution Limits  (value or NOLIM)
 Prime time: 200      Non-prime: 300      Batch: 300      Default: 70
File Limits  (value or NOLIM)
 Individual files: 4000     Total space: 10000       Tracks/UDS: 50
Options
 Maximum funds: 1000    Start: 1996/04/01 Expire:        (yyyy/mm/dd)
   Autopgm name: FSI                      Always pgm name:
Route location:        Additional options:
=======================================================================
PF-keys:1-Help 3-End & execute  10-Refresh 12-Cancel  ENTER-Accept input
```

Figure 11.1 - Creating a Group of Userids

Displaying List of Userids

To verify proper creation of userids, choose the following panels:

```
ADMIN00            ADMIN02
                                       DISPLAY LIST
MAIN               WORKING            OF USERIDS
MENU               WITH
                   USERIDS

          ---->              ---->

Choose:            Choose:            See
Option 2           Option 8           Below
```
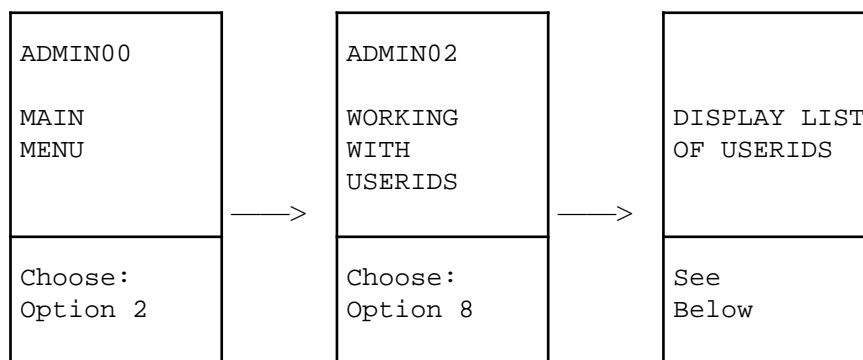
The @ADMIN.O file appears next; see figure 11.2.

```
$000:@ADMIN.O                        L 80   W 1 72     Rec 1/15
     *Top of file
     Userid              ID Number        User Name
     $MON                000              Disconnected User for VM Printers
     $MON                000              Disconnected User for VMREADer
     $MON                000              Disconnected User for Auto Submit
     $000                                 System Administrator for System
     AB00                123456           Mary Smith
     AB01                789101           John Jones
     AB02
     AB03
     AB04
     BETTY               557-993-212      Betty Black from Accounting
     *End of file



     ----+-T--1---+---2----+----3---+----4----+----5---+----6----+----7--
Command:
                                                            Reading

Default PFs: 1:Help     2:Print    3:Quit    4:Top   5:Center  6:Bottom
  *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 11.2 - Option 8 from ADMIN02 Screen, Displaying Userids

Setting Up a Userid with Supervisor Privileges

To set up a userid with supervisor privileges you may choose option 1, Add Userids from the ADMIN01 screen, as described in the previous section Setting up Userids for a Class. At the Create Userids menu the option SUPV, NOCOM, and XSES(5) must be entered in the additional options field.

You may also create a userid by working with option 9, Invoking the Userid Authorization facility. To provide an instructor with a userid containing supervisor privileges, choose the following panels:

```
ADMIN00              ADMIN02              INVOKE
                                          USERID AUTH
MAIN                 WORKING              FACILITY
MENU                 WITH
                     USERIDS
              --->            --->
Choose:              Choose:              See
Option 2             Option 9             Below
```
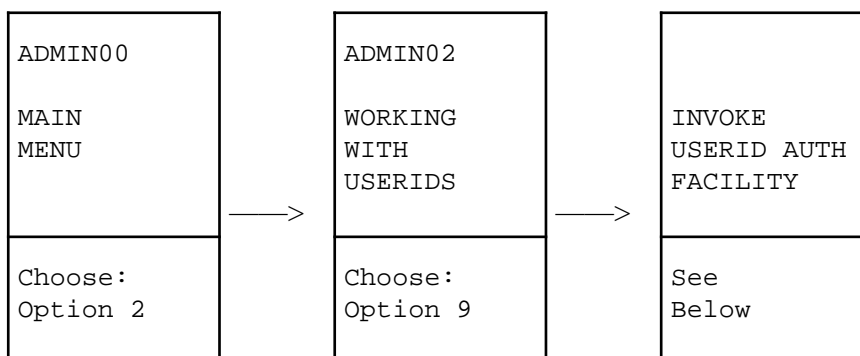
In the next screen (see figure 11.3), the administrator has three options:

1. Issue **HELP** command, which will list all commands and options

2. Issue a **specific command:** (ADD, GET, DELETE)

3.   Issue **End** to terminate request.

In figure 11.3, the administrator is adding a new user ID, AB00 with supervisor privileges, and assigning the password, unique.

See figure 11.4 for the ADMIN response from the request to ADD a userid.

```
To terminate this facility issue the command "END" at any time
the system is waiting for your input.  Enter the command
"HELP" for information on commands available.

Code Table Update -- FRI APR 02, 1993 15:44
?
ADD AB00 PW(unique) SUPV NOCOM XSES(5)




                                                          Reading
```

Figure 11.3 - Issue ADD Command for Userid AB00 with Supervisor Privileges

```
To terminate this facility issue the command "END" at any time
the system is waiting for your input.  Enter the command
"HELP" for information on commands available.


Code Table Update  --  FRI APR 02, 1993  15:45
?
ADD AB00 PW(UNIQUE) SUPV NOCOM XSES(5)
  USERID=AB00                 TYPE=0
  ID=                NAME=
  PASSWORD=UNIQUE     BATCH PASSWORD=UNIQUE
  PRIVILEGES:  SUPV
  TIME LIMITS (IN SERVICE UNITS):
    PRIME=180  NONPRIME=180  BATCH=180  DEFAULT=60
  MAX NUMBER OF EXTRA SESSIONS PER TERMINAL:     5
  PASSWORD CAN BE CHANGED BY USER
  NOCOM: FILES MAY BE SAVED PRIV OR SHR, BUT NOT PUBL
  AUTOPROG:  (NONE)
  INPUT TABS:     7  73
  NO OUTPUT TABS
  FUNDS ($):        0.00 USED,  NO LIMIT
  SAVE LIBRARY: TOTAL =    0K  LIMIT = 10000K  MAX/FILE = (NO SET LIMIT)
  MAX TRACKS PER DATA SET (UDS) AT ALLOCATION:  NOLIMIT
  CREATED 1993/04/02  (YEAR/MONTH/DAY)
  LAST SIGN-ON: 0                 LAST BATCH JOB: 0
  LAST PASSWORD CHANGE:   SIGN ON PW 0          BATCH PW 0
  USERID OF CREATOR: $000
------T-------------------------------------------------------------T
                                                          Reading
```
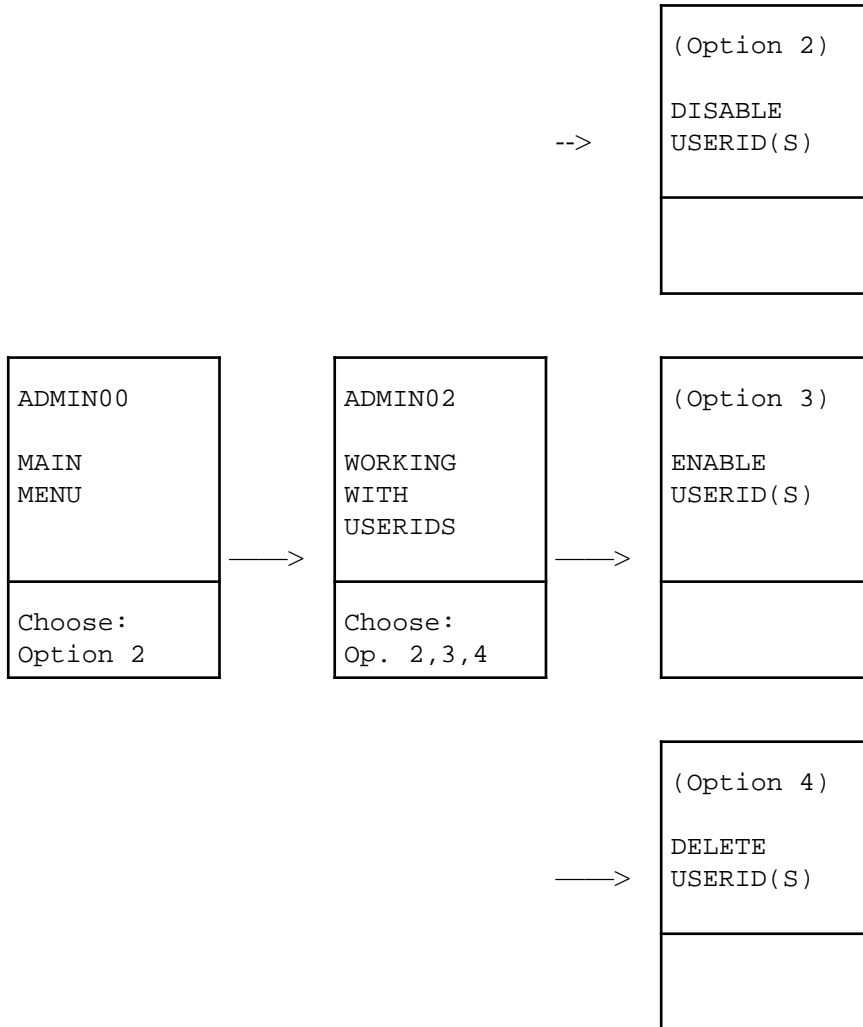
Figure 11.4 - AB00 Created, *Options Generated Automatically Displayed*

Userids can be created two ways, either by creating a range (option 1 from the ADMIN02 screen), or individually (option 9 from the ADMIN02 screen).

Displaying Userid Information

To display userid information, choose the following panels:

```
 ┌─────────────┐       ┌─────────────┐       ┌─────────────┐
 │ ADMIN00     │       │ ADMIN02     │       │             │
 │             │       │             │       │ DISPLAY     │
 │ MAIN        │       │ WORKING     │       │ USERID      │
 │ MENU        │       │ WITH        │       │ INFORMATION │
 │             │       │ USERIDS     │       │             │
 │        ───> │       │        ───> │       │             │
 │             │       │             │       │             │
 │ Choose:     │       │ Choose:     │       │ See         │
 │ Option 2    │       │ Option 7    │       │ Below       │
 └─────────────┘       └─────────────┘       └─────────────┘
```
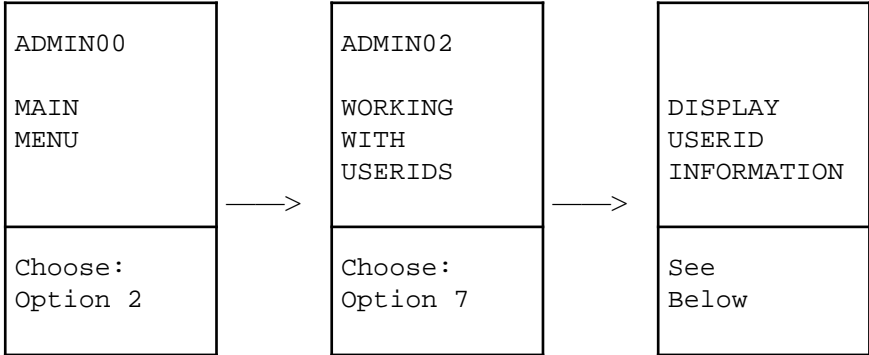
Enter the 4-digit userid on the command line along with the option number,

===> **7 AB00** (see figure 11.5)

or the administrator can enter the option number 7 on the ADMIN02 screen and, on the next screen, enter the appropriate userid.

```
------------------------ Userid Tasks ----------------------ADMIN02


SELECT OPTION ====> 7 AB00_
                                              Time:   3:00 pm
 1  Add Userid(s) to MUSIC
 2  Disable userid(s) <userid>              1990    OCTOBER     1990
 3  Enable userid(s)  <userid>
 4  Remove userid(s)  <userid>         S   M   T   W   T   F   S
 5  Display/change user funds -userid-             1   2   3   4
 6  Display/change user file limits -userid-  5   6   7   8   9  10  11
 7  Display userid information -userid-   12  13  14  15  16  17  18
 8  Display list of userids on system    19  20  21  22  23  24  25
 9  Invoke userid authorization facility 26  27  28  29  30  31
10  Compress userid table
11  Restore userid table from backup         Day of year:   304
12  Display list of privileged userids
 H  Description and function usage




 ========================================================================
 F1:Help on Menu F2:Todays Reminders  F3:Exit F6:Mail Waiting  F12:Retrv
```

Figure 11.5 - Request Information for Userid AB00

See figure 11.6 for an example of the ADMIN response, from the request to display information for userid AB00.

```
Code Table Update  --  FRI APR 02, 1993  08:42
  USERID=AB00                TYPE=0
 ID=                  NAME=
 PASSWORD=UNIQUE     BATCH PASSWORD=UNIQUE
 PRIVILEGES:  SUPV
 TIME LIMITS (IN SERVICE UNITS):
   PRIME=180  NONPRIME=180  BATCH=180  DEFAULT=60
 MAX NUMBER OF EXTRA SESSIONS PER TERMINAL:     5
 PASSWORD CAN BE CHANGED BY USER
 NOCOM: FILES MAY BE SAVED PRIV OR SHR, BUT NOT PUBL
 AUTOPROG:  (NONE)
 INPUT TABS:     7  73
 NO OUTPUT TABS
 FUNDS ($):         6.05 USED,  NO LIMIT
 SAVE LIBRARY: TOTAL =    0K  LIMIT = 10000K  MAX/FILE = (SET NO LIMIT)
 MAX TRACKS PER DATA SET (UDS) AT ALLOCATION:  NOLIMIT
 CREATED 1993/04/02  (YEAR/MONTH/DAY)
 LAST SIGN-ON: 0                 LAST BATCH JOB: 0
 LAST PASSWORD CHANGE:  SIGN ON PW 0          BATCH PW 0
 USERID OF CREATOR: $000


------T------------------------------------------------------------T

        Press ENTER to continue.....                  More...
```

Figure 11.6 - Userid Information shown, Through Option 7 from ADMIN02

There is an alternate way to display userid information. The administrator may choose the following panels.

```
┌─────────────┐      ┌─────────────┐      ┌─────────────┐
│ ADMIN00     │      │ ADMIN02     │      │             │
│             │      │             │      │ INVOKE      │
│ MAIN        │      │ WORKING     │      │ USERID AUTH │
│ MENU        │      │ WITH        │      │ FACILITY    │
│             │  ──> │ USERIDS     │  ──> │             │
│             │      │             │      │             │
├─────────────┤      ├─────────────┤      ├─────────────┤
│ Choose:     │      │ Choose:     │      │ See         │
│ Option 2    │      │ Option 9    │      │ Below       │
│             │      │             │      │             │
└─────────────┘      └─────────────┘      └─────────────┘
```
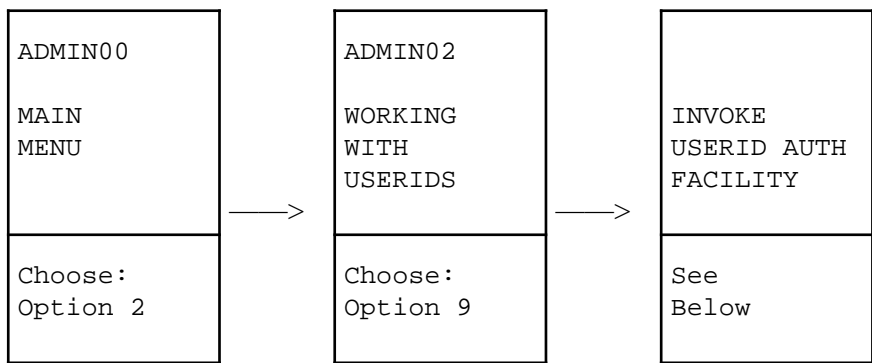
Then the administrator can issue a GET command:

===> **GET** userid

See figure 11.7 for displayed information on userid AB00

```
To terminate this facility issue the command "END" at any time
the system is waiting for your input.  Enter the command
"HELP" for information on commands available.

Code Table Update  --  FRI APR 02, 1993  16:41
?
GET AB00
  USERID=AB00                TYPE=0
  ID=                 NAME=
  PASSWORD=UNIQUE     BATCH PASSWORD=UNIQUE
  PRIVILEGES:  SUPV
  TIME LIMITS (IN SERVICE UNITS):
    PRIME=180  NONPRIME=180  BATCH=180  DEFAULT=60
  MAX NUMBER OF EXTRA SESSIONS PER TERMINAL:     5
  PASSWORD CAN BE CHANGED BY USER
  NOCOM: FILES MAY BE SAVED PRIV OR SHR, BUT NOT PUBL
  AUTOPROG:  (NONE)
  INPUT TABS:     7  73
  NO OUTPUT TABS
  FUNDS ($):        0.00 USED,  NO LIMIT
  SAVE LIBRARY: TOTAL =     0K  LIMIT = 10000K  MAX/FILE = (NO SET LIMIT)
  MAX TRACKS PER DATA SET (UDS) AT ALLOCATION:  NOLIMIT
  CREATED 1993/04/02  (YEAR/MONTH/DAY)
  LAST SIGN-ON: 0                 LAST BATCH JOB: 0
  LAST PASSWORD CHANGE:   SIGN ON PW 0           BATCH PW 0
  USERID OF CREATOR: $000
?
END
------T----------------------------------------------------------------T

        Press ENTER to continue.....                      More...
```

Figure 11.7 - Display Information Using the GET Cmd in the Invoke Facility

Disabling/Enabling/Deleting Range of Userids

To disable, enable or delete one or more userids, choose the following panels:

```
                                          ┌──────────────┐
                                          │ (Option 2)   │
                                          │              │
                                          │ DISABLE      │
                                    -->   │ USERID(S)    │
                                          │              │
                                          ├──────────────┤
                                          │              │
                                          │              │
                                          └──────────────┘

┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│ ADMIN00      │   │ ADMIN02      │   │ (Option 3)   │
│              │   │              │   │              │
│ MAIN         │   │ WORKING      │   │ ENABLE       │
│ MENU         │   │ WITH         │   │ USERID(S)    │
│              │   │ USERIDS      │   │              │
│         ────>│   │         ────>│   │              │
├──────────────┤   ├──────────────┤   ├──────────────┤
│ Choose:      │   │ Choose:      │   │              │
│ Option 2     │   │ Op. 2,3,4    │   │              │
└──────────────┘   └──────────────┘   └──────────────┘

                                          ┌──────────────┐
                                          │ (Option 4)   │
                                          │              │
                                          │ DELETE       │
                                    ────> │ USERID(S)    │
                                          │              │
                                          ├──────────────┤
                                          │              │
                                          │              │
                                          └──────────────┘
```

When the appropriate screen has been selected specify the Starting User ID, Ending User ID, and Type of Range.

All three functions (Disable, Enable, and Delete), have the same type of screen to enter the range of IDs to be processed. After choosing the appropriate IDs,

===> Press **ENTER** key

Next, a message appears on top of the screen indicating whether the system accepted the request and whether the administrator wishes to continue.

===> Press **F3** key, to continue and execute

A system administrator would disable a range of userids at the end of a semester. Enable the **same** range of userids at the start of a new semester, if the **same** group of students were to retain their User IDs but were not to be used in the interim of semesters.

For Delete input screen example. See figure 11.8.

Note: Deleting student IDs does not erase the files associated with the deleted IDs. Before deleting the student IDs, insure that all unneeded files are deleted from each ID. See the topic "Archiving and Deleting User Files" in Chapter 9.

```
----------------------- DELETE Userid(s) ----------------------------


   ** DELETE **
   Userid or pattern or range: _

            Example of userid: ABCDE
           Example of pattern: ABC*
             Example of range: XYZ015-035


   Subcode:           (leave blank if no subcode)


   Delete mailbox file(s)?: N  (Y-yes or N-no)



      **WARNING**  Be careful when deleting userids.
                   Once a userid is deleted, it may be
                   impossible to restore it!



========================================================================
PF keys:   1-Help   3-End and execute   12-Cancel   ENTER-Accept input
```

Figure 11.8 - Delete Facility Accepted Command & Requests, F3 to Continue

Chapter 12. Increasing User Quotas & System Disk Space

Displaying/Changing User Funds

User funds are established by the creation of a userid. The funds set the limit for the amount of computing funds that the userid is allowed to use. The volume of the limit may be any integer equal to or greater then zero, or specified as NOLIMIT.

