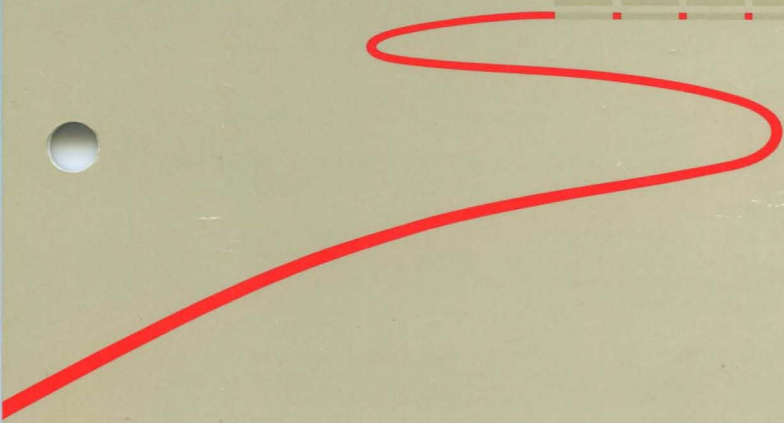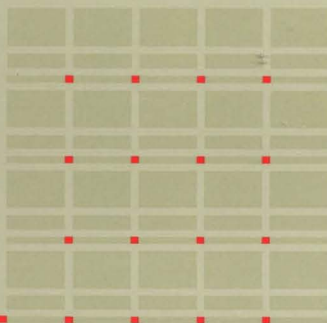# Network
Station
User's
Guide

MSDOS 2.0

CORVUS

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MS™-DOS 2.0
Network Station
User Guide

IBM® Personal Computer

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GETTING STARTED

This guide explains how to use an IBM Personal Computer running the MS-DOS 2.0 operating system with an OmniDrive™ network disk system and Constellation II software. In particular, this guide describes how to gain access to the Corvus mass storage system and how to activate volumes. It also discusses how to send, receive, and print files, and back up volumes on diskettes.

HOW THIS GUIDE IS ORGANIZED

Chapter 1 tells how to log on, gain access to the Corvus mass storage system and use a user name and password.

Chapter 2 describes how to activate volumes. It shows how to enter the mount manager program and use it to list volumes, prepare a volume for use, and set the write access to protect a volume. The chapter also explains how to examine volumes on several Corvus mass storage systems.

Chapter 3 tells how to use the pipes area on the Corvus mass storage system to print files to network printers and exchange information between network users.

Chapter 4 describes the backup-to-floppy program. The chapter shows how to save an entire volume on diskettes and restore an entire volume from diskettes.

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USAGE

Throughout this guide, the word **type** means to enter two or more characters or keyboard symbols on the computer keyboard. Type all words, symbols, spaces and punctuation to the right of the word **type** exactly as shown. Do not add or leave out punctuation marks at the end of the statement.

Examples:

Type DIR A:

Type DESPOOL

Do not type the spaces between the word **type** and the first character to its right.

When the command **type** appears in a sentence or paragraph, type the information indicated.

Example:

Type a user name and password.

Throughout this guide, **press** means to enter a single character or keytop symbol on the computer keyboard. When a keytop symbol appears, press the key to which it refers. Do not type out each letter of the word in the keytop symbol.

Examples:

Press Y

Press RETURN

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Throughout this guide, **x.xx** stands for version numbers in screen displays.

Example:

Corvus Mount Manager Utility [x.xx]
Copyright 1983 by Corvus Systems, Inc.

The terms **boot** and **reboot** refer to loading and reloading the operating system into a computer.

Throughout this guide, **press** [ESC] in response to any question on the screen to return to the menu one level above.

Throughout this guide, **n** represents the unit letter for the volume containing a particular program. The unit letter value varies, depending on which unit the volume was assigned. For example, to use the mount manager program from a floppy diskette in drive A, **type** A:MNTMGR. If the mount manager program is from a volume mounted on unit D, **type** D:MNTMGR.

LOG ON 1

The first step in using a Corvus mass storage system
with the IBM Personal Computer is to log on to the
system. After users are logged on, they can use the IBM
Personal Computer to access information stored on
network drives. This chapter explains the log-on process.

Before attempting to log on, a user must have a Corvus
DOS 2.0 boot diskette, and a user name and password.
See the system manager to get a Corvus boot diskette
or user name.

1. Insert the Corvus boot diskette in the floppy drive.

Place the Corvus boot diskette in floppy drive A.

2. Turn on the computer.

After a moment the screen displays:

```
              CORVUS   SYSTEMS
              CONSTELLATION II

              (LOGON Vx.xx)  (NN)

    Please enter your name  __
```
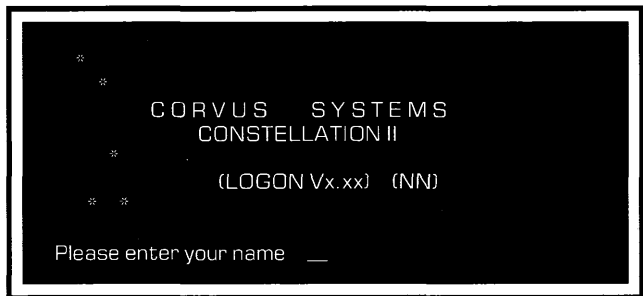
This screen is the Constellation II log-on
display which appears each time the
computer boots.

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3. Log on to the system with a user name and password.

Enter a user name and password to the prompts that appear in the log-on display. For example, if the user name is PAUL,

Type PAUL

Press [RETURN]

The screen displays:

```
Please enter your password:
```

If, for example, the password is BONJOUR,

Type BONJOUR

Press [RETURN]

After the password is entered, a row of dots appear across the screen. Next, the DOS 2.0 operating system log-on prompts appear, and the system prompt displays. The IBM PC is now ready to be used with the OmniDrive.

ACTIVATING VOLUMES | 2

Once a user is logged on, information stored on the OmniDrive™ network drive can be used. The storage space on the OmniDrive is divided into a series of defined areas called volumes. Volumes are like floppy diskettes in that they contain information such as text, data or programs.

The system manager gives each user access to certain volumes so that they can use information in the volume or store their work. Even though a user has access to a volume, the volume may not be usable. Before a volume can be used, it must be assigned a unit letter.

DOS uses unit letters to identify different volumes and equipment attached to the computer. If a volume lacks a unit letter, the operating system will not find the volume. Once a volume is assigned a unit letter, it is called a mounted volume, and is ready to be used.

The IBM Personal Computer running DOS allows a total of ten unit letters, A-J. When a unit letter is assigned to a volume or piece of equipment, it is reserved, and one less unit letter is available.

The IBM PC reserves unit letters A-B for floppy drives. Each floppy or disk drive thereafter reserves one unit letter. For example, an IBM PC with two floppy drives and a disk drive reserves unit letters A-C.

When the computer boots, unit letters are automatically reserved for equipment such as floppy or disk drives. Volumes previously mounted by the system manager also reserve unit letters.

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After these unit letters are assigned, two or more unit letters usually remain for users to mount volumes of their choice if they have access to any other volumes. To mount these volumes, use the mount manager program. The mount manager program is used in several ways:

- To activate a volume that is not mounted.
- To replace a mounted volume with a volume that is currently not in use.
- To change the status of a mounted volume.

This chapter describes how to use the mount manager program to manipulate volumes.

ENTERING THE MOUNT MANAGER PROGRAM

To enter the mount manager program:

Type n:MNTMGR2

Press RETURN

The letter **n,** is the unit letter of the volume containing the mount manager program.

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The screen display is similar to:

```
CORVUS MOUNT MANAGER UTILITY [x.xx]

Number of disk servers  :  2

Building access table for  :  SERVER1

MOUNT MANAGER UTILITY [x.xx]
(c) 1983, 1984 by Corvus Systems, Inc.

 User:  PAUL
 Server:  *
 Drive:  DRIVE1
-------------------------------------------------
C — Change Mount Status
L — List Units and Volumes
S — Select Drive
H — Help
E — Exit
-------------------------------------------------
Enter MOUNT MANAGER option:
```

In general, three options from the mount manager menu are used to mount a volume. If a user has access to volumes on several drives, then the "Select Drive" option is used to access the appropriate OmniDrive. Next, use the "List Units and Volumes" option to find which volumes are currently mounted, and which volumes need to be mounted. Finally, the "Change Mount Status" option is used to actually mount a volume.

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SELECTING THE DRIVE

This option allows the user to select a server and drive. The option includes a special feature—the asterisk (*). The asterisk is a wild card character that can be used to name all servers or all drives. Entering an asterisk for the server name automatically sets the drive name to an asterisk. This combination sets the mount manager utility to view all drives on the network.

1. Enter the select server and drive option.

From the mount manager utility main menu,

Press S

The screen display is similar to:

```
Active servers are  —

            SERVER0
            SERVER1
            *

     Enter server name:  SERVER0
```
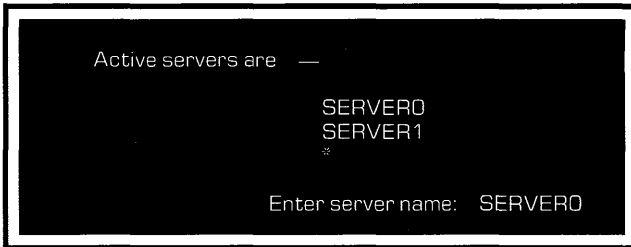
2. Enter the server name.

Type the name of the desired server.

Press [RETURN]

The screen display is similar to:

```
Drives accessible on server SERVER0:

                          Drive1
                          Drive2
                          ⁂

      Enter drive name:
```

3. Enter the drive name

Type the name of the desired drive.

Press [RETURN]

The screen displays the mount manager utility main menu.

LISTING VOLUMES

Use this listing to find what volumes are currently mounted, and volumes that are accessible but unmounted.

This option displays two separate lists. The first list only describes the volumes that are currently mounted. The second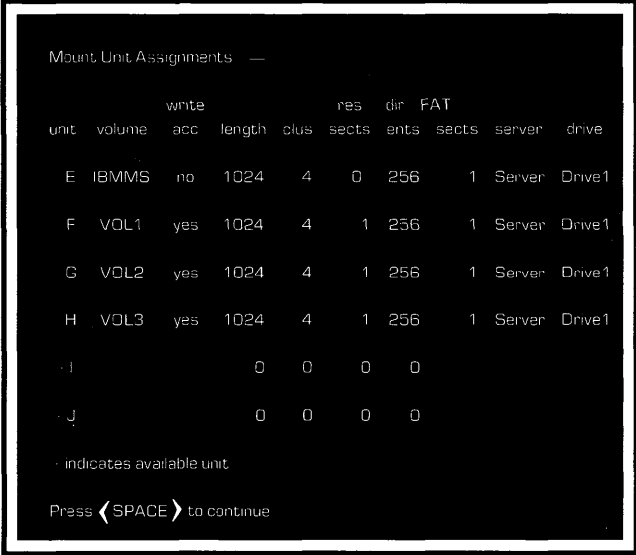 list displays both mounted volumes and volumes which are currently not mounted. Use the second list to find out which volumes need unit letters before they can be used.

The list volumes option can be used to list every mounted volume on every drive that is a part of the network.

1. List all mounted volumes.

From the mount manager main menu, **press** L

The screen display is similar to:

```
Mount Unit Assignments  —

                        write                    res   dir  FAT
        unit   volume    acc   length  clus  sects  ents  sects  server  drive

         E    IBMMS    no    1024    4     0    256      1   Server  Drive1

         F    VOL1     yes   1024    4     1    256      1   Server  Drive1

         G    VOL2     yes   1024    4     1    256      1   Server  Drive1

         H    VOL3     yes   1024    4     1    256      1   Server  Drive1

        · I                         0     0    0      0

        · J                         0     0    0      0

        · indicates available unit

        Press 〈 SPACE 〉 to continue
```

This listing displays only the mounted volumes. The following is a description of each column in the listing:

Unit   — This is the unit letter currently assigned to the volume.

Volume   — This is the name of the volume.

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Write Access — This is the current user's
read-write access to a
volume. Read-write access
lets a user change
information stored in the
volume as well as look at
information in the volume. A
user with read-only access
can only look at information
in the volume. For example,
the current user has read-
only access to volume IBMMS;
he cannot add to or change
information in the volume.