To display or change user funds for a userid:

1. Choose the following panels:

```
┌──────────────────┐        ┌──────────────────┐        ┌──────────────────┐
│ ADMIN00          │        │ ADMIN02          │        │                  │
│                  │        │                  │        │ DISPLAY/         │
│ MAIN             │        │ WORKING          │        │ CHANGE           │
│ MENU             │        │ WITH             │        │ USER FUNDS       │
│                  │        │ USERIDS          │        │                  │
│             ────>│        │             ────>│        │                  │
├──────────────────┤        ├──────────────────┤        ├──────────────────┤
│ Choose:          │        │ Choose:          │        │ See              │
│ Option 2         │        │ Option 5         │        │ Below            │
│                  │        │                  │        │                  │
└──────────────────┘        └──────────────────┘        └──────────────────┘
```
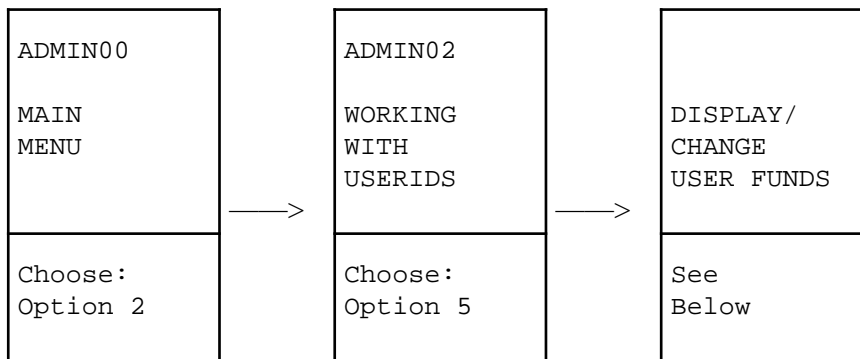
Enter the 4-digit userid on the command line along with the option number,

===> **5 ab00** (see figure 12.1)

or the administrator can enter option number 5 on the ADMIN02 screen and then, on the next screen, enter the appropriate userid.

AB00 is the userid requiring funds display or change. See figure 12.1.

```
------------------------ Userid Tasks ----------------------ADMIN02

SELECT OPTION ====> 5 AB00_
                                                Time:   3:00 pm
 1  Add Userid(s) to MUSIC
 2  Disable userid(s) <userid>              1990    OCTOBER     1990
 3  Enable userid(s)  <userid>
 4  Remove userid(s)  <userid>             S    M    T    W    T    F    S
 5  Display/change user funds -userid-                    1    2    3    4
 6  Display/change user file limits -userid- 5   6    7    8    9   10   11
 7  Display userid information -userid-     12   13   14   15   16   17   18
 8  Display list of userids on system      19   20   21   22   23   24   25
 9  Invoke userid authorization facility   26   27   28   29   30   31
10  Compress userid table
11  Restore userid table from backup          Day of year:  304
12  Display list of privileged userids
 H  Description and function usage




========================================================================
F1:Help on Menu F2:Todays Reminders  F3:Exit F6:Mail Waiting  F12:Retrv
```

Figure 12.1 - Choosing to Display FUNDS for Userid AB00

2.   After choosing the appropriate option,

      Press **ENTER** key

3.   The current fund limits is presented on the next screen; see figure 12.2.

4.   To return to the ADMIN02 screen, press ENTER key.

```
    USERID=AB00
    FUNDS ($):        6.05 USED,  NO LIMIT

Change the user's maximum funds limit?  --- (Yes) / No ---
?
Y

Enter the new maximum funds limit or "EXIT" to terminate.
The maximum funds limit may be an integer from 0 to 9999999
or specify the option "NOLIMIT".
Enter a number | NOLIMIT | EXIT
?
1000
 Userid AB00 maximum funds limit changed to $1000




------T------------------------------------------------------------T

        Press ENTER to continue.....                    More...
```

Figure 12.2 - Displaying Current User Funds with Option to Change Funds

Displaying/Changing User File Limits

To create a file, a user must have a User Control Record (UCR) associated with the user's userid. This record is created when the userid is created. There are five values contained in the UCR:

Max Total   Limit of the total space for userid

Max per File   Maximum size of a file

CUR Total   The current total space of the userid

RESD   Reserved

High   High water mark to date

The above values are in units of K (1024) bytes. A value of -1 means no limit.

To display or change the file space:

1. Choose the following panels:

```
  ┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
  │ ADMIN00         │        │ ADMIN02         │        │                 │
  │                 │        │                 │        │ DISPLAY/        │
  │ MAIN            │        │ WORKING         │        │ CHANGE USER     │
  │ MENU            │        │ WITH            │        │ FILE LIMITS     │
  │                 │        │ USERIDS         │        │                 │
  │                 │ ────>  │                 │ ────>  │                 │
  │                 │        │                 │        │                 │
  ├─────────────────┤        ├─────────────────┤        ├─────────────────┤
  │ Choose:         │        │ Choose:         │        │ See             │
  │ Option 2        │        │ Option 6        │        │ Below           │
  │                 │        │                 │        │                 │
  └─────────────────┘        └─────────────────┘        └─────────────────┘
```
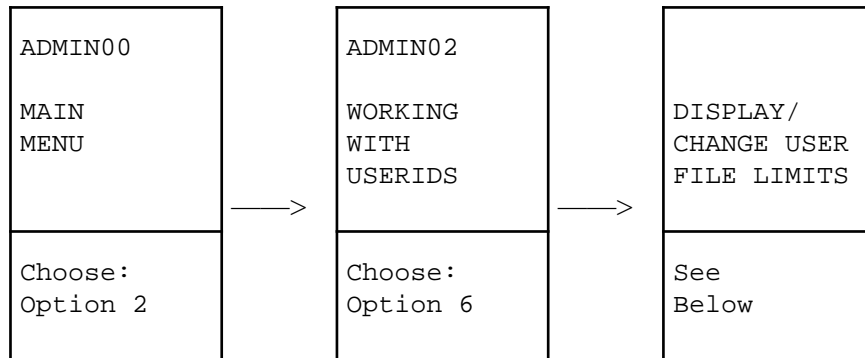
Specify the userid on the same command line, as explained above with user funds; see figure 12.3.

```
------------------------- Userid Tasks ----------------------ADMIN02

SELECT OPTION ====> 6 AB00_
                                              Time:   3:00 pm
 1  Add Userid(s) to MUSIC
 2  Disable userid(s) <userid>            1990    OCTOBER    1990
 3  Enable userid(s)  <userid>
 4  Remove userid(s)  <userid>          S   M   T   W   T   F   S
 5  Display/change user funds -userid-              1   2   3   4
 6  Display/change user file limits -userid- 5   6   7   8   9  10  11
 7  Display userid information -userid-    12  13  14  15  16  17  18
 8  Display list of userids on system     19  20  21  22  23  24  25
 9  Invoke userid authorization facility  26  27  28  29  30  31
10  Compress userid table
11  Restore userid table from backup         Day of year:  304
12  Display list of privileged userids
 H  Description and function usage




==========================================================================
F1:Help on Menu F2:Todays Reminders  F3:Exit F6:Mail Waiting  F12:Retrv
```

Figure 12.3 - Choosing to Display FILE LIMITS for Userid AB00

2. The next screen (see figure 12.4) shows the current file limits and presents the option to change the maximum total space and the maximum total per file.

3. After choosing the appropriate option press the ENTER key.

4. To return to the ADMIN02 screen, press the ENTER key.

```
UCR for AB00:              Max total = 10000K    Max per file = NO LIMIT
                          Cur total =     0K    High =       0K


Change user's Total or Individual file limits? --- (Yes) / No ---
?
Y


Enter the new maximum file values for the two file
limits.  To leave a file limit unchanged, enter a "-"
for the value of that limit.  To specify the maximum,
enter "NOLIMIT".
Enter in the new limits or "EXIT" to terminate
-- Total Limit &  Individual File limit --
?
10000 2500
UCR for AB00:              Max total = 10000K    Max per file =  2500K
                          Cur total =     0K    High =       0K



------T-----------------------------------------------------------------T


          Press ENTER to continue.....                         More...
```

Figure 12.4 - Change Space Limit Per File from NOLIMIT to 2500k

Adding Additional Save Library File Space

The Save Library is made up of an INDEX dataset and 1-180 datasets, called Save Library datasets. The system decides where a user's file is stored.

When adding a new Save Library dataset, you **must** first specify the physical disk volume where the new dataset is to be located. See the topic "Displaying VTOC" in Chapter 13 for how to determine what free space exists on your disk volumes.

To add an additional Save Library dataset:

1.   Choose the following panels:

```
+-----------------+      +-----------------+      +-----------------+      +-----------------+
| ADMIN00         |      | ADMIN04         |      | ADMIN04A        |      |                 |
|                 |      |                 |      |                 |      |                 |
| MAIN            |      | SYSTEM          |      | ADDITIONAL      |      | ADD AN          |
| MENU            |      | TAILORING       |      | TAILORING       |      | ADDITIONAL      |
|                 |      | TASKS           |      | TASKS           |      | SAVE LIBRARY    |
|                 |  --> |                 |  --> |                 |  --> |                 |
|                 |      |                 |      |                 |      |                 |
+-----------------+      +-----------------+      +-----------------+      +-----------------+
| Choose:         |      | Choose:         |      | Choose:         |      | See             |
| Option 4        |      | Option 10       |      | Option 2        |      | Below           |
|                 |      |                 |      |                 |      |                 |
+-----------------+      +-----------------+      +-----------------+      +-----------------+
```
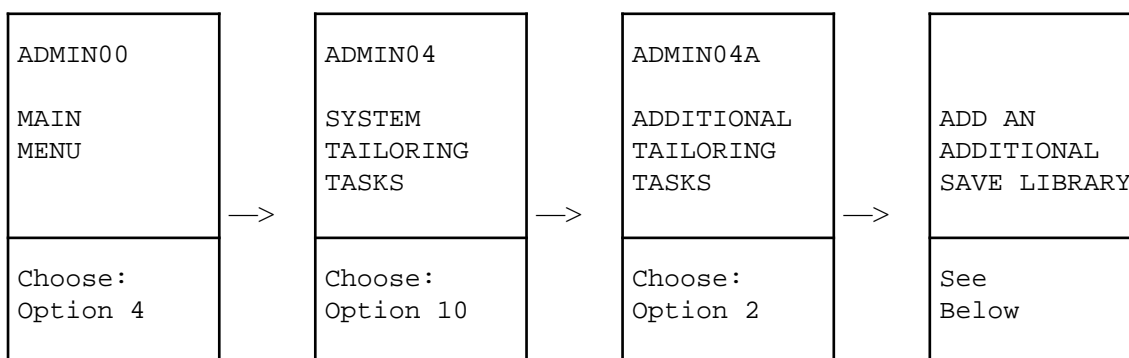
2.   The next screen (see figure 12.5) informs you of the current number of Save Library datasets and
     prompts you to enter one of the following:

- • ===> a specific volume name

- • ===> LIST (to display a list of volume names)

- • ===> EXIT (to terminate the request).

3. You will then be asked to enter in the size of the dataset. The suggested minimum size will hold 8 million bytes. The maximum will hold about 57 million bytes. Note that you enter the size in tracks not in bytes.

4. A completion message appears, if the process was successful; see figure 12.5.

```
The system presently has 06 Save Library datasets,
according to the System Catalog.

Enter the volume name where you wish a new Save Library
dataset to be allocated, or EXIT to terminate the request

To display a list of volume names enter LIST.
To display a list of volume names and free space enter SHOW.
?
music1

On this device the smallest recommended size (8mb) will take
507 tracks. The biggest (57mb) will take 3579 tracks.
Enter the size of the Save Library dataset in tracks or EXIT
?
3579

Initializing the new Save Library Dataset
Updating the System Catalog to reflect the additional library
Catalog updated and will be used at next IPL of system
------T-----------------------------------------------------T

        Press ENTER to continue.....                    More...
```

Figure 12.5 - Adding Save Library Dataset

Reorganizing Save Library Free Space

This function determines which Save Library Files (if any) are fragmented and should be compressed to reclaim the space. Do these steps to process reorganization of the Save Library Free Space.

1. Choose the following panels:

```
┌─────────────────┐     ┌─────────────────┐     ┌─────────────────┐     ┌─────────────────┐
│ ADMIN00         │     │ ADMIN04         │     │ ADMIN04A        │     │                 │
│                 │     │                 │     │                 │     │                 │
│ MAIN            │     │ SYSTEM          │     │ ADDITIONAL      │     │ REORGANIZE      │
│ MENU            │     │ TAILORING       │     │ TAILORING       │     │ SAVE LIBRARY    │
│                 │     │ TASKS           │     │ TASKS           │     │ FREE SPACE      │
│            ──>  │     │            ──>  │     │            ──>  │     │                 │
├─────────────────┤     ├─────────────────┤     ├─────────────────┤     ├─────────────────┤
│ Choose:         │     │ Choose:         │     │ Choose:         │     │ See             │
│ Option 4        │     │ Option 10       │     │ Option 8        │     │ Below           │
│                 │     │                 │     │                 │     │                 │
└─────────────────┘     └─────────────────┘     └─────────────────┘     └─────────────────┘
```
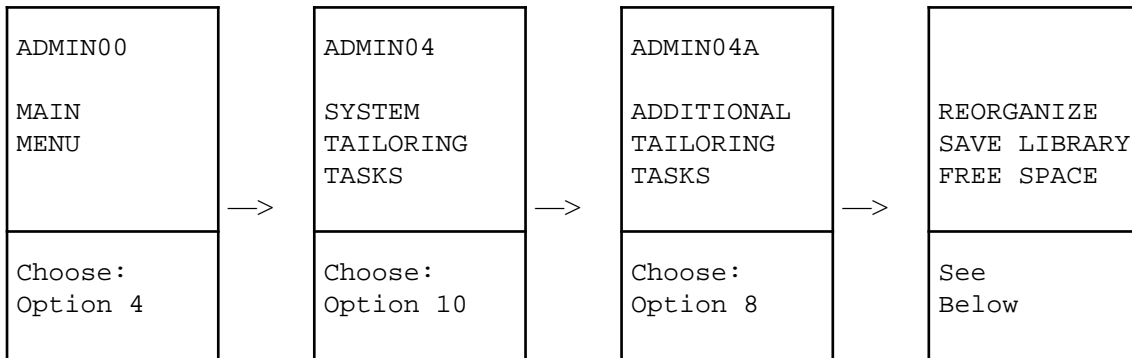
2. The compress facility prompts the administrator to ensure there are no users signed on. The facility
    provides the option of continuing or terminating the request; see figure 12.6.

    ===> **Y or N**, default is N for no.

    When Y for yes is entered, this facility determines which file should be compressed.

```
This function will determine which Save Library datasets (if any)
are fragmented and should be compressed to reclaim the space.

*** THERE MUST BE NO OTHER USERS SIGNED ON WHEN THIS
*** FUNCTION IS RUN.

Do you wish to continue with this function?  --- Yes / (No) ---?
?
Y

None of your Save Library datasets are fragmented
enough to warrant reorganization at this time.




------T-------------------------------------------------------T
        Press ENTER to continue.....                  More...
```

Figure 12.6 - Reorganize Save Library Datasets

Adding Additional PAGE or SWAP Dataset

To add an additional PAGE or SWAP dataset:

1. Choose the following panels:

```
┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
│ ADMIN00         │        │ ADMIN04         │        │ ADMIN04A        │        │                 │
│                 │        │                 │        │                 │        │ ADD ADD'L       │
│ MAIN            │        │ SYSTEM          │        │ ADDITIONAL      │        │ PAGE OR SWAP    │
│ MENU            │        │ TAILORING       │        │ TAILORING       │        │ DATA SET        │
│                 │        │ TASKS           │        │ TASKS           │        │                 │
│                 │  ——>   │                 │  ——>   │                 │  ——>   │                 │
├─────────────────┤        ├─────────────────┤        ├─────────────────┤        ├─────────────────┤
│ Choose:         │        │ Choose:         │        │ Choose:         │        │ See             │
│ Option 4        │        │ Option 10       │        │ Option 3        │        │ Below           │
│                 │        │                 │        │                 │        │                 │
└─────────────────┘        └─────────────────┘        └─────────────────┘        └─────────────────┘
```
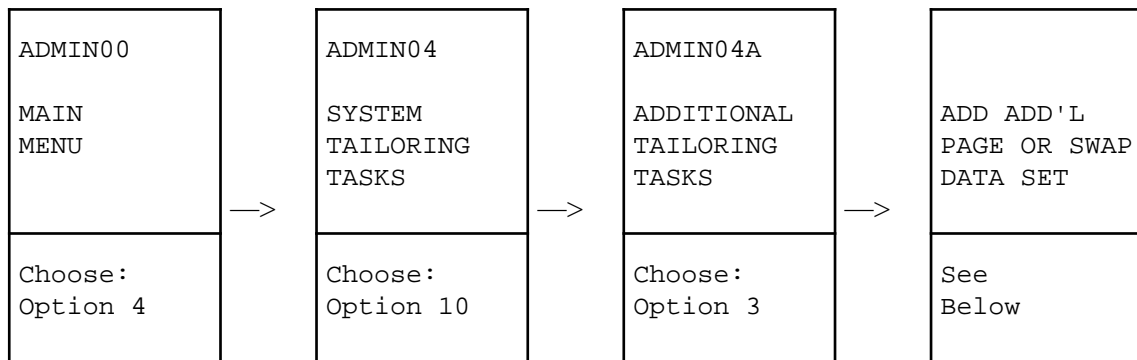
2. On the next screen (see figure 12.7) the administrator is prompted to enter one of the following:

    •   EXIT (to terminate the request)

    •   PAGE (to add an additional PAGE dataset)

    •   SWAP (to add an additional SWAP dataset).

3. If PAGE or SWAP is entered, the next prompt (figure 12.8) requires a volume name to be entered. The volume name supplied is the destination of the new SWAP or PAGE dataset. The administrator will be prompted to enter one of the following:

    •   EXIT, to terminate the request

    •   LIST, to display a list of volume names

    •   Volume Name, specify the volume name

4. After the appropriate volume name is supplied, ADMIN will begin allocating either the new PAGE or SWAP dataset on the volume specified. The allocating and formatting of the new dataset will take a few minutes to complete.

    Note: The new dataset will **not** be used by the system until the system has been re-IPLed.

5. ===> Press **ENTER** key to exit.

```
This facility allows you to add an additional PAGE or
SWAP system dataset.

Any new system dataset will NOT be used until the system
has been re-IPLed.

Enter PAGE to allocate a new paging dataset.  Enter SWAP
to allocate a new swapping dataset or EXIT to terminate
the function.

Your selection please -- EXIT | PAGE | SWAP -- ?
?
PAGE




------T-------------------------------------------------------------T

                                                            Reading
```

Figure 12.7 - Choose to Add an Additional PAGE Dataset

```
Enter the volume name where you wish the PAGE2 dataset
allocated.  Or, enter LIST to display a list of volume names
or EXIT to terminate this function.

Enter -- LIST | EXIT | volume name --?
?
list
Volume - MUSICX
Volume - MUSIC1

Enter -- LIST | EXIT | volume name --?
?
MUSICX




------T-------------------------------------------------------------T

                                                            Reading
```

Figure 12.8 - After Displaying the Volume Names, Choose a Specific Volume

Moving System Dataset to a New Disk Volume

This facility allows you to move a System Dataset from one disk volume to another.

Note: Caution should be exercised when moving any dataset. For the Save Library and Index the procedure **must** be followed exactly. Failure to do so could result in a loss of user disk files.