Length   — This is the size of the volume
in blocks.

Cluster Size — These are parameters that
Resv Sctrs   define how information is
Dir Entries   stored on the mass storage
FAT Sctrs   system. For more information,
refer to the *IBM Disk
Operating System* manual.

The number of FAT sectors
for a volume determines if
the volume can be mounted.
FAT sectors are discussed
later in this chapter.

Server   — This is the name of the server
connected to the mass
storage system that contains
the volume.

Drive   — This is the name of the mass
storage system that stores the
volume.

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To stop the volume listing, **press** ESC , and the screen displays the mount manager menu.

To list all the volumes that the current user name can access on a particular drive, **press** SPACE .

The screen is similar to:

```
Volumes Accessible  —

                write               res   dir   FAT
unit  volume    acc   length  clus  sects ents  sects  Server  Drive

 E    IBMMS     no    1024    4     0     256   1      Server  Drive1

 F    VOL1      yes   1024    4     1  .  256   1      Server  Drive1

 G    VOL2      yes   1024    4     1     256   1      Server  Drive1

 H    VOL3      yes   1024    4     1     256   1      Server  Drive1

      VOL4      yes   2048    4     1     256   1      Server  Drive1

      VOL5      no    1024    4     1     256   1      Server  Drive1

indicates unmounted volume

Press ⟨ SPACE ⟩ to continue
```

This describes all volumes accessible for the current user name. Note that some volumes have a dash in the unit column. These volumes are not mounted, and cannot be used until they are assigned a unit letter. For example, volumes VOL4 and VOL5 do not have unit letters. The "Change Mount Status" option is used to assign a unit letter to volume.

This listing remains the same from session to session unless modified by the system manager. The listing describes only volumes on the mass storage system, and does not include diskette drives.

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Note that this listing displays the number of FAT sectors for each volume.

Before a volume can be mounted, compare the number of FAT sectors for the volumes.

If a volume is replacing another volume on the same unit letter, the unmounted volume cannot have a greater number of FAT sectors than the volume it is replacing.

If a volume is mounted on an unused unit letter, the volume cannot have a greater number of FAT sectors than any other volume that is currently mounted.

To use a volume that is not currently mounted, write down the volume name, the volume's number of FAT sectors, and check which unit letters are currently not in use. Steps 2 and 3 in the next section require this information.

2. **Return to the mount manager main menu.**

Press [SPACE]

MOUNTING VOLUMES

To change a mounted volume from one unit to another, first unmount the volume from its present unit, then remount it on the desired unit.

Before attempting to mount a volume, check the number of FAT sectors for the volume. See the previous section titled "Listing Volumes" for more information. The mount manager main menu should be displayed on the screen.

1. Change the volume's mount status.

Press C

The screen displays:

```
Enter volume name:  _
```

2. Enter the volume name.

Type the name of the volume to be mounted and **press** [RETURN] .

If the volume to be mounted is on a different server and drive than the one currently being used, set the server and drive name to the location of the volume, or else use the asterisk for the server name to designate all servers and drives. Type the name of the volume to be mounted and **press** [RETURN]

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The screen display is similar to:

```
Location of Volume    —
                  Server:   SERVER1
                  Drive:    DRIVE1

Current Status of Volume    —
              Mount Status:    Unmounted

Enter New Status of Volume    —
         Mount Status (M/U):    U
```
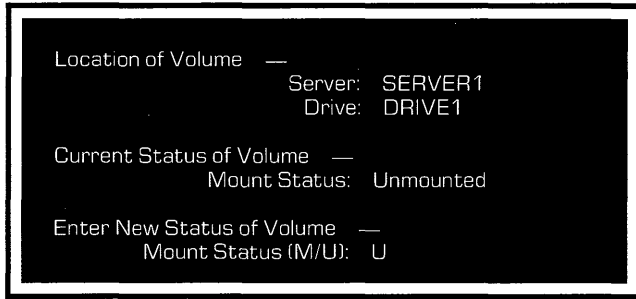
3. Mount the volume.

To mount a volume that is currently not mounted,

Press M

Press RETURN

To change the unit letter of a mounted volume the volume must first be unmounted. To unmount a volume,

Press U

Press RETURN

A volume can remain mounted if only the write access is being changed.

The screen display is similar to:

```
Mount Unit (E-J):
```

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Type the unit letter where the volume will be mounted and **press** RETURN . If a volume is currently assigned to the unit letter, it will be automatically unmounted. Never unmount the volume which contains the programs currently in use.

The screen displays:

```
Write Access (Y/N)?   Y                          o
```

4. Determine the write access to the volume.

To write to and read from the volume,

Press Y

Protect files by making access read-only. To protect files for the current session,

Press N

If you are mounting the volume in place of another volume, the screen display is similar to:

```
WARNING: Unit H is currently assigned volume:SERVER/DRIVE1/VOL1
Change volume status (Y/N)   ?
```

If you are mounting the volume on a free unit, there is no warning message. The screen simply displays:

```
Change volume status (Y/N)   ?
```

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5. Confirm the changes made.

If all desired changes are made,

Press Y

If the volume was mounted in place of another volume, the screen display is similar to:

```
Volume VOL1 unmounted

Volume VOL2 mounted

Press "C" to change another volume
press ⟨SPACE⟩to continue  __
```

If the volume was mounted on a free unit, the screen displays:

```
Volume VOL2 mounted

Press "C" to change another volume
```

6. Return to the mount manager main menu.

Press [SPACE]

The screen displays the mount manager main menu.

7. Exit the mount manager program.

Press E

The system prompt appears.

PROTECTING VOLUMES

Sometimes a volume has read-only access to protect information in the volume. For example, when a file is transferred from one volume to another, the source volume may have read-only access. This way a file can be read, but cannot be accidentally destroyed by writing over it.

There are two ways to protect volumes using the mount manager program. A volume can be unmounted so that information cannot be read at all, or the volume can have read-only access and information cannot be written to or stored in the volume. Use the change mount status option from the mount manager main menu to change the status of a volume to unmounted or read-only.

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USING THE PIPES AREA | **3**

The Omninet™ local area network allows users to share the same printer and to exchange information electronically. A special area on the mass storage system called the pipes area lets users print files with a printer that is not attached directly to their computer. The pipes area is also used to to exchange information between users on the network.