To process this facility:
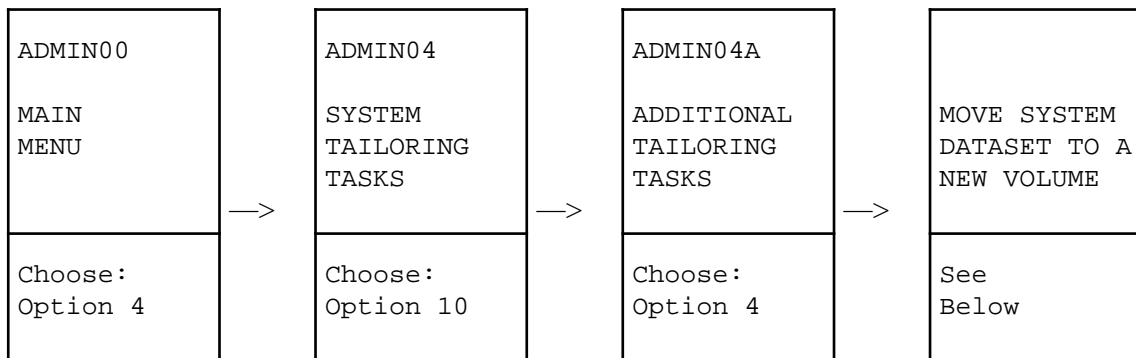
1.   Choose the following panels:

```
┌─────────────────┐     ┌─────────────────┐     ┌─────────────────┐     ┌─────────────────┐
│ ADMIN00         │     │ ADMIN04         │     │ ADMIN04A        │     │                 │
│                 │     │                 │     │                 │     │                 │
│ MAIN            │     │ SYSTEM          │     │ ADDITIONAL      │     │ MOVE SYSTEM     │
│ MENU            │     │ TAILORING       │     │ TAILORING       │     │ DATASET TO A    │
│                 │     │ TASKS           │     │ TASKS           │     │ NEW VOLUME      │
│                 │ ──> │                 │ ──> │                 │ ──> │                 │
├─────────────────┤     ├─────────────────┤     ├─────────────────┤     ├─────────────────┤
│ Choose:         │     │ Choose:         │     │ Choose:         │     │ See             │
│ Option 4        │     │ Option 10       │     │ Option 4        │     │ Below           │
└─────────────────┘     └─────────────────┘     └─────────────────┘     └─────────────────┘
```

2.   The administrator is prompted to enter one of the following:

   •   EXIT (to terminate the request)

   •   LIST (to display a list of valid dataset names).

3.   If LIST is entered, the next screen (figure 12.9) displays dataset names and associated descriptions of each. At the bottom of the list you are prompted to enter:

   •   EXIT (to terminate the request)

   •   LIST (to display a list of dataset names again) or

   •   Dataset Name (to specify a dataset).

4.   After the appropriate dataset name is supplied, ADMIN informs you where the dataset currently resides (figure 12.10) and prompts you to enter:

   •   EXIT (to terminate the request)

   •   LIST (to display a list volume names), or

   •   Volume Name (the volume where you would like the dataset moved to

   Note: The dataset move takes a few minutes to complete.

5.   After the appropriate volume name is supplied, ADMIN begins allocating the specified dataset on the new volume and updates the system catalog.

   A Batch job is sent to the system which deletes the dataset from the old volume. This batch job will not run until it is explicitly released.

===> Press **ENTER** key to exit.

Note: The new dataset will **not** be used by the system until the system has been re-IPLed.

6.   After running for several days with the new system dataset, you can delete the old (unused) dataset.
Delete the old (unused) dataset by releasing the batch job. To release the batch job enter the following
commands from the MUSIC/SP console:

===> **/CP SPOOL** 00C CLASS F

After that job completes, enter:

===> **/CP SPOOL** CLASS J

```
Name        Description


BATCHIN     Input Batch spooling dataset
BATCHOUT    Output Batch spooling dataset
SCRATCH     User temporary work space dataset
LOADLIB     System Load Library - compilers, system modules
CODTABLE    System Code Table - User Codes
CODINDEX    Index to System Code Table
ACCT        Recording file for System Accounting information
SUBMIT      Internal Batch Reader Support dataset
UINDEX      Index to System Save Libraries (User Files)
ULIB        One of the Save Library datasets
SWAP        One of the System SWAP datasets
PAGE        One of the System PAGE datasets
Your selection please -- EXIT | LIST | dataset name -- ?
?
SCRATCH



------T----------------------------------------------------------------T


                                                                  Reading
```

Figure 12.9 - Dataset List Displayed, Dataset SCRATCH Chosen

```
Dataset SCRATCH is presently on volume MUSICX

Enter the name of the volume where you wish the SCRATCH dataset
moved.  Or, enter LIST to display a list of volume names or
EXIT to terminate this function.

Enter -- LIST | EXIT | volume name --?
?
list
Volume - MUSICX
Volume - MUSIC1

Enter -- LIST | EXIT | volume name --?
?




------T------------------------------------------------------------T
music1
                                                            Reading
```

Figure 12.10 - Chose Dataset SCRATCH to Reside on the MUSIC1 Volume

Reorganize System Load Library

This facility allows you to compress (re-organize) the system load library.

No users should be on the system when you are attempting to re-organize the System Load Library.

Two new files are allocated: a file to hold the dump of the current load library and the re-organized copy of the system load library. You are prompted for the names of the volumes on which these files are be allocated. The files are then allocated and the system load library is dumped. After being formatted, the new system load library is restored from the dump copy. Finally, the system catalog is updated to point to the new system library. A delete job is submitted to class F; after several days operation with the new system load library, this job can be released to delete the old system load library and free up that space.

Note: Reasonable caution should be exercised when performing this function. Remember that the system load library contains the compilers and critical programs required to run MUSIC/SP.

To process this facility:

1.   Choose the following panels:

```
┌──────────────────┐     ┌──────────────────┐     ┌──────────────────┐     ┌──────────────────┐
│ ADMIN00          │     │ ADMIN04          │     │ ADMIN04A         │     │                  │
│                  │     │                  │     │                  │     │                  │
│ MAIN             │     │ SYSTEM           │     │ ADDITIONAL       │     │ RE—ORGANIZE      │
│ MENU             │     │ TAILORING        │     │ TAILORING        │     │ SYSTEM LOAD      │
│                  │ —>  │ TASKS            │ —>  │ TASKS            │ —>  │ LIBRARY          │
│                  │     │                  │     │                  │     │                  │
├──────────────────┤     ├──────────────────┤     ├──────────────────┤     ├──────────────────┤
│ Choose:          │     │ Choose:          │     │ Choose:          │     │ See              │
│ Option 4         │     │ Option 10        │     │ Option 9         │     │ Below            │
│                  │     │                  │     │                  │     │                  │
└──────────────────┘     └──────────────────┘     └──────────────────┘     └──────────────────┘
```
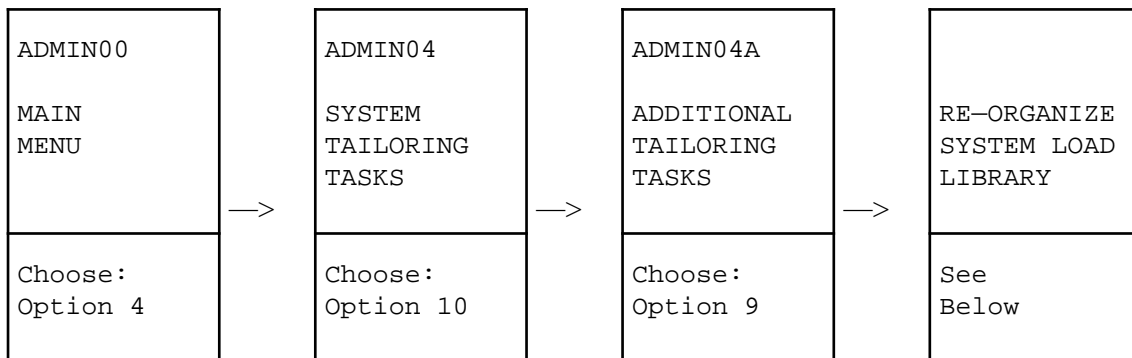
2.   The administrator is prompted to enter one of the following:

   •   a volume name for the temporary copy of the System Load Library (which will become the new
       System Load Library if no errors occur)

   •   EXIT (to terminate the request)

   •   LIST (to display a list of volume names)

3.   If LIST is entered, the next screen (figure 12.11) displays the volume names and associated descriptions
     of each. At the bottom of the list you are prompted to enter:

   •   Volume Name (to specify a dataset).

   •   EXIT (to terminate the request) or

   •   LIST (to display a list of volume names again)

4.   Steps 2 and 3 are repeated in order to obtain the volume name for the file that will contain the dump
     copy of the System Load Library.

Note: If you wish to terminate this function, you must type EXIT at this point.

5.   When the re-organization of the System Load Library has completed, the screen (fig. 12.12) displays the
     completion messages shown. If other messages appear, this means that some error occurred in the re-or-
     ganization and your System Load Library has not been changed.

     If the re-organization was successful, a Batch job is sent to the system which deletes the old system load
     library from disk. This batch job will not run until it is explicitly released.

     ===> Press **ENTER** key to exit.

   Note: You should re-IPL your MUSIC/SP system at this point, before allowing users to access it. See
             the section "Starting MUSIC/SP" for instructions on re-IPLing MUSIC/SP.

6.   After running for several days with the new system load library, you can delete the old load library.
     Delete the old load library by releasing the batch job. To release the batch job enter the following
     commands from the MUSIC/SP console:

     ===> **/CP SPOOL** 00C CLASS F

     After that job completes, enter:

===> **/CP SPOOL** CLASS A

```
No Users should be on the system when attempting to reorganize
the System Load Library.

Enter the name of the volume you wish to use to contain the
temporary copy of the System Load Library.  Or enter LIST
to display a list of volume names or EXIT to terminate
this function.

Enter -- LIST | EXIT | volume name --?
?
list
Volume - MUSICX
Volume - MUSIC1
Volume - MUSIC2


Enter -- LIST | EXIT | volume name --?
?
MUSIC2


------T---------------------------------------------------------


                                                        Reading
```

Figure 12.11 - Volume List Displayed, Volume MUSIC2 Selected

```
The System Load Library has been reorganized.  Please
Re-IPL the system before allowing users access to the system.

A batch job is being sent to the system which will delete
the SYS1.MUSIC.OOLOADLB dataset from the MUSICX volume.
The job WILL NOT run until you explicitly release it.  After
you have been running with the NEW dataset for several days,
you can then delete the old and unused dataset.  To release
this job, issue the command "/CP SPOOL 00C CLASS F" (if under
VM), or "/RDR 5" (if non-VM) from the operator console.
After the job completes, you MUST issue the following command.
"/CP SPOOL 00C CLASS A" (if under VM) or "/RDR 1" (if non-VM)
2 records submitted



------T---------------------------------------------------------


                                                        More...
```

Figure 12.12 - Completion of System Load Library Re-Organization

Chapter 13. Performing System Management

Configuring the MAIL facility

The MUSIC/SP Mail facility allows users to exchange electronic mail with other users on the same MUSIC system and on other systems (both MUSIC and non-MUSIC) connected via RSCS. For more detailed information about electronic mail, see the *MUSIC/SP Mail and Conferencing Guide*. The MAIL facility must be configure if the MAIL program is to be used by your users. The configuration program allows you to set up the MAIL facility to communicate with systems outside of MUSIC.

If MAIL is to be used only internally, within a MUSIC system, the configuration process is still required to set up the RDMAILER BTRM to handle recurring, postdated, and forwarded mail, but you can ignore the information about external mail, VM, RSCS, and mailers.

To configure the MAIL facility, the administrator would:

1. Choose the following panels

```
 ADMIN00                ADMIN04                ADMIN04B

 MAIN                   SYSTEM                 MAIL                   MAIL
 MENU                   TAILORING              FACILITY               CONFIG
                        TASKS                  TASKS                  PROGRAM
              —>                    —>                     —>
 Choose:                Choose:                Choose:                See
 Option 4               Option 5               Option 1               Below
```
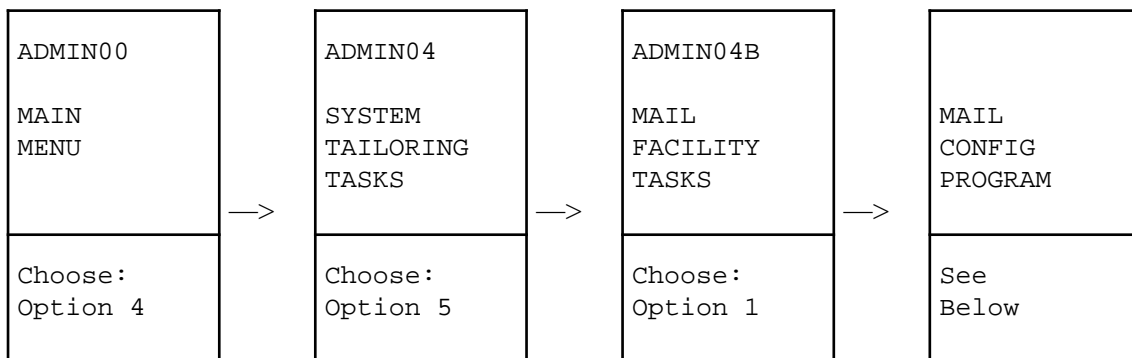
2. The administrator is next presented with the "Mail Configurator Program Main Menu". The administrator should choose choose option 1 "Specify Mail Parameters" first and set the parameters according to your site's specifications. Then exit option 1 and enter option 2 "Update the Code Table". Change any values not correct for your installation and press enter to do the update. After this is completed, exit option 2 and enter option 3 "Create Executor Files". Change any values not correct for your site and press enter to create the executor files. After this is completed, exit option 3 and this facility.

    If you have run option 3 to create the executor files, you must restart the BTRMs running VMREADX and RDMAILER to get the newest configuration information. This can be accomplished by issuing the MUSIC console command RESET tcbno, where tcbno is the tcb number running the BTRM. Another way of resetting the BTRMS is to reIPL MUSIC.

    The MAIL CONFIG program is documented in the *MUSIC/SP Administrator's Reference*.

Maintaining Mail Authorization Table

The MUSIC/SP Mail Facility allows users to exchange electronic mail (memos) with other users on the same MUSIC system and on other systems (both MUSIC and non-MUSIC) connected via RSCS. For more detailed information about electronic mail, see the *MUSIC/SP Mail and Conferencing Guide*. An

authorization table controls which users can send mail and to whom they can send, and defines an expiry date and a limit to the number of mail items presented for viewing for specific users, groups of users, or type of users. These two controls are separate records types and are presented and treated separately. This authorization table can be displayed and or modified by:

1.   Choosing the following panels:

```
┌──────────────────┐     ┌──────────────────┐     ┌──────────────────┐     ┌──────────────────┐
│ ADMIN00          │     │ ADMIN04          │     │ ADMIN04B         │     │                  │
│                  │     │                  │     │                  │     │                  │
│ MAIN             │     │ SYSTEM           │     │ MAIL             │     │ MAIL             │
│ MENU             │     │ TAILORING        │     │ FACILITY         │     │ AUTH.            │
│                  │     │ TASKS            │     │ TASKS            │     │ TABLE            │
│              ──> │     │              ──> │     │              ──> │     │                  │
├──────────────────┤     ├──────────────────┤     ├──────────────────┤     ├──────────────────┤
│ Choose:          │     │ Choose:          │     │ Choose:          │     │ See              │
│ Option 4         │     │ Option 5         │     │ Option 2         │     │ Below            │
└──────────────────┘     └──────────────────┘     └──────────────────┘     └──────────────────┘
```
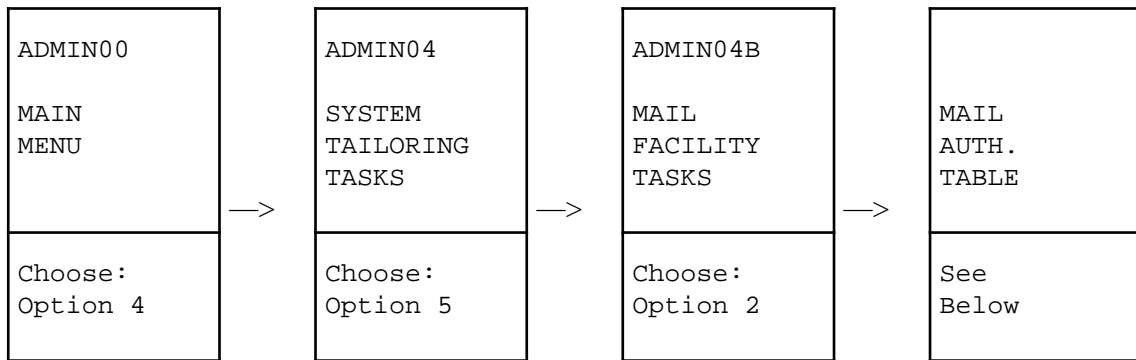
2.   The administrator is next presented with the Mail Authorization table. Up to two entries from the table are displayed at a time, provided for their update. To view other entries use the function keys at the bottom of the screen for scrolling. See figure 13.1.

```
  ------------------------- Mail  Authorization ----------------------

    Authorization Table    At beginning of table for part 1

    Sender ID: *TOP
Receiver ID:
   System ID:
   Domain ID:

NEW entry

    Sender ID:
Receiver ID:
   System ID:
   Domain ID:

    Sender ID: *
Receiver ID: *
   System ID: *ANY
   Domain ID: *


  ============================================================================
  1-Help 3-End 4-Part 2  7-Up 8-Dn  10-Edit file  12-Can  ENTER-Accept inp
```

Figure 13.1 - Mail Authorization Panel

3.   To DELETE an entry blank out all the fields.

4.   To ADD a new entry to part 1, fill in the fields on the Add New Entry line.

   •   SENDER ID, defines the ID of the user who is sending the mail.

- RECEIVER ID, defines the ID of the userid who will receive the mail.

- SYSTEM ID, defines the system name specified in the parentheses in the TO field when mail is sent.

- DOMAIN NAME, defines the name that is used to access your system from the electronic mail network. This name must be one of MUSNOD or ALIAS1 to ALIAS4 that was specified for MAIL and RDMAILER. (An "*" or a blank defaults to MUSNOD.)

- For more information on input fields view the help from F1 Key.

To ADD a new entry to part 2, fill in the fields on the Add New Entry line.

- MARKER, defines a type 2 record. This field must be a closing parenthesis ")".

- SPEC, defines the specification for this entry. This field can define a userid or userids, or a type of users.

- PERIOD, defines the expiry date for the specification.

- ITEMS, defines the number of mail items which will be presented to a user for viewing even though there are more items in the mailbox.

- For more information on input fields view the help from F1 Key.

A new item will be inserted in the table between the two items displayed. See figure 13.2. Here all student userids beginning with AB are granted authorization to send electronic mail to the instructor userid AB00.

```
------------------------ Mail  Authorization ------------------------

  Authorization Table    At beginning of table for part 1


  Sender ID: *TOP
Receiver ID:
  System ID:
  Domain ID:


NEW entry


  Sender ID: AB??
Receiver ID: AB00
  System ID: *LOCAL
  Domain ID: *


  Sender ID: *
Receiver ID: *
  System ID: *ANY
  Domain ID: *




====================================================================
1-Help 3-End 4-Part 2  7-Up 8-Dn  10-Edit file  12-Can  ENTER-Accept inp
```

Figure 13.2 - Mail Authorization Panel With New Item

5. Press F3 when you have completed entering all the changes to the Mail Authorization Table.

6. Pressing F10 key will make any update to the file that you have specified and will return you to the EDITOR (exit from the editor macro). Proceed with normal editor commands at this point.

7. Pressing F12 will terminate the facility. No changes will be made to the file.

8. Press F4 to toggle between the two parts or record types. Part 1, record type one, defines the controls for which users can send mail and to whom they can send. Part 2, record type two, defines the controls for the expiry date and a limit to the number of mail items presented for viewing for specific users, groups of users, or type of users. The parts are treated separately, but all changes to both parts made up until pressing F3 are saved.

Maintaining Printer Routing Table

The printer routing table must be set up to provide a table of valid printer location names (route names). The ADMIN facility can be used to set a default printer name for terminals in a particular terminal room or building. When a user submits a job, output is automatically returned to the location associated with the terminal from which the job was submitted. Printer location names which are not associated with particular terminals must also be included in their list with a dummy address range (X'FFFF'=X'FFFF') if they are to be recognized as valid by the ROUTE subroutine.

To access the printer routing table, the administrator would:

1. Choose the following panels:

```
ADMIN00              ADMIN04

MAIN                 SYSTEM           DISP./UPDATE
MENU                 TAILORING        PRINTER RTG.
                     TASKS            TABLE

        ——>                  ——>

Choose:              Choose:          See
Option 4             Option 7         Below
```
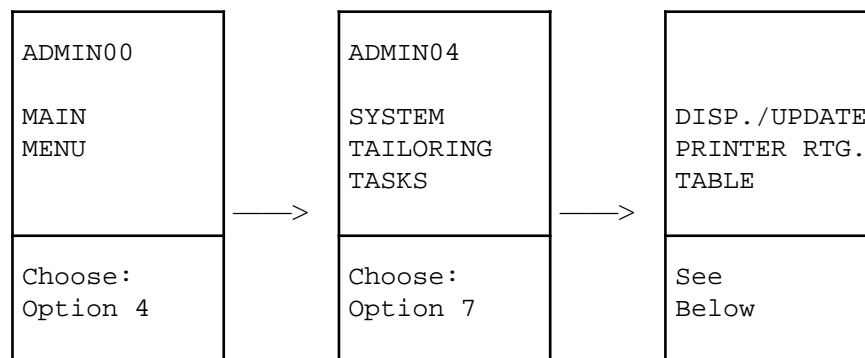
2. After selecting option 7 and pressing ENTER, Printer Routing Table will display the current printer names, see figure 13.3.