The pipes area acts as a transfer station for information sent between different users and devices on the network. Information sent to the pipes area remains there until it is retrieved. Information can have several destinations from the pipes area. Information can be sent to a network printer, or recovered by another user.

Pipes are the actual mechanism which transfers information to and from the pipes area. A pipe is like a file in that it contains information. A pipe is opened, and the file is transferred in chunks into the pipe. When the pipe contains the entire file, it is closed, and is ready to be retrieved from the pipes area.

Users must select a pipe name when they send information to the pipes area. Pipe names serve as labels for the destination of a file. To send a file to a network printer, the user must select the pipe name assigned to the network printer. When a file is sent to another user on the network, the user receiving the file must know the correct pipe name to retrieve the file from the pipes area.

When a file is sent to be printed on a network printer, the information is automatically retrieved from the pipes area, and sent to the printer. When a file is exchanged between users on the network, the user receiving the file must use the despool program to retrieve the file from the pipes area. To retrieve a file from the pipes area, go the section "Checking for Pipes."

There are several ways to send files to the pipes area. The spool program is one method for sending files to the pipes area. The spool program is discussed later in this chapter.

Many users may find that the easiest way to send files to the pipes area is to use print commands that are already available in many application programs. Usually, these print commands are used to print files to a printer that is attached directly to the computer. A special program called the spool driver enables print commands to send files to the network pipes area. The spool driver is dicussed next.

USING THE SPOOL DRIVER

The spool driver program is activated by a special file on the Corvus boot diskette called CONFIG.SYS. To use the spool driver, simply log on to the computer. The spool driver is automatically installed when the computer boots. Once the spool driver is installed, the print commands in programs may be used to send files to the network pipes area. Consult the program manual for more information about specific print commands.

The DOS PRINT and COPY commands may
also be used to send files to the network pipes
area. For example, assume a user wants to
send a file called REPORT.TXT to the pipes
area. Either of the following commands could
be entered to the DOS system prompt:

PRINT REPORT.TEXT

COPY REPORT.TEXT PRN

For more information on how to use the
PRINT and COPY commands, see the *IBM
Disk Operating System* manual.

The spool driver assigns the same file name to
each file it sends to the pipes area. The user
name and network station number are also
printed on files so that users may identify
their files.

Depending on the organization of the
network, it may be necessary to change
certain parameters of the spool driver. When
the system manager makes the Corvus boot
diskettes, values are assigned to these
parameters.

Most users should find that the spool driver
parameters are set to satisfy their
requirements. Other users may need to
change the parameters to send files to
different network printers or to other users on
the network. In particular, users will need to
alter the spool driver to print files to a printer
attached directly to their computers.

Use the change spool driver utility to change
the value of the parameters.

CHANGING SPOOL
DRIVER PARAMETERS

The change spool driver utility is used to alter spool driver parameters for the current session. When the computer reboots, the parameters return to their original values.

1. Enter the change spool driver program.

Type n:CSD.COM

The letter **n** is the unit letter of the volume containing the change spool driver utility.

Press [RETURN]

The screen display is similar to:

```
CHANGE SPOOL DRIVER [x.xx]
(c) 1984, CORVUS SYSTEMS, INC.
-----------------------------------------------------------------------
CURRENT PARAMETERS

Pipe Name:  PRINTER      File Name    :  OUTPUT.TEXT
Server   :  SERVER0      Print Device :  N
Timeout  :  20           Control String: :Z:Z
-----------------------------------------------------------------------
MENU

C — Change Control String      S — Change Spool Server
D — Change Print Device        T — Change Timeout
E — Close Pipe
F — Change File Name           H — Help
P — Change Pipe Name           X — Exit
-----------------------------------------------------------------------
Please select an option:
```

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The upper portion of the screen displays the current parameter values. The lower portion displays the options which are used to change parameter values.

2. Select the parameter.

Press the letter which corresponds to the parameter that will be changed.

3. Choose the new value.

A prompt will request the new value for the parameter. Enter the new value and **press** RETURN . The specified parameter is changed, and the new value appears in the upper-portion of the screen display.

The parameters and their values are described below.

D — The D parameter determines if the file is sent to the network pipes area, or to a printer attached directly to the computer.

The parameter may have two values: N for network printer, or L for local printer. For example, to print a file to a printer attached to the computer, enter L to the prompt.

P — Use the P parameter to set the pipe name to which the file is sent. To print a file on a network printer, enter the pipe name assigned to the printer.

To send a file to another user on the network, enter a unique pipe name. A pipe name can be any name up to eight characters that begins with a letter. Be sure that the user receiving the file knows the correct pipe name.

F — Use the F parameter to change the file name that appears on the printout of the file. A file name can be any name up to 12 characters.

S — Use the S parameter to identify the server controlling the drive which contains the pipes area. Enter the server name as the parameter value.

C — Use the C parameter to define a series of characters called a control string. The application program sends the control string to indicate the end of the file. When the spool driver receives the control string, it closes the pipe.

The control string can have up to three characters. Two types of characters may be used in a control string:

(1) A caret (^) followed by one letter (A-Z). For example, ^T is a valid character.

(2) The letter E which represent the ESC character.

These characters can be entered in any order or combination. The following are examples of valid control strings:

```
^E^A^T
^R^UE
^G^O
 E
^Y
```

Certain application programs and printers may place limitations on the type of control string that may be used. Refer to the program or printer manual for more information.

While the C parameter is recommended, the T and E parameters are alternative ways to close a pipe. Any combination of the three methods may be used to close a pipe.

T — Use the T parameter to set the length of time that the spool driver waits before closing the pipe. If no further activity occurs in the pipe at the end of the time interval, the pipe is closed. Enter a number that represents the time interval in seconds. For example, to set the time interval to 20 seconds, enter 20 to the prompt.

Setting the time interval to 0 disables the mechanism. In this case, either the C or E parameters will be used to close the pipe.

A busy network may require more time to send a file to the pipes area. In this instance, set a longer time-out.

If the time interval is set too long, a second file may be sent to the same pipe before the pipe is closed. In this case, two separate files would be printed as one printout.