3. To delete a printer entry, page down (F8) to the appropriate entry and press F6 (Delete entry).

4. To add a new entry, press F10 (Add new entry). A new entry screen will appear, similar to figure 13.3, that will have empty fields for you to fill in.

```
---------------------- Printer Routing Table ------------------------


                    *** Entry for Default Route Name ***
     Route name: SYSTEM                                  Entry 1 of 6

           Type: SYSTEM     (SYSTEM, MUSIC, VM, or DUMMY)


       VM class: A
VM spool userid:
  VM forms name:


      Tag: SYSPRT                       (applies to types VM and MUSIC)
                                        (for type MUSIC, can be PC.LPTn)


   Low address (hex):        (optional)
  High address (hex):        (optional)
   Authorized userid:                   (optional)


=====================================================================
PF keys: F1-Help    F3-End & apply update  F12-Cancel   ENTER-Accept input
         F4-Top     F5-Bottom        F7-Previous entry       F8-Next entry
         F6-Delete entry             F10-Add new entry       F11-Undelete
```

Figure 13.3 - Printer Routing Table

- ROUTE NAME, is the installation defined name for a particular printer. The name is a 1 to 8 character name. Valid characters are: A to Z, 0 to 9, and $ # @.

- TYPE, defines the type of the route (location) name. Possible choices are SYSTEM, VM, DUMMY, and MUSIC.

- VM class - When output is spooled to VM, for types SYSTEM and VM, this gives the VM class to be used. It is a single letter or digit. If you do not fill in a class, A is assumed.

- VM spool userid - For type VM, this gives the name of the virtual machine to which output is to be spooled. It is a 1 to 8-character name. If you do not fill it in, RSCS is assumed for type VM.

- VM forms name - Optional VM forms name to be assigned to the output, for type SYSTEM or VM. It is a 1 to 8-character name, which tells the operator what kind of paper or special setup to use when the output is printed.

- TAG, is a 1 to 24 character TAG text, used with the VM ID field. Default is Location Name when TYPE=VM, otherwise BLANKS.

- FORMS, is a 1 to 8 character VM forms name. Default is BLANKS.

- CLASS, is a one character VM spool class associated with this location name.

- LOW ADDRESS, defines the beginning real address associated with the printer location name. If no particular terminals are associated with the printer location name, specify the address as FFFF.

- HIGH ADDRESS, defines the ending real address associated with the printer location name. This address can also be set to FFFF.

- AUTHORIZED USERID, defines the user ID that is authorized to run the AUTOPR program for a specific printer. The default ID is $MON. This field is generally left blank.

- For more information on input fields view the help from F1 Key.

5. Press F3 when you have completed entering all the changes to the printer routing table.

- Once F3 has been entered the system will prompt the administrator to also update the auxiliary printer control file and help files.

- Any changes made to the control files will take effect AFTER the next IPL of the system.

6. Pressing F10 key will make any update to the file that you have specified and will return you to the EDITOR (exit from the editor macro). Proceed with normal editor commands at this point.

7. Pressing F12 will terminate the facility. No changes will be made to the file.

Displaying/Editing Administrator Files

The administrator can access all their files by:

1. Choosing the following panels:

```
 ADMIN00

 MAIN
 MENU
           ——>
 Choose:
 Option 6
```

```
 DISPLAY
 FILENAMES

 See
 Below
```
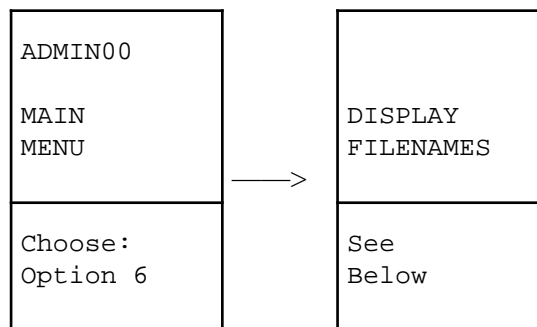
The FLIB facility provides a full screen display of your files similar to the Library Management function of the Full Screen Interface (FSI). In previous releases of the system, FLIB used a different screen format than FSI. If you prefer the old FLIB format you can use the XLIB program instead. New installations should use FSI since that is what your users will be using.

```
-------------------- LIBRARY MANAGEMENT SCREEN ----------------------
Command ==> _
                                                        Files: 9
Current Directory ==>
Cmd/Opt  Filename
----------------------------------------------------------------------
_____  @ADMIN.O
_____  @ADMIN.STACK.0015
_____  @ADMIN.STACK.0016
_____  @ADMIN.TROUTE
_____  @ELOG.000
_____  @GNJOB.1
_____  ADMIN.CATALOG.LST
_____  ADMIN.ROUTE.LST
_____  UPDATE.JOB




--------------------------------------------------------------10:20:17
Options: E:Edit B:Browse X:Execute C:Copy R:Rename D:Delete 11:File Info
PF-Keys: 1:Help 3:Exit   4:Col Fl  7:Up   8:Down   9:Locate 10:Refresh
```

Figure 13.4 - Sample of Library Management Screen

Displaying/Updating System Catalog

The system catalog contains information on the location of required system datasets, members that are loaded into the FLPA and PLPA, and commands that are issued to the VM system at IPL of MUSIC environment.

To display and/or update the system catalog:

1. Choose the following panels:

```
+----------------+       +----------------+       +----------------+       +----------------+
| ADMIN00        |       | ADMIN04        |       | ADMIN04A       |       |                |
|                |       |                |       |                |       |                |
| MAIN           |       | SYSTEM         |       | ADDITIONAL     |       | DISP./UPDATE   |
| MENU           |       | TAILORING      |       | TAILORING      |       | THE SYSTEM     |
|                |       | TASKS          |       | TASKS          |       | CATALOG        |
|                |  —>   |                |  —>   |                |  —>   |                |
|                |       |                |       |                |       |                |
+----------------+       +----------------+       +----------------+       +----------------+
| Choose:        |       | Choose:        |       | Choose:        |       | See            |
| Option 4       |       | Option 10      |       | Option 7       |       | Below          |
|                |       |                |       |                |       |                |
+----------------+       +----------------+       +----------------+       +----------------+
```
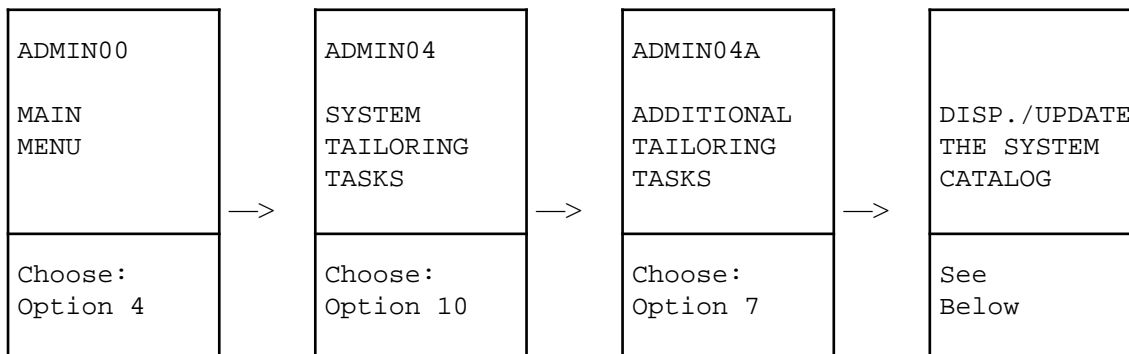
2. Next, the $GEN:SYSCAT file is displayed (see figure 13.5); here the administrator can:

    •   View the current system catalog or

    •   Edit the catalog file using the specified function keys displayed on the bottom of the screen.

See "Appendix B. Program Function Keys" for an explanation of function keys.

To view the entire $GEN:SYSCAT file, you must browse over a number of input screens. Figure 13.5 shows that the optional product for FORTRAN is currently **not** installed. When the optional product is installed, the asterisk (*) in column one is **automatically** changed to R by the initialization procedures.

3. After the appropriate changes are made, the administrator enters:

    ===> **F12** (to file and save the changes)

4. If no changes have been made, enter:

    ===> **F3** (to quit and exit)

5. The administrator will be prompted as to whether the new catalog should be placed online; enter either:

    ===> **Y or N**, default is Y (for yes)

6. ===> Press **ENTER** key to exit.

    Note: The updated catalog will be used at the next IPL of the system.

```
$000:$GEN:SYSCAT                        L 80   W 1 72     Rec 62/143
   * FOLLOWING NON-RENT MEMBERS SHOULD BE IN THE FLPA (FOR PERFORMANCE),
   * UNLESS MAIN STORAGE IS LIMITED.  TO OMIT A MEMBER, SET COL.1 TO "*"
   * TO INCLUDE THE MEMBER IN LPA, SET COL.1 TO "R":
   RESPGM31 $REX     FLPA               REXX INTERFACE
   RESPGM32 $XMON    FLPA               INITIAL MODULE FOR /LOAD XMON
   RESPGM33 VIEW     FLPA               INITIAL MODULE FOR /LOAD VIEW
   RESPGM34 EXEC     FLPA               INITIAL MODULE FOR /LOAD EXEC
   RESPGM35 LKEDEXEC FLPA               PROGRAM EXECUTION FOR /LOAD LKED
   RESPGM36 $LST     FLPA               /LIST PROCESSOR
   RESPGM37 IBCOM    FLPA               MUSIC/FORTRAN INTERFACE
   RESPGM38 CMPMON   FLPA               MONITOR FOR COMPILERS
   RESPGM39 RXSYSFN  FLPA               REXX FUNCTION PACKAGE
   * MISCELLANEOUS MEMBERS:
   * IF YOU HAVE EXTRA MEMORY, YOU MAY IMPROVE PERFORMANCE BY PUTTING
   * TMENU AND/OR NMAIL IN THE FLPA (CHANGE * TO R)
   *ESPGM51 TMENU    FLPA               TMENU PROGRAM (USED BY TODO, ETC.)
   *ESPGM52 NMAIL    FLPA               NONRENT PART OF MAIL
   RESPGM53 DICT1    PLPA 340000    SPELL-CHECK DICTIONARY (LARGE)
    ---+-T--1---+----2----+----3---+----4----+----5---+----6----+----7--
Command:
                                                          Reading
Default PFs: 1:Help   2:Split   3:Quit   4:Mark    5:Center 6:Del Line
  *EDIT*      7:Uppage 8:Downpage 9:Locate 10:Ins ln 11:Right 12:Command
```
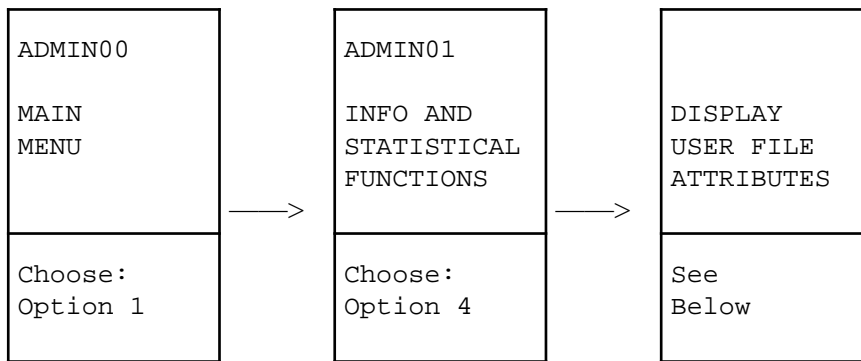
Figure 13.5 - Section of System Catalog File

More information is provided under the topic "System Catalog" in the *MUSIC/SP Administrator's Reference*.

Updating System Subroutine Library

The System subroutine library consists of subroutines that are automatically available to programs written in FORTRAN, COBOL, Assembler, PL/I, and other languages.

To build the subroutine library:

1. Choose the following panels:

```
┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
│ ADMIN00         │        │ ADMIN04         │        │ ADMIN04A        │        │                 │
│                 │        │                 │        │                 │        │                 │
│ MAIN            │        │ SYSTEM          │        │ ADDITIONAL      │        │ UPDATE THE      │
│ MENU            │        │ TAILORING       │        │ TAILORING       │        │ SUBROUTINE      │
│                 │        │ TASKS           │        │ TASKS           │        │ LIBRARY         │
│                 │  —>    │                 │  —>    │                 │  —>    │                 │
│                 │        │                 │        │                 │        │                 │
├─────────────────┤        ├─────────────────┤        ├─────────────────┤        ├─────────────────┤
│ Choose:         │        │ Choose:         │        │ Choose:         │        │ See             │
│ Option 4        │        │ Option 10       │        │ Option 6        │        │ Below           │
└─────────────────┘        └─────────────────┘        └─────────────────┘        └─────────────────┘
```
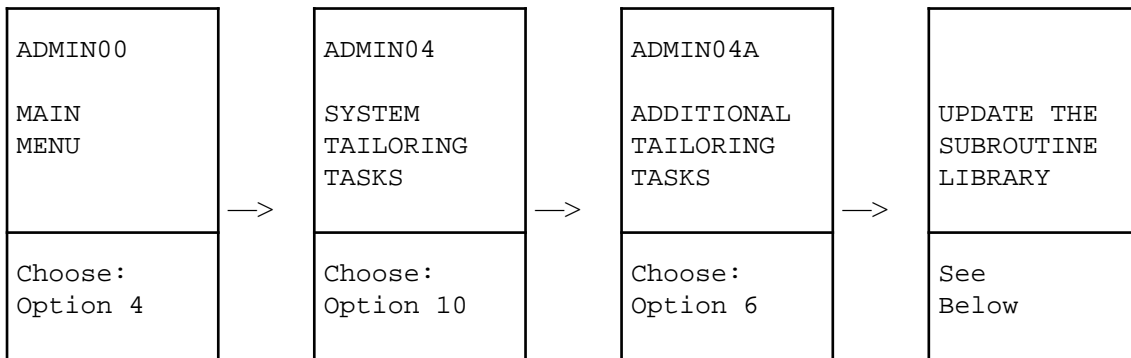
2. The next screen (see figure 13.6) provides the option to

    *   Recreate either the Music User Subroutine or the Compiler Subroutine by entering either **1** or **2,** respectively:

        ===> **2**, as in example shown

    *   An edit session is started for the file $SUB:CREATE.OS. You can insert additional /INCLUDE statements if needed. Type "FILE" or press F3 to end the session.

    *   Then the administrator may choose to proceed and update the System Subroutine Library by entering:

        ===> **Y**

    *   Or not to proceed by entering:

        ===> **N**

    Note: The updating of the subroutine library takes a few minutes to complete.

    When the completion message is displayed, the update has taken effect.

3. ===> Press **ENTER** key, to return to the ADMIN04A screen.

```
Please select the option corresponding to the Subroutine
Library that will be re-created.

1 - Music User and System Subroutines (*MUS)
2 - Compiler Subroutine (Fortran, PLI, RPG,...) (*OS)
3 - Local Site Subroutine Package Library (*EXT)

Enter word EXIT to terminate or (1,2,3)
?
2

(Add /INCLUDE statements to $SUB:CREATE.OS if needed, then FILE)

The Subroutine Library Creation will take several minutes
to complete.  During this time, the Library will be
incomplete.  Do you wish to continue?   --- (Yes) / No ---
?
Y

Starting Subroutine Library Creation

Subroutine Library Edit Complete

------T----------------------------------------------------------------T
      Press Enter to Continue....
                                                            More...
```

Figure 13.6 - System Subroutine Library Update

Displaying Information and Statistical Functions

ADMIN allows you to browse current information and statistical functions by:

Choosing the following panels:

```
ADMIN00              ADMIN01

MAIN                 INFO AND
MENU                 STATISTICAL
                     FUNCTIONS

           ------>

Choose:              See
Option 1             Below
```
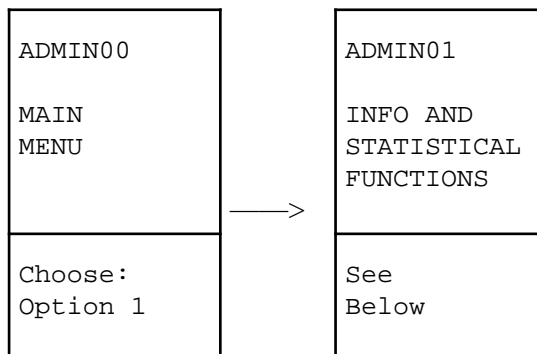
```
-------------------- Statistical / Information Tasks -----------ADMIN01


SELECT OPTION ====> 1

                                              Time:   3:00 pm
 1  Display Save Library utilization
 2  Display active (signed on) users          1988    NOVEMBER     1988
 3  Display VTOC  -volume(s)-
 4  Display file attributes -filename(s)-    S   M   T   W   T   F   S
 5  Display terminal buffer utilization                              1
 6  Display system usage counters            2   3   4   5   6   7   8
 7  Display DASD (disk) usage statistics     9  10  11  12  13  14  15
 8  Display Link Pack Area (LPA) members    16  17  18  19  20  21  22
 9  Display Load Library usage counts       23  24  25  26  27  28  29
10  Display Load Library directory <pattern> 30
11  Display Save Library index information       Day of year:  318
12  Display system enqueue table < pattern >
13  Display system status
14  Display memory map
 H  Description and function usage




======================================================================
F1:Help on Menu F2:Todays Reminders F3:Exit F6:Mail Waiting F12:Retrieve
```

Figure 13.7 - Information and Statistical Functions

The facilities displayed on the ADMIN01 screen (see figure 13.7) include active terminal users, disk VTOC (volume table of contents) information, system statistics, etc. There is no full-screen input requested by these facilities. All input parameters are obtained from the menu option parameter line.

Two functions require user input:

• Listing VTOC and

• Displaying detailed information on a user file.

No input is required for the other functions. The Browse facility is used to display all information. The administrator can exit by entering:

===> **F3**

Displaying Save Library Utilization

To display the current Save Library utilization information:

1. Choose the following panels:

```
┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
│ ADMIN00         │        │ ADMIN01         │        │                 │
│                 │        │                 │        │ DISPLAY         │
│ MAIN            │        │ INFO AND        │        │ SAVE LIBRARY    │
│ MENU            │        │ STATISTICAL     │        │ UTILIZATION     │
│                 │  ───>  │ FUNCTIONS       │  ───>  │                 │
│                 │        │                 │        │                 │
├─────────────────┤        ├─────────────────┤        ├─────────────────┤
│ Choose:         │        │ Choose:         │        │ See             │
│ Option 1        │        │ Option 1        │        │ Below           │
└─────────────────┘        └─────────────────┘        └─────────────────┘
```
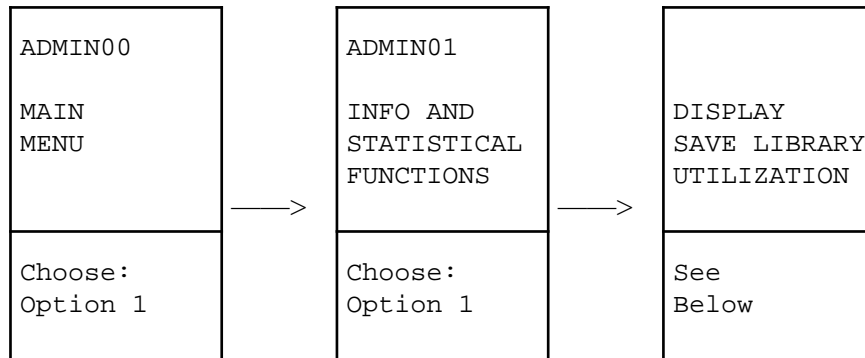
2.   The Save Library utilization is displayed automatically.

      As illustrated in figure 13.8, the administrator can determine the number of libraries and the size of free
      space and extents associated with each.

      The administrator can scroll this file if it extends over one page and can use the function keys displayed
      at the bottom of the screen.