If the time interval is not long enough, the pipe may be closed before the entire file is sent to the pipes area. The file would then be printed on two separate printouts and data may be lost.

E — Use the E option to close a pipe after exiting an application program.

To use the E option set T:O in the CONFIG.SYS file. After exiting an application program run the change spool driver program and **press** E.

This method closes the pipe manually.

4. Exit the change spool driver utility.

Press X

The screen displays the DOS system prompt.

If certain parameters are consistently reassigned new values, see the system manager about editing the CONFIG.SYS file on the Corvus boot diskette to reflect the new values.

USING THE SPOOL PROGRAM

The spool program is used to send files to the pipes area. Once a file is in the pipes area, it can either be sent to the network printer, or be retrieved by another user.

Some text may require formatting by a text editor or word processor before the text can be printed. Once the text is formatted, save it in a file. Then the file is ready to spool to a network printer.

1. Enter the spool program.

Type n:SPOOL

Press [RETURN]

The letter **n** is the unit letter of the volume containing the spool program.

The screen displays:

```
Copyright 1982, 1983 Corvus Systems, Inc.
       All Rights Reserved

Corvus Spool Utility [x.xx]
Main Menu
---------------------------------------------------------------
   S — Spool A File

   C — Change Spool Paramenters

   D — Display Pipes

   H — Help

   E — Exit
---------------------------------------------------------------
Please select an option:  __
```

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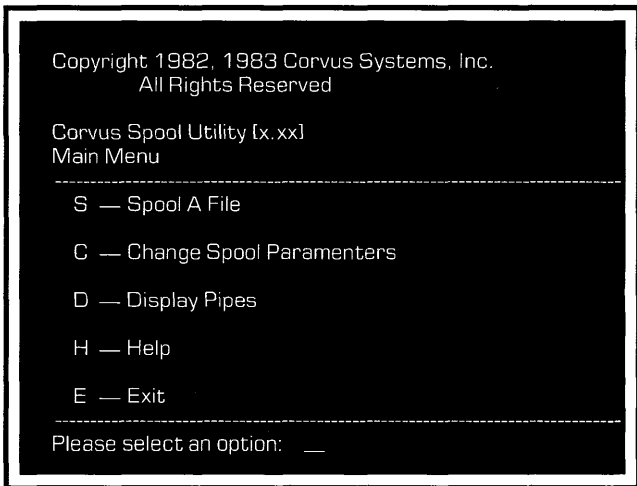
2. Check the pipe name.

The pipe name determines the destination for the file. The spool program automatically suggests the pipe name PRINTER. To send a file to a network printer assigned the pipe name PRINTER, skip directly to Step 7.

The system manager assigns each network printer a unique pipe name. To send a file to a network printer with a pipe name other than PRINTER, change the pipe name.

The pipe name must also be changed to send a file to another user on the network.

3. Change the pipe name.

Press C

The screen displays the change parameters menu.

```
Corvus Spool Utility [x.xx]
Change Spool Parameters
-----------------------------------------------------------------
  P — Pipe Name         :   PRINTER
  L — Lines per Page     :   55
  C — Chaining Symbol    :   (*I
  N — New Page Symbol :   (*P
  T — Tab Length         :   8
  S — Strip high bit     :   FALSE
  F — File Type          :   TEXT
  E — Exit to Main Menu
-----------------------------------------------------------------
Please select an option: __
```

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The current pipe name is displayed next to the pipe name option.

4. Select the pipe name option.

Press P

The screen displays:

```
Pipe Name (up to 8 characters): __
```

5. Name the pipe.

To send a file to a network printer, enter the pipe name assigned to the printer and **press** ⎡RETURN⎤ .

To send a file to another user, enter a pipe name. A pipe name can be any name up to eight characters. The same pipe name must be used to despool the file. Make sure that the pipe name is different from the printer's pipe name. Also, be sure that a user receiving a file knows the correct pipe name to despool. After typing the pipe name, **press** ⎡RETURN⎤ .

Other options on the change parameters menu are used to alter the way the file is spooled. For example, if a user is sending a data file to another user, the file type option must be changed. See the section "Changing Spool Parameters" to find out more about changing spool parameters.

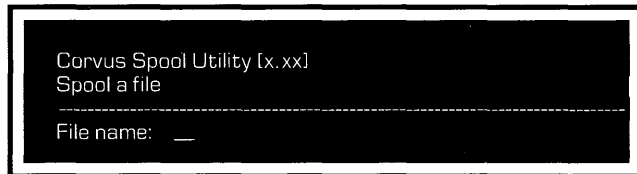# 6. Return to the spool program main menu.

Press E

The screen displays the spool program main menu.

7. Select the spool option.

Once the correct pipe name is entered and other options are changed, the file is ready to be sent to the pipes area. To send the file to the pipes area,

Press S

The screen displays:

```
Corvus Spool Utility [x.xx]
Spool a file
---------------------------------------------
File name:  _
```

8. Enter the file name.

Type the name of the file to be printed and **press** [RETURN] .

The screen displays:

```
Message:           o
```

9. Add a message to the file.

Messages can only be added to files being sent to a network printer. If the file is being sent to another user on the network, **press** RETURN and continue to Step 10.

To add a message to a file being sent to a network printer, type any message up to 80 characters and **press** RETURN . For example, enter a user name and the date. The message is printed on the title, or header page of the printed file.

The program now starts spooling the file to the pipes area. While the file is being spooled, a series of dots appear across the screen. When spooling is complete, the screen display is similar to:

```
Spooling file to pipe PRINTER [1]

. . . . . . . . . . . . . . . .
15 blocks written to pipe PRINTER [1]
-----------------------------------------------------------
CORVUS'Spool Utility [x.xx]
Spool a File
-----------------------------------------------------------
File Name:  __
```

10. Spool another file or exit the program.

To spool another file, type the new file name and **press** RETURN .

To exit,

Press RETURN

The screen displays the spool utility main menu.

Press E

The screen displays the system prompt.

If the file is sent to a network printer, the file is automatically retrieved from the pipes area and printed as soon as the printer becomes available. The number of files waiting to be printed determines the amount of time before a file is printed. If the file does not appear, see the system manager.

If a file is sent to another user, the file will remain in the pipes area until it is retrieved by the other user. Be sure that the other user knows the pipe name to which the file was spooled. To retrieve a file sent by another user to the pipes area, go to the section "Checking for Pipes."

CHANGING SPOOL PARAMETERS

Several parameters affect how a file is spooled. These parameters can be changed by entering new values before a file is spooled. Follow the steps below to change the parameter values.

1. Enter the spool program.

From the system prompt,

Type n:SPOOL

Press RETURN

The letter **n,** is the unit letter of the volume containing the spool program.

The screen displays:

```
Copyright 1982, 1983 Corvus Systems, Inc.
        All Rights Reserved

Corvus Spool Utility [x.xx]
Main Menu
-----------------------------------------------
  S — Spool a File
  C — Change Spool Parameters
  D — Display Pipes

  H — Help
  E — Exit
-----------------------------------------------
Please select an option:  __
```

2. Change the spool parameters.

Press C

The screen displays:

```
Corvus Spool Utility [x.xx]
Change Spool Parameters
-----------------------------------------------------------------
    P — Pipe Name          :    PRINTER
    L — Lines Per Page      :    55
    C — Chaining Symbol     :    (*I
    N — New Page Symbol     :    (*P
    T — Tab Length          :    8
    S — Strip high bit      :    FALSE
    F — File Type           :    TEXT
    E — Exit to Main Menu
-----------------------------------------------------------------
  Please select an option:__
```

3. Select the parameter.

Press the letter which corresponds to the parameter to be changed. For example, to change the chaining symbol, **press** C.

4. Choose the new value.

After a parameter is chosen, the program shows the current value for the parameter. Type the new value and **press** RETURN . The parameters and their values are described below.

Pipe Name — This is any alphanumeric name up to eight characters that begins with a letter. The appropriate pipe name can direct a file to any printer on the network. A unique pipe name should be used when a file is sent to another printer. The system manager can provide a list of pipe names for network printers.

Lines per Page — This is the total number of lines that a printer prints on a page. To print continuously without skipping over page boundaries, set lines per page to 0. This applies only to text files.

Chaining Symbol — This causes the spool program to look for a file name immediately after this symbol wherever it appears in the text. The file indicated by the file name is then inserted at the place where the symbol appeared in the text. Neither the chaining symbol nor the file name will appear in the spooled text. If the spool

program finds no file name after the chaining symbol, it prints an error message and continues spooling. The chaining symbol and file name can be any string of up to 80 characters.

New Page Symbol — This causes the printer to skip to the top of the next page. The symbol can be any string up to 80 characters.

Tab Length — This sets the tab column positions and causes the spool program to insert spaces until it reaches the next tab column. Starting at the left margin, tabs are set according to the tab length specified. For example, a tab length of 8 would position text eight spaces to the left of the current position. Valid tab lengths are 1 to 133.

Strip high bit — This option strips off the high bit of every character of a text file that is spooled. If the lines of a spooled text file are truncated or if some characters appear incorrectly, stripping the high bit may correct this problem. This selection is normally set to "False" which means the high bit will not be stripped. To strip the high bit, **press** S.

File Type   — This specifies whether the file
                                   being spooled is text or data. The
                                   spool program formats text files
                                   using the lines per page, chaining
                                   symbol, new page symbol and
                                   tab length parameters. Data files
                                   are spooled without formatting
                                   of any kind. This allows binary
                                   data to be sent between users in
                                   different operating systems. (See
                                   Chapter 4, "Exchanging
                                   Information Between Users.")

5. Return to the spool program main menu.

After the desired parameters are changed,

Press E

The screen displays the spool utility main
menu.

6. Spool the file.

CHECKING FOR PIPES

This section explains how to check if any pipes with a specific pipe name had been sent to the pipes area.
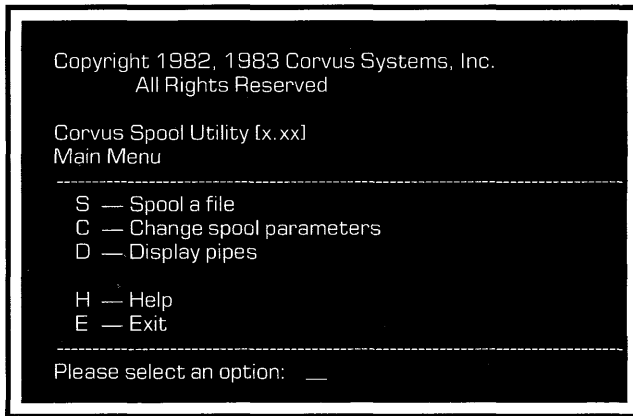
1. Enter the spool program.

From the system prompt,

Type n:SPOOL

Press [RETURN]

The letter **n,** is the unit letter of the volume containing the spool program.

The screen displays:

```
Copyright 1982, 1983 Corvus Systems, Inc.
       All Rights Reserved

Corvus Spool Utility [x.xx]
Main Menu
------------------------------------------------------------
S — Spool a file
C — Change spool parameters
D — Display pipes

H — Help
E — Exit
------------------------------------------------------------
Please select an option: __
```

2. Display the pipe names.

Press D

The screen displays:

```
Corvus Spool Utility [x.xx]
Display pipes
-----------------------------------------------------
Pipe Name: __
```

3. Enter the pipe name.

Type the pipe name to which the file was spooled and **press** [RETURN] . The screen will list all pipes in the pipes area with that pipe name. For example:

```
2. PAUL   Closed  ---  Contains data  84 blocks
```

This shows that one pipe named PAUL exists in the pipes area. This file is in pipe two. The pipe is closed, and is ready to be read. Information cannot be read from open pipes; they are either being read from or being written to the pipes area.

4. Return to the spool program main menu.

Press [RETURN]

The screen displays the spool program main menu.

5. **Exit the spool program.**

Press E

The system prompt appears.

RECEIVING FILES

1. **Enter the despool program.**

Type n:DESPOOL

Press [RETURN]

The letter **n,** is the unit letter of the volume containing the despool program.