3.   To exit, press:

      ===> **F3**

```
$000:@ADMIN.O                              L 80   W 2 73       Rec 1/22
      *Top of file
-->      LIBSPACE UTILITY
         ----------------
      SAVE LIBRARY SPACE STATUS     MON APR 05, 1993  (1993/ 95)    13:54
      NUMBER OF LIBS=     6
                          TOTAL     SUM OF
                    MAP   FREE    LARGEST 5   FRAG.    LARGEST 5
      LIB# DEB# FLAG LEN  SPACE   FREE EXTS   INDEX    FREE EXTENTS


        1    63   00  516     0K        0K    0.0
        2    64   00  516     0K        0K    0.0
        3    65   00  516  3972K     3968K    0.0      3940    18    4    4
        4    66   00  516     0K        0K    0.0
        5    67   00  516     2K        2K    0.0
        6    68   00 2544 40556K    40556K    0.0     40556
      LIBS WITH HIGHEST FRAGMENTATION INDEX:


        3   TOTAL FREE = 3972K   FRAG. INDEX = 0.0
      ---+--T-1---+----2----+----3----+---4----+----5----+----6----+---7--
Command:
                                                              Reading
Default PFs: 1:Help    2:Print    3:Quit    4:Top    5:Center  6:Bottom
 *BROWSE*     7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```
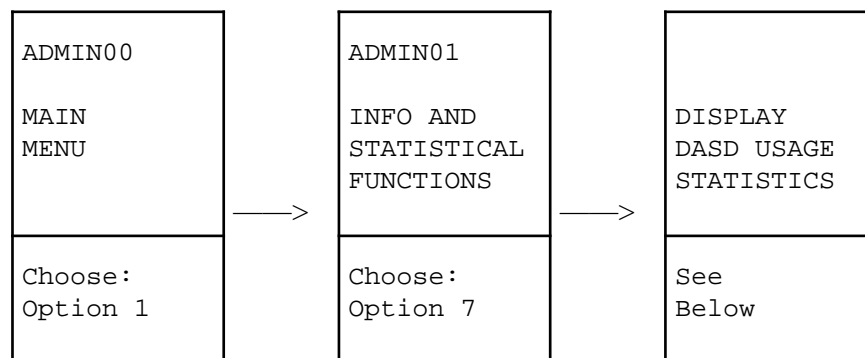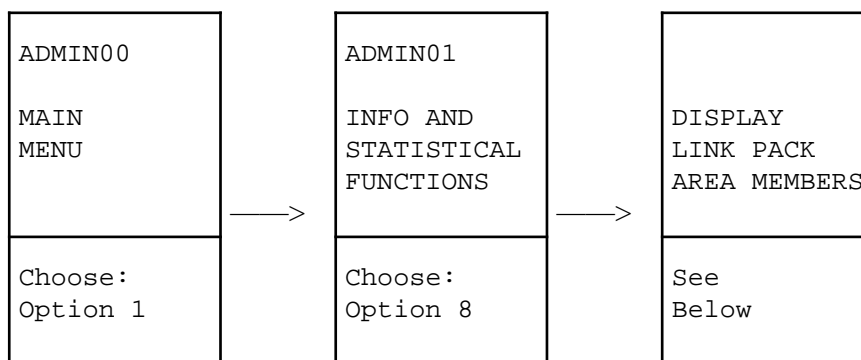
Figure 13.8 - Displaying System Library Utilization

Displaying Active Users

This facility displays active users. A display of the users who are currently signed on to the system is shown.

To display these userids:

1. Choose the following panels:

```
┌─────────────────┐     ┌─────────────────┐     ┌─────────────────┐
│ ADMIN00         │     │ ADMIN01         │     │                 │
│                 │     │                 │     │ DISPLAY         │
│ MAIN            │     │ INFO AND        │     │ ACTIVE          │
│ MENU            │     │ STATISTICAL     │     │ USERS           │
│                 │     │ FUNCTIONS       │     │                 │
│                 │──>  │                 │──>  │                 │
├─────────────────┤     ├─────────────────┤     ├─────────────────┤
│ Choose:         │     │ Choose:         │     │ See             │
│ Option 1        │     │ Option 2        │     │ Below           │
└─────────────────┘     └─────────────────┘     └─────────────────┘
```
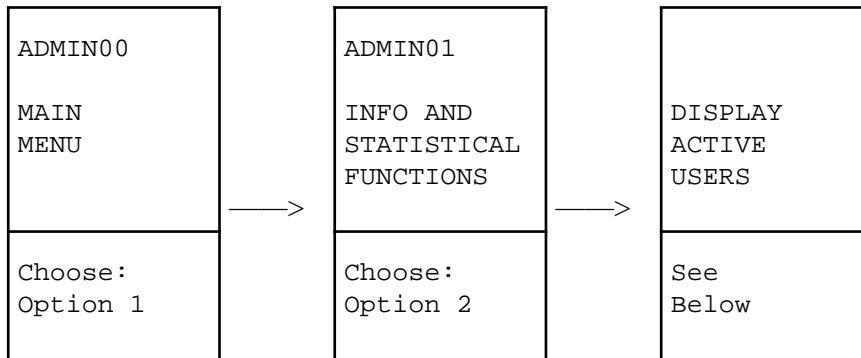
2. A list of userids appears; see figure 13.9. The editing facilities are available to browse the file.

3. To exit, press:

   ===> **F3**

```
$000:@ADMIN.O                          L 80    W 2 73      Rec 1/11
   *Top of file
-> WHOSON AT 15:33  MON APR 05, 1993     MUSIC LOADED AT  9:42
   TOTAL ACTIVE =   7     CC=  13  CF=  10  #=   0  PWG=   0   SCR=     0

   SEQ TCB# PORT  REAL USERID
     1.   0 000 R=0000                    ON FOR 932M TLAT  268M TCB AT 860
     2.   1 010 R=0000 $MON010 ON FOR 348M TLAT -507M TCB AT 86A258 BTRM
     3.   2 011 R=0000 $MON011 ON FOR 348M TLAT   -1M TCB AT 86A388 BTRM
     4.   3 012 R=0000 $MON012 ON FOR 348M TLAT  348M TCB AT 86A4B8 BTRM
     5.   4 013 R=0000 $MON013 ON FOR 348M TLAT    0M TCB AT 86A5E8 BTRM
     6.   5 014 R=0000 $MON014 ON FOR 348M TLAT   -3M TCB AT 86A718 BTRM
     7.   6 015 R=0000 $MON015 ON FOR 348M TLAT    0M TCB AT 86A848 BTRM
    *End of file




    ---+--T-1---+----2----+----3----+---4----+----5----+----6----+---7--
Command:
                                                          Reading

Default PFs: 1:Help    2:Print   3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```
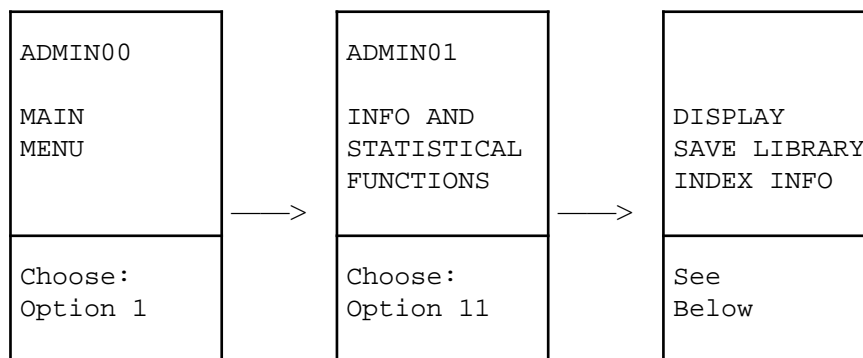
Figure 13.9 - Display of Current Active Terminal Users

The $000 in figure 13.9 is for the Administrator's ID and the $MON 010, 011 and 012 userids are for the

disconnected service users. These are automatically signed-on when MUSIC is IPLed.

More information is provided under "WHOACT, WHOALL, WHOSON: List Terminal Users" in the *MUSIC/SP Administrator's Reference*.

Displaying VTOC

The Volume Table of Contents displays the datasets contained on a specific volume along with detailed information about each dataset such as:

- The START and END location on the volume

- The number of BLOCKS allocated

- The number of EXTENTS used

- The BLOCKSIZE

In addition the location of and free extents, their size, and the total free space on the disk are also listed. To list VTOC:

1. Choose the following panels:

```
┌─────────────────┐         ┌─────────────────┐         ┌─────────────────┐
│ ADMIN00         │         │ ADMIN01         │         │                 │
│                 │         │                 │         │ DISPLAY         │
│ MAIN            │         │ INFO AND        │         │ VTOC            │
│ MENU            │         │ STATISTICAL     │         │ VOLUMES         │
│                 │  ──────>│ FUNCTIONS       │  ──────>│                 │
│                 │         │                 │         │                 │
├─────────────────┤         ├─────────────────┤         ├─────────────────┤
│ Choose:         │         │ Choose:         │         │ See             │
│ Option 1        │         │ Option 3        │         │ Below           │
│                 │         │                 │         │                 │
└─────────────────┘         └─────────────────┘         └─────────────────┘
```
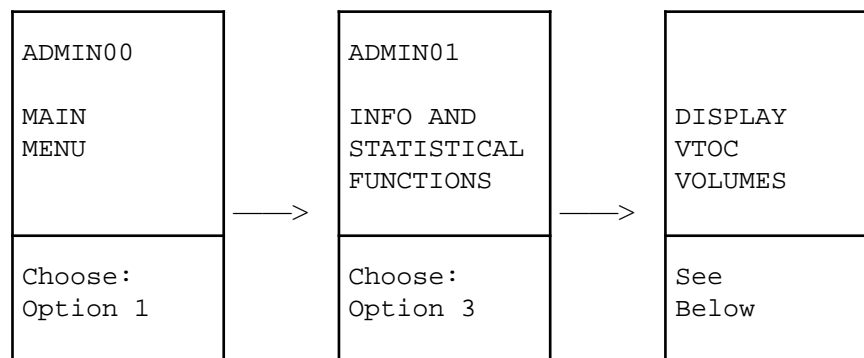
   If the specific volume(s) names are known, you may enter them along with the option number 3. Each volume name must be separated by a blank space.

   ===> **3** MUSIC1 MUSICX

2. If only option number 3 is specified, the next screen (figure 13.10) prompts you to enter:

   - The volume name

   - LIST (to display the list of current volumes)

   - EXIT (to terminate this request).

```
 Enter the name(s) of the VOLUMEs you wish the VTOC
 displayed for, or "EXIT" to terminate this request.
 Separate multiple volume names with a blank.

 To display a list of volume names, enter "LIST".
?
list
volume 1 - MUSICX
volume 2 - MUSIC1
volume 3 - MUSICA

 Enter the name(s) of the VOLUMEs you wish the VTOC
 displayed for, or "EXIT" to terminate this request.
 Separate multiple volume names with a blank.

 To display a list of volume names, enter "LIST".
?
musicx



------T----------------------------------------------------------------T

                                                            Working
```

Figure 13.10 - Displaying VTOC

3.   Once the appropriate volume name is entered, the Table of Contents is displayed. This table of contents can also be browsed and usually extends over more then one screen (figure 13.11 and figure 13.12).

4.   To exit, press:

    ===> **F3**

```
$000:@ADMIN.O                               L 110    W 2 73      Rec 1/37
--> DEFAULTS
    VOLUME = SYSRES
    TYPE = 1   READ DATA
    DISK UCB =  0
    CC =   0,   0     HH = 0,  0     R =  1,  1     LEN =   16
       VOLUME= MUSICX


          START        END    BLOCKS   XTNT   BLKSIZ      DATA SET NAME
              2        287       286     1      140      VTOC
            288        319        32     1     6400      SYS1.MUSIC.HPOOL
            320        351        32     1       80      SYS1.MUSIC.HVLIST
            352        383        32     1     6400      SYS1.MUSIC.DSLIST
            384        511       128     1      446      SYS1.MUSIC.GENLOAD
            512       3711      3200     1      512      SYS1.MUSIC.BATCHIN
           3712       6719      3008     1      512      SYS1.MUSIC.BATCHOT
           6720       7487       768     1      512      SYS1.MUSIC.NUCLEUS
     ---+--T-1----+---2----+----3----+----4----+---5----+----6---+----7--
Command:
                                                           Reading

Default PFs: 1:Help     2:Print     3:Quit     4:Top    5:Center   6:Bottom
 *BROWSE*     7:Uppage   8:Downpage 9:Locate 10:Left 11:Right   12:Command
```

Figure 13.11 - First Screen of MUSICX VTOC Display

```
$000:@ADMIN.O                               L 110    W 2 73      Rec 26/37
           7488       7807       320     1       80      SYS1.MUSIC.CATALOG
           7808      12831      5024     1      512      SYS1.MUSIC.ACCT
          12832      12959       128     1      512      SYS1.MUSIC.SUBINDX
          12960      13567       608     1     2048      SYS1.MUSIC.CODINDX
          13568      20479      6912     1      512      SYS1.MUSIC.UIDX
          20480      22303      1824     1      512      SYS1.MUSIC.SUBMIT
          22304      38303     16000     1     2048      SYS1.MUSIC.LOADLIB
          38304      58431     20128     1      512      SYS1.MUSIC.CODTABL
          58432     106911     48480     1     4096      SYS1.MUSIC.SWAP1
         106912     306911    200000     1      512      SYS1.MUSIC.SCRATCH
         306912     557999    251088     1               FREE SPACE
            TOTAL FREE SPACE -  251088 BLOCKS


    AU REVOIR  --   GOOD BYE


     ---+--T-1---+----2----+----3----+---4----+----5----+----6---+----7--
Command:
                                                           Reading

Default PFs: 1:Help     2:Print     3:Quit     4:Top    5:Center   6:Bottom
 *BROWSE*     7:Uppage   8:Downpage 9:Locate 10:Left 11:Right   12:Command
```
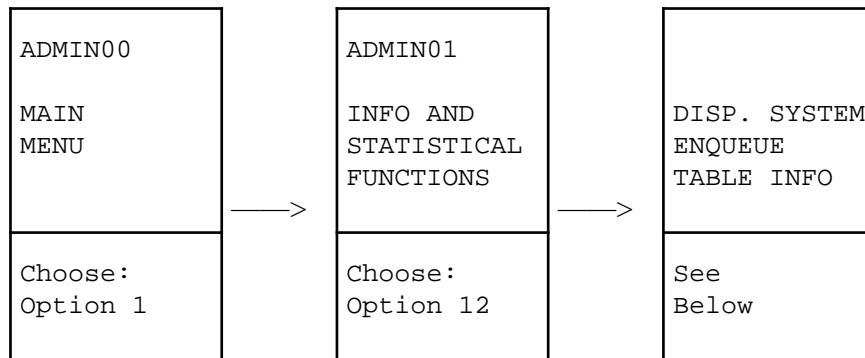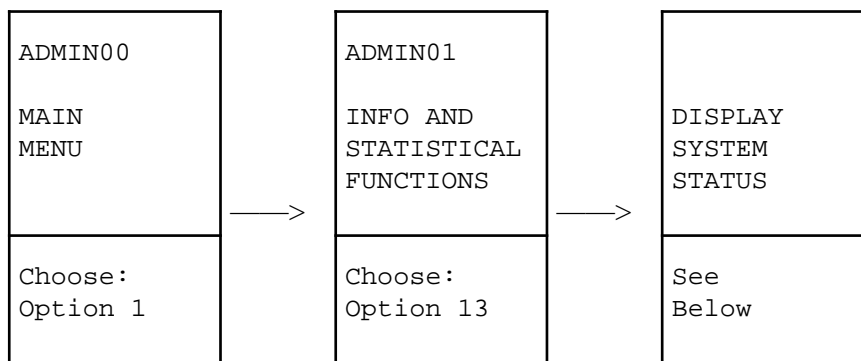
Figure 13.12 - Second Screen of MUSICX VTOC Display

Displaying User File Attributes

The Display User File Attributes facility enables the administrator to retrieve file attribute information for files specified.

To use this facility:

1. Choose the following panels:

```
┌─────────────────┐      ┌─────────────────┐      ┌─────────────────┐
│ ADMIN00         │      │ ADMIN01         │      │                 │
│                 │      │                 │      │                 │
│ MAIN            │      │ INFO AND        │      │ DISPLAY         │
│ MENU            │      │ STATISTICAL     │      │ USER FILE       │
│                 │      │ FUNCTIONS       │      │ ATTRIBUTES      │
│                 │ ───> │                 │ ───> │                 │
├─────────────────┤      ├─────────────────┤      ├─────────────────┤
│ Choose:         │      │ Choose:         │      │ See             │
│ Option 1        │      │ Option 4        │      │ Below           │
│                 │      │                 │      │                 │
└─────────────────┘      └─────────────────┘      └─────────────────┘
```

If the file name(s) are known, you may enter them along with the option number 4. Each file name must be separated by a blank space.

   ===> **4** ARCH REST

2. If only the option 4 is specified, the next screen (figure 13.13) prompts you to enter either:

    • The file name or

    • EXIT, to terminate this request

```
 Enter the name(s) of the FILEs you wish the information
 displayed for, or "EXIT" to terminate this request.
 Separate multiple filenames with a blank.
?
arch




 ------T-------------------------------------------------------------T

                                                           Working
```

Figure 13.13 - Choose to Display File Attributes for ARCH File

3. Once the appropriate file name has been entered, the following attributes are displayed. See figure 13.14.

    • Dates created, last read and written

    • Creator's ID

    • Record length and other space parameters

- Access control indicators

- Backup number.

4. To exit, press:

    ===> **F3**

```
$000:@ADMIN.O                          L 110   W 2 73    Rec 1/9
    *Top of file
--> ENTER FILE NAME
    NAME=$000:ARCH              PRIV
    TAG=
    LRECL =   80     RECFM = 0200 (FC)   ACCESS CONTROL = 00 00 C0 C0
    SPACE (K): PRIMARY =      2     SECONDARY =       0     MAXIMUM =  -1
    LINES =        3    HIGH BLK =     1  (MAX = 3)   EOF DISPL = 69
    BACKUP NUMBER =  0      USAGE COUNT =      0     EXTENTS =  1
    CREATED 16OCT86   LAST OPEN FOR READ 05NOV86   FOR WRITE 16OCT86
    CREATOR: $000000    LAST WRITER: $000000
    *End of file




    ---+--T-1---+----2----+----3----+----4----+---5----+---6----+----7--
Command:
                                                          Reading
Default PFs: 1:Help     2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*     7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```
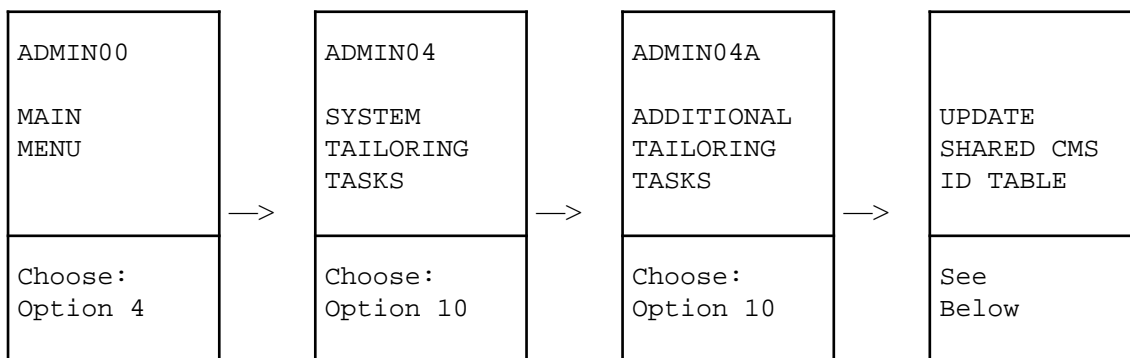
Figure 13.14 - File Attributes Displayed

Displaying Terminal Buffer Utilization

To display the terminal buffer utilization:

1. Choose the following panels:

```
┌─────────────┐         ┌─────────────┐       ┌─────────────┐
│ ADMIN00     │         │ ADMIN01     │       │             │
│             │         │             │       │ DISPLAY     │
│ MAIN        │         │ INFO AND    │       │ TERM. BUFFER│
│ MENU        │         │ STATISTICAL │       │ UTILIZATION │
│             │         │ FUNCTIONS   │       │             │
│             │   ──>   │             │  ──>  │             │
├─────────────┤         ├─────────────┤       ├─────────────┤
│ Choose:     │         │ Choose:     │       │ See         │
│ Option 1    │         │ Option 5    │       │ Below       │
└─────────────┘         └─────────────┘       └─────────────┘
```
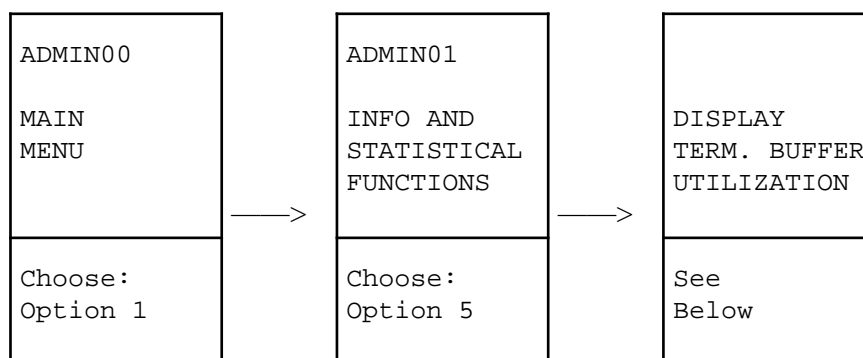
2. The buffer spool information appears next (figure 13.15).

3, To exit:

===> Press ENTER

```
$000:@ADMIN.O                            L 80    W 2 73      Rec 1/7
    *Top of file
--> BPOOL: SYSTEM BUFFER POOL       TUE APR 06, 1993  08:49:18

          NUMBER   =        300
          LENGTH   =        516
          START    =   0088E078
          IN USE   =          0
          MAX USED =         11
       *End of file




     ---+--T-1----+---2----+----3----+----4----+---5----+----6---+----7--
Command:
                                                              Reading
Default PFs: 1:Help     2:Print    3:Quit    4:Top   5:Center  6:Bottom
  *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.15 - Terminal Buffer Display

Displaying System Usage Counters

To display system usage counters:

1. Choose the following panels:

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│ ADMIN00      │      │ ADMIN01      │      │              │
│              │      │              │      │ DISPLAY      │
│ MAIN         │      │ INFO AND     │      │ SYS. USAGE   │
│ MENU         │      │ STATISTICAL  │      │ COUNTERS     │
│              │      │ FUNCTIONS    │      │              │
│              │ ───> │              │ ───> │              │
│              │      │              │      │              │
├──────────────┤      ├──────────────┤      ├──────────────┤
│ Choose:      │      │ Choose:      │      │ See          │
│ Option 1     │      │ Option 6     │      │ Below        │
└──────────────┘      └──────────────┘      └──────────────┘
```
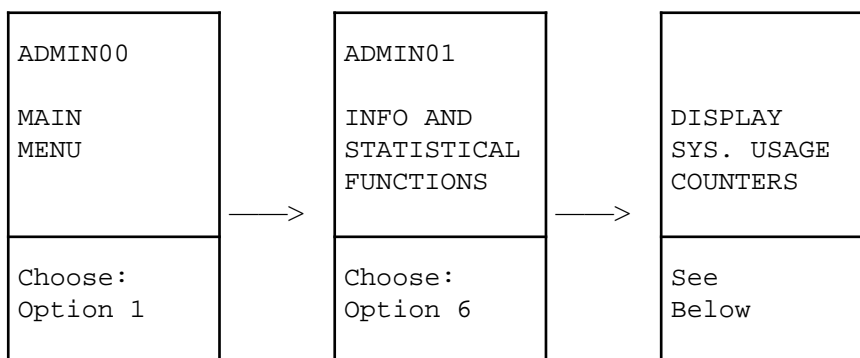
2. Information is displayed for the following (figure 13.16):

    *   Processor counters

    *   Context Editor counters

    *   Utility counter

    *   Swap and Page counters

- Miscellaneous counters.

3. To exit, press:

===> **F3**

```
$000:@ADMIN.O                          L 80     W 2 73     Rec 1/125
-->          SYSTEM COUNTS


    WED NOV 05, 1986      14.11.39
    SYSTEM LOADED AT       9.23.35


       I/O INTRPTS        12889
       SVC INTRPTS        94924


        0   MISCELLANEOUS ................... 0


   * PROCESSORS:


        3   /LOAD LOADER .................. 26
       46   /LOAD ASM ...................... 0
       47   /LOAD COBOL .................... 0
       48   /LOAD LKED ..................... 0



   ---+--T-1----+---2----+----3---+----4----+----5----+---6----+----7--
Command:
                                                          Reading
Default PFs: 1:Help    2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*     7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.16 - First Screen of System Counter Display

Displaying DASD Usage Statistics

To display DASD usage statistics:

1. Choose the following panels:

```
+------------------+      +------------------+      +------------------+
| ADMIN00          |      | ADMIN01          |      |                  |
|                  |      |                  |      | DISPLAY          |
| MAIN             |      | INFO AND         |      | DASD USAGE       |
| MENU             |      | STATISTICAL      |      | STATISTICS       |
|                  |      | FUNCTIONS        |      |                  |
|                  |  --> |                  |  --> |                  |
+------------------+      +------------------+      +------------------+
| Choose:          |      | Choose:          |      | See              |
| Option 1         |      | Option 7         |      | Below            |
+------------------+      +------------------+      +------------------+
```

2. See figure 13.17 for an example of statistics such as: UCB/DEB, ID, volume label, usage count, busy, and queue count being displayed for:

- Datasets

- Cumulative devices

- Channels.

3. To exit, press:

===> **F3**

```
$000:@ADMIN.O                          L 95    W 2 73      Rec 1/101
-->                       IOTIME  --  MUSIC DASD USAGE STATISTICS


   UCB/   ID        VOLUME     USAGE      BUSY       BUSY+WAIT      QUEUE
   DEB              LABEL      COUNT                               COUNT
                             -----------------------------     ------
  DATA SET STATISTICS...

   42   LBIDX     MUSICX     2319     :45.662      :43.502
   43   LB01      MUSIC1     1821     :36.392      :34.803
   44   LB02      MUSIC1     2793    1:02.428     1:00.088
   45   LB03      MUSIC1        4     :00.089      :00.086
   46   LB04      MUSIC1        4     :00.081      :00.077



   ---+--T-1----+----2----+----3----+---4----+----5----+----6---+----7--

  Command:
                                                            Reading
Default PFs: 1:Help    2:Print    3:Quit    4:Top    5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.17 - First Screen of DASD Usage Statistics

Displaying Link Pack Area Members

To display information on Link Pack Area Members:

1. Choose the following panels:

```
ADMIN00                 ADMIN01

MAIN                    INFO AND           DISPLAY
MENU                    STATISTICAL        LINK PACK
                        FUNCTIONS          AREA MEMBERS
          ----->                  ----->

Choose:                 Choose:            See
Option 1                Option 8           Below
```

2. Link pack area member names are displayed along with length, address, and origin parameters as shown

in figure 13.18.

3. To exit, press:

    ===> **F3**

```
$000:@ADMIN.O                            L 80    W 2 73    Rec 1/22
    LINK PACK AREA CONTENTS
           NAME        LENGTH            ADDR    ORIGIN  PLPA FLGS
     1.    $PRE        002058      8.1K  86AE60  001000
     2.    $PST        0018E0      6.2K  86CED8  001000
     3.    EDIT        000400      1.0K  86E7D8  001000
     4.    EDTDSP      000028      0.0K  86EBE8  86EBE8
     5.    $ROUTING    000050      0.1K  86EC10  86EC10
     6.    $CTL        004D08     19.3K  86EC60  86EC60
     7.    EDITOR      00F920     62.3K  873968  873968
     8.    OSTRAP      002988     10.4K  883288  883288
     9.    EXEC        0004D8      1.2K  885C10  001000
    10.    LKEDEXEC    000818      2.0K  886100  004300
    11.    $SIGNON     001D58      7.3K  886950  886950
                    FIXED LPA LENGTH    152.2K
                    PAGABLE LPA LENGTH  844.2K
                    TOTAL LPA LENGTH    996.5K
    ---+--T-1----+---2----+----3----+---4----+----5----+---6----+----7--
Command:
                                                           Reading
Default PFs: 1:Help     2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.18 - Link Pack Area Member Display

Displaying Usage Information for System Load library

To display information on System Load Library:

1. Choose the following panels:

```
┌──────────────┐        ┌──────────────┐        ┌──────────────┐
│ ADMIN00      │        │ ADMIN01      │        │              │
│              │        │              │        │ DISP. USAGE  │
│ MAIN         │        │ INFO AND     │        │ INFO FOR     │
│ MENU         │        │ STATISTICAL  │        │ SYS. LOADLIB │
│              │        │ FUNCTIONS    │        │              │
│              │ ────>  │              │ ────>  │              │
├──────────────┤        ├──────────────┤        ├──────────────┤
│ Choose:      │        │ Choose:      │        │ See          │
│ Option 1     │        │ Option 9     │        │ Below        │
│              │        │              │        │              │
└──────────────┘        └──────────────┘        └──────────────┘
```
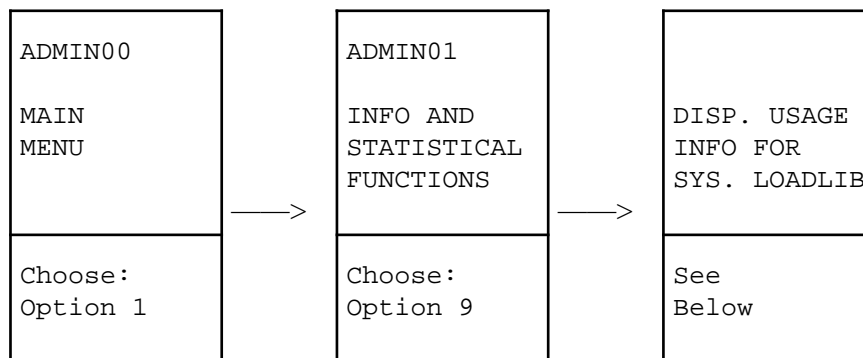
2. System load library names and associated library counts are displayed. See figure 13.19.

3. To exit, press:

===> **F3**

```
$000:@ADMIN.O                             L 80    W 2 73     Rec 1/161
    -- LOAD COUNTS --      WED NOV 05, 1986      14.13.47

    NO. OF RLD READS:                           7
    SYSTEM LOAD LIBRARY COUNTS
    NAME           COUNT
    $CTL           221
    $CTLA            0
    $CTL10           0
    $INP             0
    $LST             0
    $PRE            64
    $PST            64
    $PUR             0
    $REN             0
    $ROUTING        24
    $ROUTOLD         0
    ---+--T-1----+----2----+----3----+----4----+----5----+----6---+----7
Command:
                                                          Reading

Default PFs: 1:Help     2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*     7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.19 - System Load Library Usage Display

Display Member information for System Load library

To display Member information on System Load Library:

1. Choose the following panels:

```
┌─────────────┐       ┌─────────────┐       ┌─────────────┐
│ ADMIN00     │       │ ADMIN01     │       │             │
│             │       │             │       │             │
│ MAIN        │       │ INFO AND    │       │ DISP. MEMBER│
│ MENU        │       │ STATISTICAL │       │ INFO FOR    │
│             │       │ FUNCTIONS   │       │ SYS. LOADLIB│
│             │──────>│             │──────>│             │
├─────────────┤       ├─────────────┤       ├─────────────┤
│ Choose:     │       │ Choose:     │       │ See         │
│ Option 1    │       │ Option 10   │       │ Below       │
└─────────────┘       └─────────────┘       └─────────────┘
```
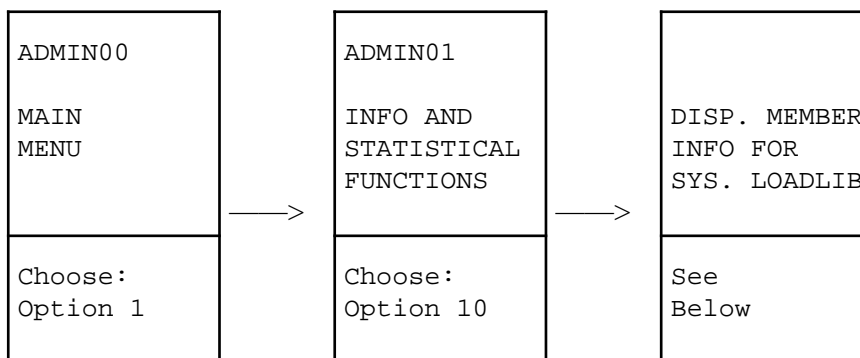
2. The member name and attributes (such as block size, length, origin) are displayed; see figure 13.20.

3. To exit, press:

    ===> **F3**

```
$000:@ADMIN.O                          L 80   W 2 72    Rec 1/62
    LOAD LIBRARY PDS LIST     05NOV86
      LIBE = 226   BLOCKSIZE = 2048
      NO. OF BLOCKS IN DATA SET =   4000

      HEADER INFO:  NEXT FREE BLOCK          1601
                    NO. DIRECTORY ENTRIES     151
                    MAX DIRECTORY ENTRIES     425
                    BLOCK SIZE               2048

           NAME     BLOCK LENGTH ORIGIN ENTRY   ATTRIBUTES        CNTID
      1.  $CTL       868 004D08 001000 001000  RLDS RENT
      2.  $CTLA       17 004BF0 001000 001000  RLDS RENT
      3.  $CTL10       6 004BF0 001000 001000  RLDS RENT
      4.  $INP        28 003B48 001000 001000  RLDS
      5.  $LST        40 000950 001000 001000  RLDS RENT
    ---+--T-1----+---2----+----3----+---4----+----5----+---6----+----7--
Command:
                                                          Reading
Default PFs: 1:Help    2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.20 - 1st Screen for Member Information: *System Loadlib Display*

Displaying Save Library Index Information

To display Save Library Index Information:

1. Choose the following panels:

```
┌─────────────┐        ┌─────────────┐        ┌─────────────┐
│ ADMIN00     │        │ ADMIN01     │        │             │
│             │        │             │        │ DISPLAY     │
│ MAIN        │        │ INFO AND    │        │ SAVE LIBRARY│
│ MENU        │        │ STATISTICAL │        │ INDEX INFO  │
│             │  ───>  │ FUNCTIONS   │  ───>  │             │
│             │        │             │        │             │
├─────────────┤        ├─────────────┤        ├─────────────┤
│ Choose:     │        │ Choose:     │        │ See         │
│ Option 1    │        │ Option 11   │        │ Below       │
│             │        │             │        │             │
└─────────────┘        └─────────────┘        └─────────────┘
```

2. The number of bytes, blocks, and files is displayed; see figure 13.21.

3. To exit, press:

    ===> **F3**

```
$000:@ADMIN.O                           L 80     W 2 73      Rec 1/51
    FILE SYSTEM INDEX SUMMARY (MFINDEX)      WED NOV 05, 1986
    ----------------------------------
    (NOTE:  VALUES REFER TO PRIMARY INDEX ONLY)
      NUMBER OF BLOCKS IN INDEX            6041
      DEB NUMBER                            42
      START BLOCK                            9
      END BLOCK                           6049
      NUMBER OF SEGMENTS                     7
      TOTAL NUMBER OF FILES               1534
      NUMBER OF COMMON ENTRIES             605
      NUMBER OF UCR'S                       47
     # BYTES   # BLOCKS
      USED
     1 -  30   5701     *******************************************
    31 -  60    318     **
    61 -  90     21     .
    ---+--T-1----+----2----+----3----+----4---+----5----+----6---+----7
Command:
                                                          Reading
Default PFs: 1:Help    2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.21 - First Screen of the Save Library Index Information Display

```
$000:@ADMIN.O                           L 80     W 2 73      Rec 44/51
        3         13   **
        4         26   ****
        5         54   ********
        6        226   ************************************
        7        131   *********************
        8        176   *****************************
        9        172   ****************************
       10        292   *********************************************
       11        132   *********************
       12        110   ******************
       13         65   ***********
       14         51   ********
       15         31   *****
       16         25   ****
       17         20   ***
    *END OF FILE


    ---+--T-1----+---2----+----3---+----4----+----5---+----6----+----7--
Command:
                                                          Reading
Default PFs: 1:Help    2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.22 - Second Screen of the Save Library Index Information Display

Figure 13.22 is the second screen for the Save Library Index. It shows the ratio between the length of file names and the number of them.

More information is provided under "MFINDEX: Summarize Save Library Index Usage" in the *MUSIC/SP Administrator's Reference*.

Display System Enqueue Table Information

To display System Enqueue Table information:

1. Choose the following panels:

```
ADMIN00                ADMIN01

MAIN                   INFO AND          DISP. SYSTEM
MENU                   STATISTICAL       ENQUEUE
                       FUNCTIONS         TABLE INFO
              ---->                ---->
Choose:                Choose:           See
Option 1               Option 12         Below
```

See figure 13.23 for a sample system enqueue table display.

2. To exit, press:

    ===> **F3**

```
$000:@ADMIN.O                       L 80    W 2 73     Rec 1/18
   ENQ TABLE AT 80EF00     WED NOV 05, 1986   14.16
   TOTAL CALLS           2404
   HIGH-WATER COUNT        12
   TABLE SIZE             800
   CURRENT COUNT           11
           FLAG BYTE:  80 = SHR, C0 = EXCL.
        ENTRY FLAG TCB# NAME     (TCB# IS IN DECIMAL)
    1.     1  80    1  $U  7         $MON:AUTO1
    2.     2  80    1  $SSYSTEM
    3.     3  80    1  $U  j         $PGM:AUTOPR.LMOD
    4.     4  80    2  $U            $PRT:Q
    5.     5  80    1  $SPRINTER1
    6.     6  80    1  $SPRINTER2
    7.     7  80    1  $U            $PRT:Q
    8.    10  C0   12  $U   +
   STOP


   ---+--T-1----+---2----+----3---+----4----+----5---+----6----+----7--
Command:
                                                       Reading

Default PFs: 1:Help    2:Print    3:Quit    4:Top    5:Center   6:Bottom
 *BROWSE*     7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.23 - System Enqueue Table Information Display

Review of Enqueue Table determines the number of entries in the enqueue table, and finds which user (identified by TCB number) has control of a particular resource, such as a Save Library file. For more information see "ENQTAB: Display Enqueue Table" in the *MUSIC/SP Administrator's Reference*.

Display System Status

To display System Status:

1. Choose the following panels:

```
ADMIN00              ADMIN01

MAIN                 INFO AND            DISPLAY
MENU                 STATISTICAL         SYSTEM
                     FUNCTIONS           STATUS
            ——>                 ——>
Choose:              Choose:             See
Option 1             Option 13           Below
```

2. The system status is displayed on a screen that is automatically updated approximately every 10 seconds, or when a function or action key is pressed; see figure 13.24.

3. To exit, press:

    ===> **F3**

```
---------------------------- System Status -------------- 09.24.03

Storage Size: 8192K TCBs:  80 RCBS: 82 MAXMPL: 8 MAXRRS: 592K

Users:  18 Sessions:  23  Response Time: 0.02 (sec) CPU Usage: 49.68%

Running:  17      In Core:  16   Swapped:   1

 Active:   2       Queued:   0      Idle:  15

Total Pages: 5248K   Free Pages: 1052K


Activity        Count  Rate/Sec
--------     --------- ---------
I/O           747360   22.64
SVC          6841682  178.00
PAGE WR          406    0.00
PAGE RD         2884    0.00
PLPA RD        24639    0.00
SWAP WR            2    0.00
SWAP RD            3    0.00

F3:End
```

Figure 13.24 - System Status Screen

Display Memory Map

To display Memory Map:

1.   Choose the following panels:

```
┌─────────────┐       ┌─────────────┐       ┌─────────────┐
│ ADMIN00     │       │ ADMIN01     │       │             │
│             │       │             │       │             │
│ MAIN        │       │ INFO AND    │       │ DISPLAY     │
│ MENU        │       │ STATISTICAL │       │ MEMORY      │
│             │       │ FUNCTIONS   │       │ MAP         │
│             │       │             │       │             │
│             │ ───>  │             │ ───>  │             │
├─────────────┤       ├─────────────┤       ├─────────────┤
│ Choose:     │       │ Choose:     │       │ See         │
│ Option 1    │       │ Option 14   │       │ Below       │
│             │       │             │       │             │
└─────────────┘       └─────────────┘       └─────────────┘
```
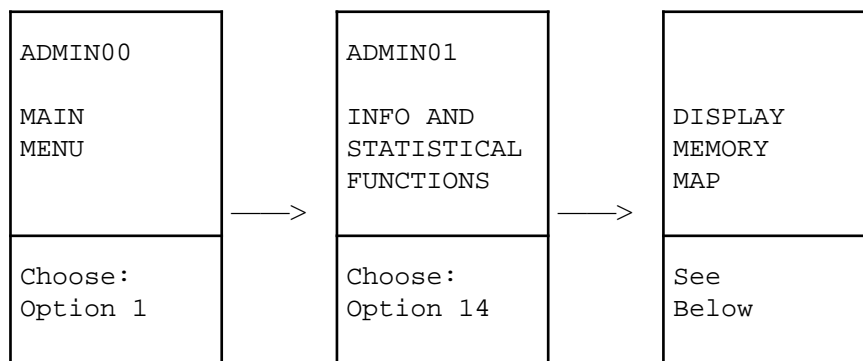
2.   The memory map is displayed; see figure 13.25.

3.   To exit, press:

   ===> **F3**