The screen displays:

```
Copyright 1982, 1983 Corvus Systems, Inc.
         All Rights Reserved

Corvus Despool Utility [x.xx]
Main Menu
--------------------------------------------------------
  D — Despool a file

  C — Change despool parameters

  H — Help

  E — Exit
--------------------------------------------------------
Please select an option:  __
```

2. Change the despool parameters.

Press C

The screen displays the change parameters menu:

```
Corvus Despool Utility [x.xx]
Change Despool Parameters
----------------------------------------------------------------
P — Pipe name                          : PRINTER
O — Output device                      : PRINTER
L — Do you want < LF > after < CR >     : YES
S — Single page printing               : NO
E — Exit to main menu
----------------------------------------------------------------
Please select an option:  __
```

3. Select the pipe name option.

Press P

The screen displays:

```
Pipe name:  __
```

4. Enter the pipe name.

Type the pipe name to which the file was spooled and **press** [RETURN] . The screen displays the change parameters menu.

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5. Decide where to despool the file.

Press O

The screen displays:

```
Printer, File, Console:  _
```

Files can be despooled to one of three
locations: a local printer, the console, or a file.

To despool to a printer, **press** P to select the
printer option. The L and S despool
parameters are used to despool a file to a
printer. Consult the system manager for more
information.

To display the pipe to the screen without
saving it, **press** C to select the console option.

Only text files can be despooled to the
console; despooling a data file to the console
causes an error message. Data files must be
despooled to either a printer, or a file.

To place the pipe in a file, **press** F for file. This
is usually the best choice, because a pipe
disappears after it is despooled. Once a pipe is
despooled to the printer or screen, it cannot
be placed into a file.

Press F

6. Return to the despool program main menu.

Press E

The screen displays the despool program main menu.

7. Despool the pipe to a file.

Press D

The screen display is similar to:

```
Currently Despooling Pipe Named  :  PAUL
Pipe Number                      :  2
Spooled Filename                 :  RPT.TEXT
Filename to despool to           :  RPT.TEXT
```

The screen suggests a filename to use for despooling. In this example, the suggested filename is, "RPT.TEXT," the same name as the file that was originally spooled. To change the name, type a volume and file name and **press** RETURN . The despool program creates a file in the volume specified and places the despooled information in it.

For example,

Type A:RPT1.TEXT

Press RETURN

The screen display is similar to:

```
. . . . .
84 Block(S) Read from pipe 2 named PAUL
```

If there is more than one pipe with the same name, the program prompts for the next file name. Otherwise, the screen display is similar to:

```
Currently searching for Pipe named  :  PAUL
Press any key to escape . . .
```

8. Return to the despool program main menu.

Press any key on the keyboard.

The screen displays the despool program main menu.

9. Exit the despool program.

Press E

The system prompt appears.

BACKUP TO FLOPPY | 4

This chapter explains how to use the Corvus
backup-to-floppy program to save an entire volume on
diskettes. This chapter also explains how to restore a
volume from diskettes.

GETTING READY

The backup process requires enough
formatted diskettes to hold all the
information in the volume being backed up.
The number of diskettes varies according to
the size of the volume. Use the table below to
estimate the number of diskettes needed to
back up the volume.

Volume Size

Floppy Drive Format	512 blocks	1024 blocks	2048 blocks (1MB)	4096 blocks (2MB)
360KB	1 diskettes	2 diskettes	3 diskettes	6 diskettes

For example, to back up an 1800-block
volume with a 360KB floppy drive requires
between two to three diskettes. Estimate on
the high side and format three diskettes.

To find out the size of a volume, follow steps
1 and 2 of the section "Set Backup Options"
and **press** L to get a listing of the volumes
and their respective sizes.

BACKUP-TO-FLOPPY

Backing up a volume to floppy diskettes is a three-part process. First format enough diskettes using the DOS format program. Second set the backup options. Third, once the diskettes are formatted, and the backup options are set, back up the volume.

SET BACKUP OPTIONS

1. Enter the backup-to-floppy program.

After formatting enough diskettes, boot the computer.
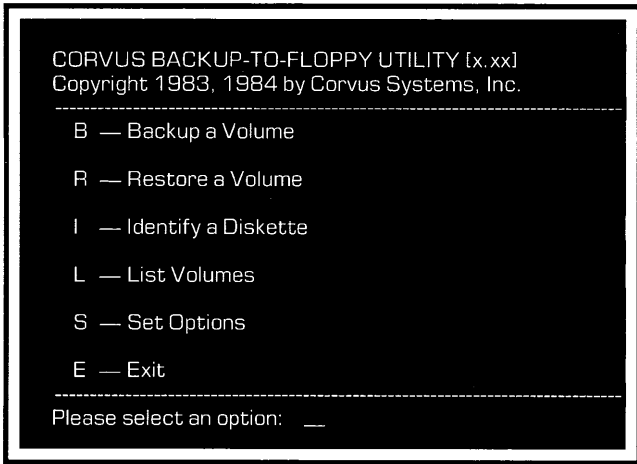
Type IBMBACKUP

Press [RETURN]
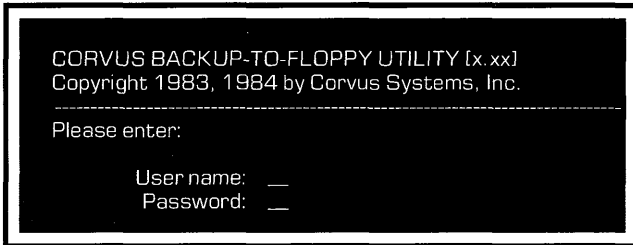
The screen displays:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
Copyright 1983, 1984 by Corvus Systems, Inc.
-----------------------------------------------------
Please enter:
        User name:  __
        Password:  __
```

2. Enter a user name and password.

Type the user name and **press** RETURN .

Type the password and **press** RETURN .

If there is no password, **press** RETURN in response to the password prompt.

The screen displays the backup-to-floppy main menu:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
Copyright 1983, 1984 by Corvus Systems, Inc.
------------------------------------------------------------
    B — Backup a Volume

    R — Restore a Volume

    I  — Identify a Diskette

    L — List Volumes

    S — Set Options

    E — Exit
------------------------------------------------------------
Please select an option: __
```

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3. Set the verification and password protection options.