```
$000:@ADMIN.O                        L 80     W 2 73      Rec 1/18
  MEMORY REPORT


  TOTAL MEMORY: 8192K,  PAGE POOL:  5248K
  TCBS:  80, RCBS:  82, MAXRRS:    592K, MAXMPL: 8


                 V-START V-END    R-START R-END    LEN
  LOW CORE      000000  000FFF  000000  000FFF       4K
  PAGE POOL 1                   000000  030000     192K
  NUCLEUS       800000  858A88  030000  088A88     354K
  TCBS          858A88  86E3B0  088A88  09E3B0      86K
  BPOOL         86E3B0  8891E0  09E3B0  0B91E0     107K
  LPA           8891E0  A339C0  0B91E0  2639C0    1705K
  TRACE AREA    A339C0  A39000  2639C0  269000      21K
  RCBS          A39000  ADD000  269000  30D000     656K
  PAGE POOL 2                   30D000  7FFFFF    5067K


    ---+--T-1----+---2----+----3---+----4----+----5---+----6----+----7--
Command:
                                                           Reading

Default PFs: 1:Help    2:Print    3:Quit    4:Top   5:Center  6:Bottom
 *BROWSE*    7:Uppage  8:Downpage 9:Locate 10:Left 11:Right  12:Command
```

Figure 13.25 - Memory Map Display

Updating Shared ID Table for CMS IDs

To display or update the shared CMS ID table (used by applications such as the CICS and ACCESS interfaces):

1. Choose the following panels:

```
+----------------+      +----------------+      +----------------+      +----------------+
| ADMIN00        |      | ADMIN04        |      | ADMIN04A       |      |                |
|                |      |                |      |                |      | UPDATE         |
| MAIN           |      | SYSTEM         |      | ADDITIONAL     |      | SHARED CMS     |
| MENU           |      | TAILORING      |      | TAILORING      |      | ID TABLE       |
|                | ---> | TASKS          | ---> | TASKS          | ---> |                |
|                |      |                |      |                |      |                |
|                |      |                |      |                |      |                |
| Choose:        |      | Choose:        |      | Choose:        |      | See            |
| Option 4       |      | Option 10      |      | Option 10      |      | Below          |
+----------------+      +----------------+      +----------------+      +----------------+
```

2. You find yourself editing a file. This file contains CMS userids, passwords, and application names used by MUSIC applications to automatically start up sessions on CMS.

3. Enter your changes directly into the file, using editor commands. Your input is free format, with the following rules:

    a) one CMS userid, password, and application name per line, userid first, password second, application name third, separated by at least 1 blank

b) lines starting with an asterisk ('*') are treated as comment lines

c) application name is optional and, if specified, exclusively reserves this CMS userid for use only with applications with this application name (the application name is set in the control program setting up the application. An example of a control program is given in the next topic, "Updating External Access Tables").

4. Type FILE to store your changes into this file. If you decide to abandon your changes, type QUIT and respond YES to the prompt.

Updating External Access Tables

To manage external access tables you can use the ACCESS facility. The ACCESS facility allows users to connect to applications running on CMS or other MUSIC systems using the MUSIC Passthru Interface. The general idea is that the MUSIC user is automatically connected and signed on, required files are transferred, the application is run and results are transferred back to MUSIC.

This setup program lets you, the MUSIC administrator, define the system that are accessible to users.

1. Choose the following panels to access this facility:

```
 ┌────────────────────┐       ┌────────────────────┐       ┌────────────────────┐       ┌────────────────────┐
 │ ADMIN00            │       │ ADMIN04            │       │ ADMIN04A           │       │                    │
 │                    │       │                    │       │                    │       │ MANAGE             │
 │ MAIN               │       │ SYSTEM             │       │ ADDITIONAL         │       │ EXTERNAL           │
 │ MENU               │       │ TAILORING          │       │ TAILORING          │       │ ACCESS             │
 │                    │  ──>  │ TASKS              │  ──>  │ TASKS              │  ──>  │ TABLES             │
 │                    │       │                    │       │                    │       │                    │
 ├────────────────────┤       ├────────────────────┤       ├────────────────────┤       ├────────────────────┤
 │ Choose:            │       │ Choose:            │       │ Choose:            │       │ See                │
 │ Option 4           │       │ Option 10          │       │ Option 12          │       │ Below              │
 └────────────────────┘       └────────────────────┘       └────────────────────┘       └────────────────────┘
```
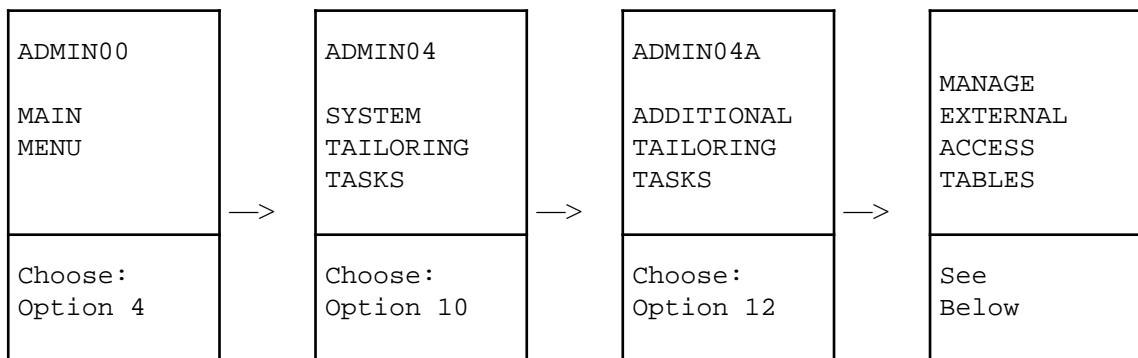
Help is provided with this facility once it is invoked.

2. An application name can be set for the application using this facility. This name is used to match a CMS userid that has been exclusively reserved for this application. For example, assume the Shared ID table is the following:

```
VMUSER01 VMUSERXX TCPIP
VMUSER02 VMUSERXX SQL
VMUSER03 VMUSERXX
```

Also, assume we have set up our application, called TELNET, using the method to update the external access table and assigned it an application name of TCPIP. Then, when we run "ACCESS TELNET", only the CMS userid VMUSER01 is used for this application.

Part V - Servicing

Chapter 14. Support and Service

Obtaining Support

Obtaining Support: USA and Canada

McGill University Systems Inc. is directly responsible for customer support of MUSIC/SP V2 in the USA and Canada. This support includes installation, technical assistance, as well as defect reporting. Customers can obtain this support by using MUSCOM. MUSCOM allows you to send electronic mail messages from your system to the support group. It also provides the ability to directly receive the latest bug lists and answers to frequently asked questions seven days a week. See *Chapter 15 - MUSCOM* for more details.

As a backup to MUSCOM, calls can be placed to 800-888-8350. Calls from outside of the USA can be placed to 514-398-4477. The calls may be placed twenty-four hours a day, seven days a week. Calls will be answered on a call back basis during business hours.

McGill University Systems Inc. will also accept support messages by FAX at (514) 398-4488.

Obtaining Support: Other Countries

MUSIC/SP is supported in different ways in countries outside of the USA and Canada. Contact your IBM representative to find out more about the support offered in your area. Alternately, contact McGill University Systems using the techniques described above to determine how support is done in your area.

Electronic Discussion Lists

The LISTSERV software on BITNET provides a forum for you to discuss topics of interest with other computer users. If you have access to BITNET or the Internet, then you can join a discussion list. MUSIC users can join MUS-L which discusses general MUSIC issues. A system administrator can join the list called MUG. The MUG list is a closed list and your subscription must be confirmed by the list owner (security issues related to MUSIC are sometimes discussed).

To join a list, send e-mail to the address of the list and include the SUBSCRIBE command as the text of the message. For example, to join the MUS-L list send mail to "LISTSERV@MARIST" (BITNET address) or "LISTSERV@VM.MARIST.EDU" (Internet address) and include one line of text only, as follows:

```
SUBSCRIBE MUS-L John Smith
```

To join the MUG list send mail to the same address and include the following line:

```
SUBSCRIBE MUG John Smith
```

In both cases you will receive confirmation by e-mail about being added to the list.

Maintaining System Service

Service tapes are distributed periodically. These contain service for MUSIC/SP and any optional IBM products that you have installed. The first file on the tape contains the cumulative object file replacements for MUSIC/SP. Subsequent files contain updates for the various products. The header label on the tape describes the service level contained.

Displaying Current System Service Level

To display the current system service level:

1. Choose the following panels:

```
┌─────────────────┐          ┌─────────────────┐          ┌─────────────────┐
│ ADMIN00         │          │ ADMIN05         │          │ DISPLAY         │
│                 │          │                 │          │ SYS. SERVICE    │
│ MAIN            │          │ SYSTEM          │          │ LEVEL           │
│ MENU            │          │ SERVICING &     │          │                 │
│                 │  ──────> │ OPT PRODUCTS    │  ──────> │                 │
│                 │          │                 │          │                 │
├─────────────────┤          ├─────────────────┤          ├─────────────────┤
│ Choose:         │          │ Choose:         │          │ See             │
│ Option 5        │          │ Option 1        │          │ Below           │
└─────────────────┘          └─────────────────┘          └─────────────────┘
```
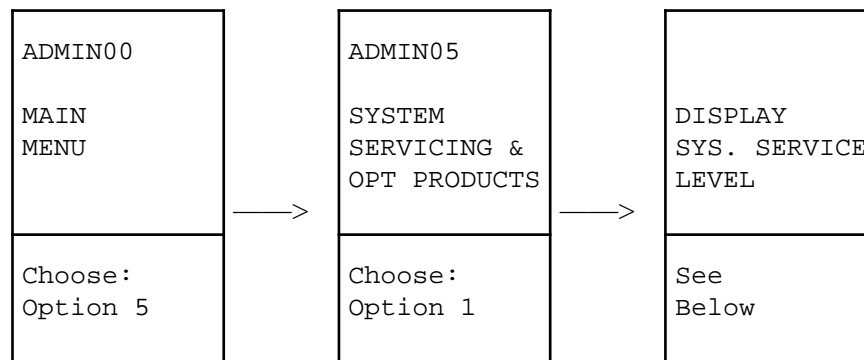
2. The file $SRV:@CONTROL.BASE is displayed; it shows the system service level fixes installed to date.

    See figure 14.1 for a sample of the service control base file.

3. The administrator can browse and print this file.

4. To exit, press:

    ===> **F3** (to quit).

```
MUSV2 G B B B B B A A A A D D D D D D D D D E E E E E E F F F

* Service level 05/01/94

*
*  The service tape applies to MUSIC/SP Version 3 Release 1.
*

* M0401                                                      10/
*
* MUSIC Nucleus, system macros, and updated MUS.VER and SOURCE.KEY
*
* LOCORE system macro
* Updated MUSIC system level
*
* PAGE0 system module
* Updated MUSIC system level
*
* Updated $GEN:MUS.VER
* $GEN:MUS.VER provides MUSIC system level information for VER command
*
* Updated $GEN:SOURCE.KEY
* $GEN:SOURCE.KEY provides information to determine where a file
* can be found (ie service tape and ptf or source tape).
*
* Applies to MUSIC/SP Version 2 Release 4
*
M0401 B G NUCGEN CDATE= 01MAY93
  FILE= $GEN:MUS.VER $GEN:SOURCE.KEY $MCM:LOCORE.M -
        $SYS:PAGE0.OBJ
   OBJ= $SRV:OBJ0401 CTL= $SRV:CTL0401
```

Figure 14.1 - Display Service Level (file: $SRV:@CONTROL.BASE)

Retrieving Service Information

To retrieve the service information from the latest Service / Optional Product tape(s):

Choose the following panels:

```
 ┌─────────────────┐        ┌─────────────────┐        ┌─────────────────┐
 │ ADMIN00         │        │ ADMIN05         │        │                 │
 │                 │        │                 │        │                 │
 │ MAIN            │        │ SYSTEM          │        │ RETRIEVE        │
 │ MENU            │        │ SERVICING &     │        │ SERVICE         │
 │                 │        │ OPT PRODUCTS    │        │ INFO            │
 │             ───────>     │             ───────>     │                 │
 ├─────────────────┤        ├─────────────────┤        ├─────────────────┤
 │ Choose:         │        │ Choose:         │        │ See             │
 │ Option 5        │        │ Option 3        │        │ Below           │
 │                 │        │                 │        │                 │
 └─────────────────┘        └─────────────────┘        └─────────────────┘
```
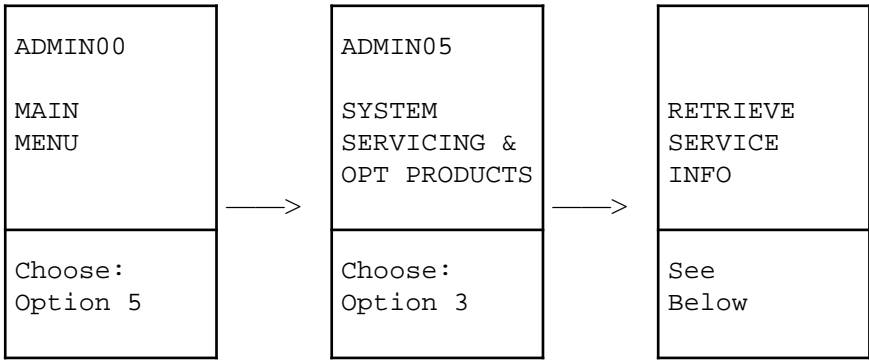
This procedure loads information from the Service / Optional products tape(s). A series of batch jobs will

be sent to the ADMIN Facility. These batch jobs will require the Service tape(s) to be mounted.

The latest version of online manuals are put online during this step.

For more information, see "Attaching a Tape Drive to MUSIC" in Chapter 10. Be sure to handle Batch Jobs and Mount Requests as they appear.

Note: Do not READY the tape unit, until the MUSIC Console displays a mount message.

This function must be entered before the service is installed.

Installing Service

To install service on the ADMIN facility:

1.   Choose the following panels:

```
+-----------------------+     +-----------------------+     +-----------------------+
| ADMIN00               |     | ADMIN05               |     |                       |
|                       |     |                       |     |                       |
| MAIN                  |     | SYSTEM                |     | INSTALL               |
| MENU                  |     | SERVICING &           |     | SERVICE               |
|                       |     | OPT PRODUCTS          |     |                       |
|                 ----> |     |                 ----> |     |                       |
|                       |     |                       |     |                       |
+-----------------------+     +-----------------------+     +-----------------------+
| Choose:               |     | Choose:               |     | See                   |
| Option 5              |     | Option 5              |     | Below                 |
|                       |     |                       |     |                       |
+-----------------------+     +-----------------------+     +-----------------------+
```
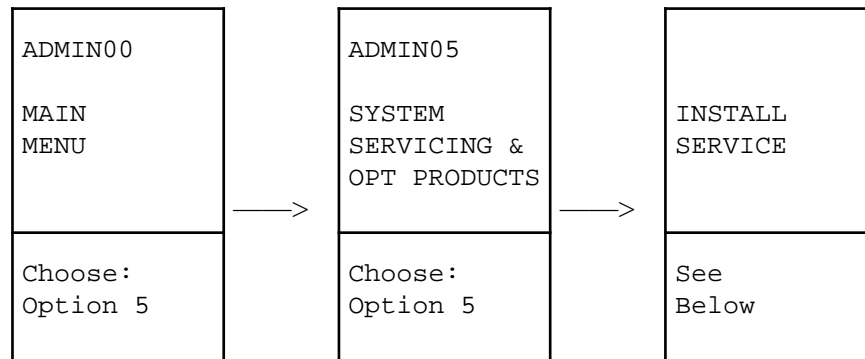
2.   On the next screen (figure 14.2) you are asked to verify the service tape. This is the same service tape that you used in the previous step "Retrieving Service Information", ADMIN 5 3.

```
 This procedure will apply service from the following service tape:

        MUSIC/SP V4R1 Service 2  Tape 9402  Date 95256

 If this is not the service tape you wish to apply,
 answer NO to the next question and select option 3
 ("Retrieve service & optional product info") from the
 ADMIN menu.



 Is this the correct service tape?  (yes/no)




 ------T---------------------------------------------------------T

                                                        Reading
```

Figure 14.2 - Verifying Service Tape

3. On the next screen (figure 14.3), you are prompted to enter one of the following:

- MUSIC (to install service to the MUSIC System)

- PRODUCTS (to install service for the Optional Products only)

- BOTH (to install service for both the MUSIC System and Optional Products

- EXIT (to terminate the request)

```
 This facility allows for the installation of service to both
 the MUSIC/SP V4 System and any installed Optional Products.

 If you wish to install service for just the MUSIC System, enter
 the option MUSIC.  For installation of service for the Optional
 Products only, enter the option PRODUCTS.  If you wish service
 installed for both the MUSIC System and Optional Products, enter
 the option BOTH.  To terminate this function, enter EXIT.

 Select one of the options MUSIC | PRODUCTS | (BOTH) | EXIT  ---?
 ?




 ------T-------------------------------------------------------------T

                                                           Reading
```

Figure 14.3 - Installing Service to MUSIC/SP

Notes:

a. Do not READY the tape unit, until the MUSIC Console displays a mount message.

b. BEFORE the batch jobs execute, all users should be logged off the system. If this is NOT done and a user is executing a function or optional product that is being updated, not all associated files affected by the service will be updated.

4. On the next screen (figure 14.4), you are prompted to enter the ptf numbers to apply. Normally, you would apply ALL ptfs.

```
Service tape level: * Service level 13/09/95
The following PTFs from this service tape apply to your system:


M0407 M0408 M0409 M0410 M0411 M0412 M0413 M0414 M0415 M0416 M0417 M0418


Enter your request for processing Service for your system.   The
options are: HELP | LIST | EXIT | (ALL) | ALL  EXCLUDE ptf list
                                        | SELECT ptf list
                                        | SOURCE ptf list


(Normally you should reply  ALL  to the above question)




  ------T-------------------------------------------------------T
```

Figure 14.4 - Applying ptf Numbers

Installing APAR on MUSIC/SP System

To install an APAR using ADMIN:

1.   Choose the following panels:

```
+----------------+      +----------------+      +----------------+
| ADMIN00        |      | ADMIN05        |      |                |
|                |      |                |      | INSTALL APAR   |
| MAIN           |      | SYSTEM         |      | ON MUSIC/SP    |
| MENU           |      | SERVICING &    |      | SYSTEM         |
|                |  --> | OPT PRODUCTS   |  --> |                |
|                |      |                |      |                |
+----------------+      +----------------+      +----------------+
| Choose:        |      | Choose:        |      | See            |
| Option 5       |      | Option 6       |      | Below          |
+----------------+      +----------------+      +----------------+
```
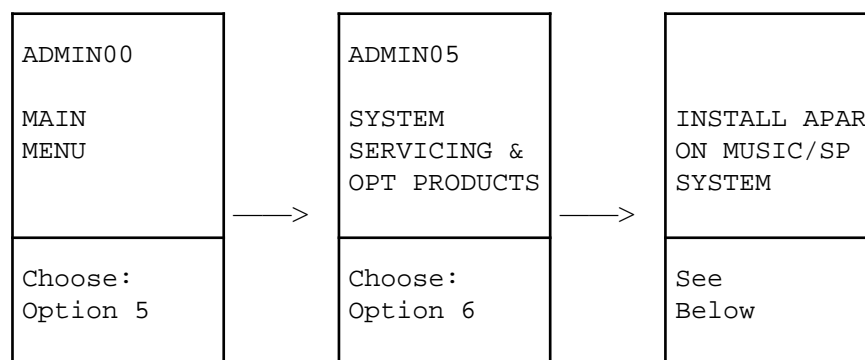
2.   On the next screen (figure 14.5), you are prompted to enter:

   •   The APAR number for the temporary fix being applied to your system, or

   •   EXIT to terminate the request.

3.   You will be prompted for additional information as needed for the APAR.

```
┌──────────────────────────────────────────────────────────────────────┐
│                                                                        │
│    Please enter the APAR number for the temporary fix being            │
│    applied to your system.   This number is of the form Txxxx          │
│    and was supplied to you by the IBM Support Center.                   │
│    Enter APAR number for this temporary fix or                         │
│    EXIT to terminate this function.                                    │
│    ?                                                                    │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│    ------T-------------------------------------------------------T     │
│                                                                        │
│                                                           Reading       │
└──────────────────────────────────────────────────────────────────────┘
```
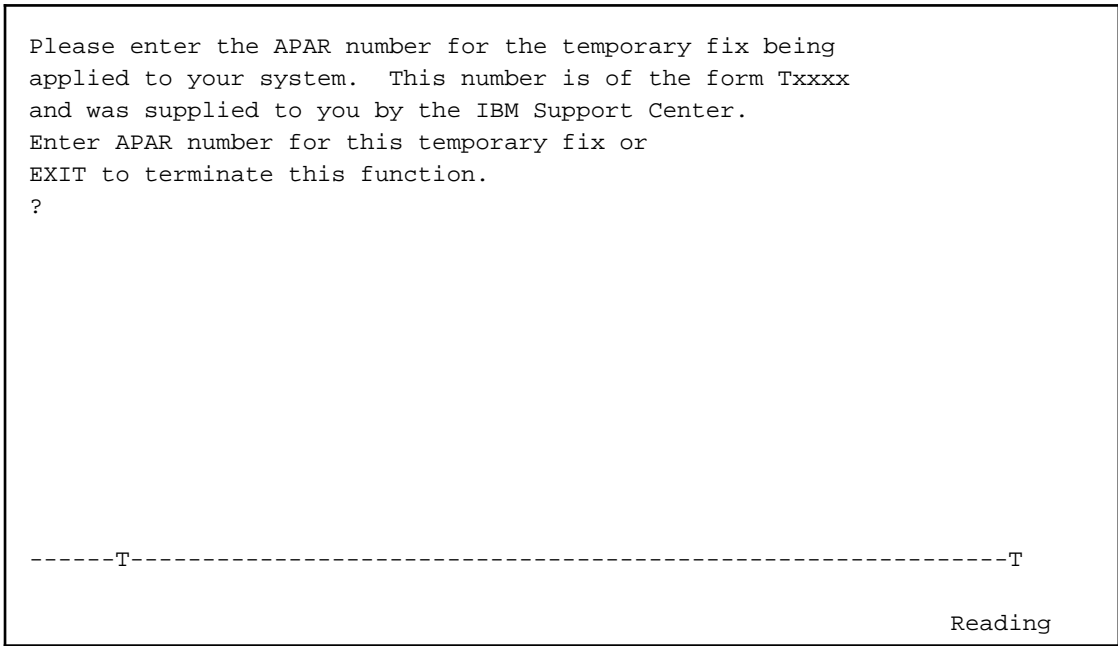
Figure 14.5 - Installing an APAR on MUSIC/SP

Removing Service from MUSIC/SP System

To remove applied service from ADMIN:

1. Choose the following panels:

```
┌─────────────────┐     ┌─────────────────┐     ┌─────────────────┐
│ ADMIN00         │     │ ADMIN05         │     │                 │
│                 │     │                 │     │ REMOVE          │
│ MAIN            │     │ SYSTEM          │     │ SERVICE FROM    │
│ MENU            │     │ SERVICING &     │     │ MUSIC/SP        │
│                 │     │ OPT PRODUCTS    │     │                 │
│                 │──>  │                 │──>  │                 │
├─────────────────┤     ├─────────────────┤     ├─────────────────┤
│ Choose:         │     │ Choose:         │     │ See             │
│ Option 5        │     │ Option 7        │     │ Below           │
│                 │     │                 │     │                 │
└─────────────────┘     └─────────────────┘     └─────────────────┘
```
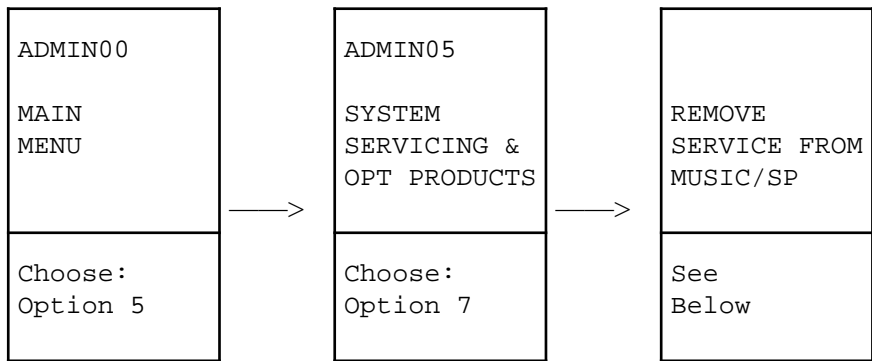
2. The facility displays current PTFs installed on your system (figure 14.6).

3. You are prompted to enter either:

    •   The PTF number of the service to be removed, or

    •   LIST (to display a description of the PTFs)

        When the list is displayed you can browse the file using the function keys described at the bottom
        of the screen. See "Appendix B. Program Functions Keys" for more information.

        F3 returns you to the option of specifying an PTF to be removed.

- EXIT (terminate request).

```
The following PTFs are installed on your system:

M0111 M0112 M0113 M0114

Enter the PTF numbers which you wished removed from your system.
Enter LIST to display a description of the PTFs or EXIT to
terminate this function.
?




------T-------------------------------------------------------T
                                                        Reading
```

Figure 14.6 - Removing Service from MUSIC/SP

Re-running Service Procedure

After reviewing an output listing from the installation of service the administrator can determine if any of the PTFs failed to properly install. PTFs may fail for a number of reasons, for example:

- the user mounted the incorrect tape

- the user cancelled one or more batch jobs

- a file being updated by a PTF was in use

- the Save Library was full

To re-run the service installation:

1. Choose the following panels:

```
ADMIN00              ADMIN05

MAIN                 SYSTEM           RE—RUN
MENU                 SERVICING &      SERVICE
                     OPT PRODUCTS
              ——>                 ——>

Choose:              Choose:          See
Option 5             Option 8         Below
```
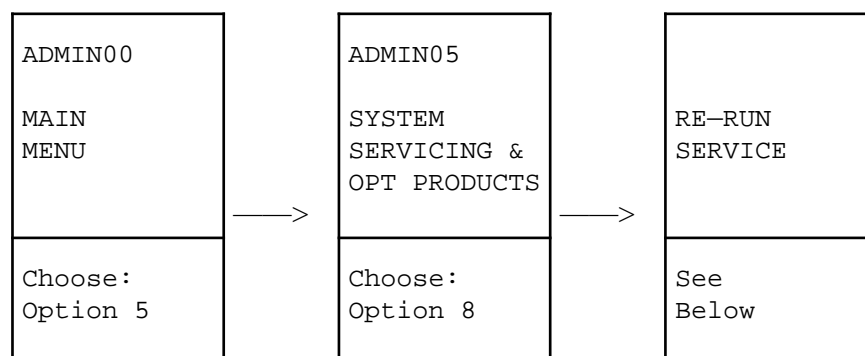
2. On the next screen (figure 14.7), you are prompted to enter one of the following:

    • MUSIC (to install service to the MUSIC System)

    • PRODUCTS (to install service for the Optional Products only)

    • BOTH (to install service for both the MUSIC System and Optional Products

    • EXIT (to terminate the request)

```
This facility allows for the re-installation of service to both
the MUSIC/SP V4 System and any installed Optional Products.

If you wish to re-install service for just the MUSIC System, enter
the option MUSIC.  For re-installation of service for the Optional
Products only, enter the option PRODUCTS.  If you wish service
re-installed for both the MUSIC System and Optional Products, enter
the option BOTH.  To terminate this function, enter EXIT.

Select one of the options MUSIC | PRODUCTS | (BOTH) | EXIT  ---?
?




------T-------------------------------------------------------------T

                                                         Reading
```

Figure 14.7 - Installing Service to MUSIC/SP

   Notes:

   a. Do not READY the tape unit, until the MUSIC Console displays a mount message.

   b. BEFORE the batch jobs execute, all users should be logged off the system. If this is NOT done
       and a user is executing a function or optional product that is being updated, not all associated
       files affected by the service will be updated.

Redisplaying Service Level File

After service has been installed or removed, redisplay the service level file to ensure the service was success-
fully updated.

Chapter 15. MUSCOM

What is MUSCOM?

MUSCOM is a facility that enables MUSIC installations to communicate directly with the MUSIC support site via electronic mail or fax. Through MUSCOM, your problems and questions can be answered by the MUSIC Product Group at McGill University.

How to Use MUSCOM

To communicate with the MUSIC support group use the MUSCOM program which can be selected from ADMIN.

1. Choose the following panels:

```
ADMIN00                  ADMIN05                  ADMIN05A

MAIN                     SYSTEM                   COMMUNICATE
MENU                     SERVICING &              WITH MUSIC
                         OPT PRODUCTS             GROUP
          ------>                    ------>
Choose:                  Choose:                  See
Option 5                 Option 10                Below
```
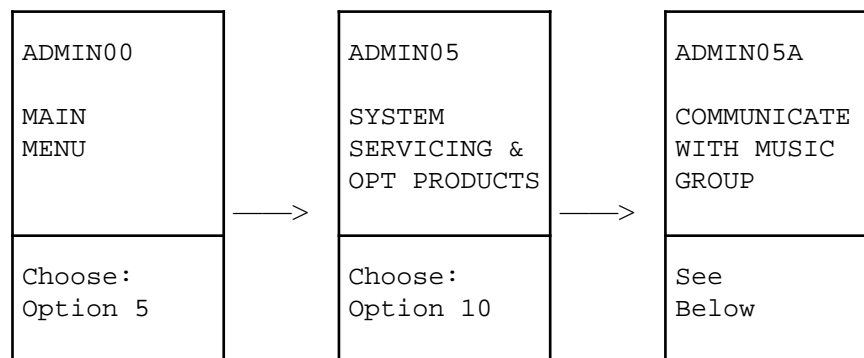
2. On the next screen (figure 15.1), you are given a number of menu items to choose from. Make the appropriate selection and follow instructions as they are presented. Help is provided with each screen.

```
 -------------- Communicate with MUSIC support group -----------ADMIN05A


 SELECT OPTION ====> _
                                                 Time:    9:41 am
 1  Submit information about your site
 2  Ask a question                          1993    SEPTEMBER    19 93
 3  Report a problem
 4  Make a suggestion                   S    M    T    W    T    F    S
 5  Submit a formal enhancement request                1    2    3    4
 6  Get info - news, bug fixes, etc.    5    6    7    8    9   10   11
 P  View previous submissions          12   13   14   15   16   17   18
 H  About this communications facility 19   20   21   22   23   24   25
                                       26   27   28   29   30


                                           Day of year:   272




 ========================================================================
 F1:Help on Menu F2:Todays Reminders F3:Exit  F6:Mail Waiting  F12:Retrv
```

Figure 15.1 - Communicating with the MUSIC support group

With each selection you are given the choice to send electronic mail or prepare a file for printing. This
printed file could then be faxed or mailed.

The MUSCOM program will automatically attach certain MUSIC system configuration files to your submis-
sion, if necessary. For example, if you report a system problem then the NUCGEN configuration file will be
included in the submission.

Use the "Get Info" selection to get a list of reported problems and answers to frequently asked questions.
Responses to these items will be automatically sent back to you.

Appendixes

Appendix A. Installation Worksheet

Pre-Installation Preparation

You will need to obtain the following information BEFORE starting to install MUSIC/SP. You may need to consult your VM system programmer, or someone who is familiar with your VM/SP operations.

A. VM SYSTEM SUPPORT USER ID   [A]   __ __ __ __ __ __ __ __
      - Usually 'MAINT'; check with your VM systems programmer
        if you are not sure.

B. VM SYSTEM SUPPORT ID PASSWORD   [B]   __ __ __ __ __ __ __ __

C. PHYSICAL ADDR. OF ACCESSIBLE TAPE DRIVE   [C]   __ __ __
      - Must be accessible by someone who can load and 'ready'
        tapes for you.

D. PHYSICAL ADDR. OF DASD VOLUME FOR MUSICX   [D]   __ __ __
      - Ask VM systems programmer if not sure.

E. DEVICE TYPE OF DASD VOLUME FOR MUSICX   [E]   __ __ __ __
      - Must be either 3350, 3370, 3375, 3380, 3390, 9332, 9335, 9345,
        9336 or 0671.

F. PHYSICAL ADDR. OF DASD VOLUME FOR MUSIC1   [F]   __ __ __

G. DEVICE TYPE OF DASD VOLUME FOR MUSIC1   [G]   __ __ __ __
      - Must be either 3350, 3370, 3375, 3380, 3390, 9332, 9335, 9345,
        9336 or 0671.

H. PASSWORD FOR NEW MUSIC VIRTUAL MACHINE   [H]   __ __ __ __ __ __ __ __
      - Use default 'MUSIC' or use your own; must be 5-8 alphanumeric
        characters long.

I. AMOUNT OF MAIN STORAGE TO ALLOCATE TO MUSIC   [I]   __ __ M
      - In megabytes, default is '2M'; do not use more than '16M'.

J. IS THIS A 'VIRTUAL=REAL' STORAGE AREA?   [J]   __ __ __
      - Indicate YES or NO; check with your VM systems programmer
        if not sure.

K. INDICATE VM ENVIRONMENT (BY NUMBER)   [K]   __
      - Where: 1 = VM/IS; 2 = VM/SP SIPO; 3= VM/SP or
        other environments.

L. WANT TO ALLOCATE ADDITIONAL DASD VOLUMES?   [L]   __ __ __
      - Indicate YES or NO; YES only if additional DASD volume
        is available NOW.

      (a) IF SO, INDICATE PHYSICAL ADDRESS OF THE
         ADDITIONAL DASD VOLUME.   [a]   __ __ __

(b) ALSO, INDICATE THE DEVICE TYPE   [b]   __ __ __ __
  - Must be 3350, 3370, 3375, 3380, 3390, 9332, 9335, 9345,
    9336 or 0671.

Device Addresses for the DASD Volume Restores

The following information will be provided to you during the VM portion of the installation procedure. Be
sure to record these device addresses, as you will need them during the Disk Volume Restores.

M.   DEVICE ADDR. OF THE MUSICX DASD VOLUME   [M]   __ __ __
  - Obtained from VM installation EXEC.

N.   DEVICE ADDR. OF THE MUSIC1 DASD VOLUME   [N]   __ __ __
  - Obtained from VM installation EXEC.

Appendix B. Program Function Keys

There are a few areas where you need to use the MUSIC/SP editor. Function key assignments are displayed at the bottom of the screen. These assignments may vary from one screen to another.

Essentially, there are three types of editing commands available via the function keys:

1. Screen Scrolling Commands

    These commands are used to move around within the file. Note that the edit area is the area of the file which can be viewed on the screen at one time (approximately 24 lines, each 72 columns wide, depending on screen type).

    TOP   Moves the edit area to the top lines of the file.

    BOTTOM   Moves the edit area to the bottom lines of the file.

    DOWNPAGE   Moves the edit area forward, towards the bottom of the file, by one screen area (approximately 24 lines, depending on screen type).

    UPPAGE   Moves the edit area backward, towards the top of the file, by one screen area (approximately 24 lines, depending on screen type).

    RIGHT   Moves the edit area to the right, towards the last column defined in the file (approximately 72 spaces, depending on file width).

    LEFT   Moves the edit area to the left, towards the first column defined in the file (approximately 72 spaces, depending on file width).

    CENTER   Moves the full screen display up or down in the file, so that the current line will be in the center of the screen display.

2. Editing Commands

    These commands are used to insert or delete lines of text in the file. Note that the current line is usually highlighted (usually in red, as opposed to other lines in the file being green, depending on screen type and color settings).

    MARK   To define a group of lines move the line pointer to the first line of the group and press the MARK function key, then move the pointer to the last line of the group and press the MARK key again.

    INS LINE   Opens up one blank line after the line containing cursor. If cursor is in command area, opens up blank line after line where current line pointer points.

    DEL LINE   Deletes the entire line cursor is on. If cursor is in command area, deletes current line where line pointer points.

    INPUT MODE   Opens up 15 blank lines after line containing cursor. If cursor is in command area, opens up 15 blank lines where current line pointer points. When input mode is in effect, pressing the input mode function key will switch the user to edit command mode.

SPLIT   Splits the line into 2 lines at the cursor location.

3.   Exit Commands

Use these commands to leave the MUSIC/SP editor.

FILE   Leaves the editor, saving all changes made and replaces the original file with the newly modified file.

QUIT   Leaves the editor, ignoring any changes made, and leaves the original file as it was.

Appendix C. The ADMIN Facility Menu Hierarchy

```
                                   ┌──────────────┐
                                   │   ADMIN01    │
                                   │              │
                  ───────1──>      │ Info and     │
                         │         │ Statistical  │
                         │         │ Functions    │
                         │         └──────────────┘
                         │
                         │         ┌──────────────┐
                         │         │   ADMIN02    │
                         │         │              │
                         ├───2──>  │ Working      │
                         │         │ with         │
                         │         │ Userids      │
                         │         └──────────────┘
    Sign on the          │
    ADMIN facility │     │         ┌──────────────┐
                   │     │         │   ADMIN03    │
                   │     ├───3──>  │              │
                   │     │         │ Working      │
                   │     │         │ with         │
                   │     │         │ User Files   │
                   │     │         └──────────────┘
  ┌──────────────┐ │     │
  │   ADMIN00    │ │     │ ┌──────────────┐          ┌──────────────┐
  │              │ │     │ │   ADMIN04    │          │  ADMIN04A    │
  │ Support Tasks├─┼─────┤ │              │          │              │
  │ Main Menu    │ │  4──> │ System       │ ──10──>  │ Additional   │
  │              │ │     │ │ Tailoring    │          │ Tailoring    │
  └──────────────┘ │     │ │ Functions    │          │ Tasks        │
                   │     │ └──────────────┘          └──────────────┘
          │        │     │ ┌──────────────┐
          │        │     │ │   ADMIN05    │
          F3       │     │ │              │
          │        │     ├───5──>  │ Service      │
       MUSIC       │     │ │ MUSIC and    │
     Environment   │     │ │ Opt'l Products│
                   │     │ └──────────────┘
                   │     │
                   │     │ ┌──────────────┐
                   │     │ │              │
                   │     │ │              │
                   │     ├───6──>  │ Display      │
                   │     │ │ File Names   │
                   │     │ └──────────────┘
                   │     │
                   │     │ ┌──────────────┐
                   │     │ │              │
                   │     ───────7──>  │ Change       │
                   │       │ Password     │
                   │       └──────────────┘
```

|───────"> "Continued on next page"

```
                                               ┌─────────────┐
                                               │             │
                                               │             │
                        ──────8─>              │ Display     │
                               |               │ Batch       │
                               |               │ Information │
                               |               └─────────────┘
                               |
                               |               ┌─────────────┐
                               |               │    FSI      │
                               |               │             │
                        |──────9─>             │ Full        │
                               |               │ Screen      │
                               |               │ Interface   │
                               |               └─────────────┘
    Sign on the                |
    ADMIN facility |           |               ┌─────────────┐
             |                 |               │             │
             |         |──────10─>             │ Display     │
             |                 |               │ Output      │
             |                 |               │ Facility    │
    ┌─────────────┐            |               └─────────────┘
    │  ADMIN00    │            |
    │             │            |               ┌─────────────┐
    │ Support Tasks──|──────11─>               │ System      │
    │ Main Menu   │            |               │ Help        │
    │             │            |               │ Facility    │
    └─────────────┘            |               └─────────────┘
             |                 |
             |                 |               ┌─────────────┐
             |                 |               │             │
            F3                 |               │ System      │
             |         |──────12─>             │ Console     │
          MUSIC                |               │ Facility    │
       Environment             |               └─────────────┘
             |                 |
             |                 |               ┌─────────────┐
             |                 |               │             │
             |         |──────13─>             │ What's New  │
             |                 |               │ With MUSIC  │
             |                 |               └─────────────┘
             |                 |
             |                 |               ┌─────────────┐
                               |               │             │
                        ──────H─>              │ Description │
                                               │ and Function│
                                               │ Usage       │
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