Press S

The screen displays:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
              Set Options
--------------------------------------------
        Verification (Y/N):   N
    Password Protection (Y/N):  Y
```
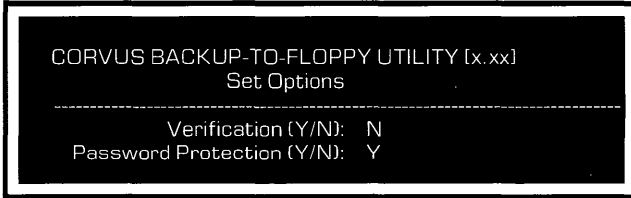
The verification option checks that information is correctly copied from the volume to diskette.

The password protection option prevents other users from reading the backup diskettes. If a diskette is protected, the user name and password must be entered before a volume can be restored from diskettes.

To select an option, **press** Y to the appropriate prompt, and **press** RETURN .

The screen displays:

```
OK to set options (Y/N)?   Y
```
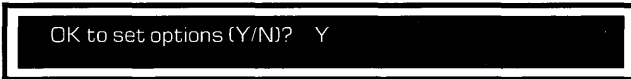
4. Confirm the option selections.

To set the current option selections,

Press RETURN
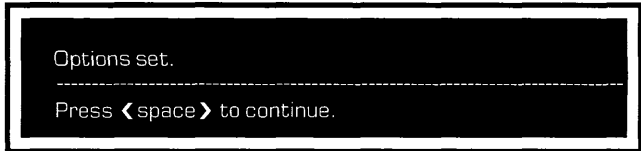
The screen displays:

```
Options set.
---------------------------------------------------------------
Press 《 space 》 to continue.
```

5. Return to the backup-to-floppy main menu.

Press SPACE
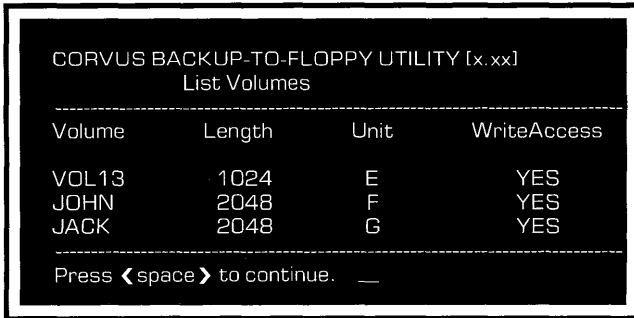
The screen displays the backup-to-floppy main menu.

BACK UP THE VOLUME

1. Decide which volume to back up.

Press L

The screen display is similar to:
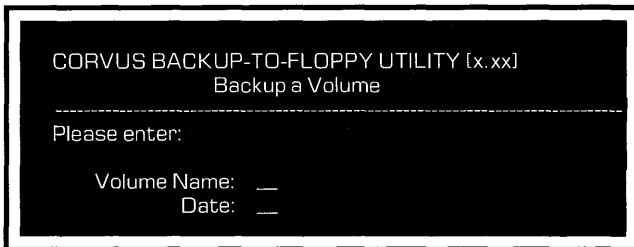
```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
            List Volumes
-------------------------------------------------
Volume      Length      Unit        WriteAccess

VOL13       1024        E           YES
JOHN        2048        F           YES
JACK        2048        G           YES
-------------------------------------------------
Press <space> to continue. __
```

Decide which volume to back up, then **press**
[SPACE] . The screen displays the
backup-to-floppy main menu.

2. Select the backup option.

Press B

The screen displays:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
            Backup a Volume
-------------------------------------------------
Please enter:
        Volume Name: __
              Date: __
```

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3. Enter the volume name and the date.

Type the name of the volume and **press** [RETURN] . Type the date and **press** [RETURN] . For example,

Type VOL13

Press [RETURN]

Type 1-04-84

Press [RETURN]

The screen display is similiar to:

```
Searching for volume VOL13
Found volume VOL13
Insert formatted VOL13-1 diskette in drive A.
Press < space > after inserting diskette.  _
```

4. Label the first diskette and begin the backup process.

The first backup diskette should show the name of the volume followed by -1, for example, VOL13-1. Proper labeling helps keep the backup diskettes in proper sequence. Place the label on the diskette, and insert it in drive A.

Press [SPACE]

The screen display is similar to:

```
Checking capacity of the floppy drive . . . 360KB
Creating Floppy # 1
This backup requires n Diskettes.
```

The **n** in the last prompt represents the
number of diskettes required to back up the
volume. The program begins to copy data
from the Corvus volume to the first backup
diskette. As each block of data is copied, a dot
appears on the screen. When the first diskette
is full, the screen display is similiar to:

```
Insert formatted VOL13-2 Diskette in drive A.
Press ⟨ space ⟩ after inserting diskette.   __
```

5. Check the number of formatted diskettes.

In step 4 the screen indicated how many
diskettes are required for the backup. If there
are not enough formatted diskettes, **press**
[ESC] , format more diskettes, and start the
program over from the beginning.

If there are enough diskettes, continue to the
next step.

6. Complete the backup process.

Make a diskette label that includes the Corvus volume name, followed by -2. Place the label on a formatted diskette, then place it in drive A.

Press [SPACE]

The backup process continues. The program will request more diskettes as required. Label each diskette in a similar manner to the first two diskettes.

When all information has been stored on diskettes, the screen displays:

```
Volume backup complete.
----------------------------------------------------------
Press ⟨ space ⟩ to continue.  __
```
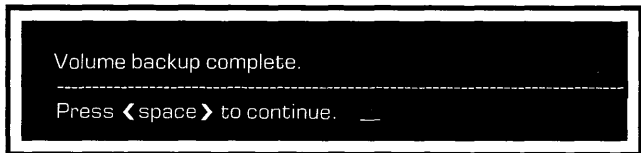
7. Exit the backup-to-floppy program.

Remove the last diskette used during backup.

Press [SPACE]

The screen displays the backup-to-floppy main menu.

Press E

The screen displays the system prompt.

RESTORE FROM FLOPPY

Restoration is a three-part process. First set the restoration options. Second, confirm that the backup diskettes contain the correct volume. Third, once the options are set and the diskettes confirmed, begin the restoration.

SET RESTORATION OPTIONS

1. Enter the backup-to-floppy program.

After formatting enough diskettes, boot to the Corvus Constellation II log-on message and log on with your user name and password. When the screen displays the operating system prompt,

Type IBMBACKUP

Press ⌜RETURN⌝
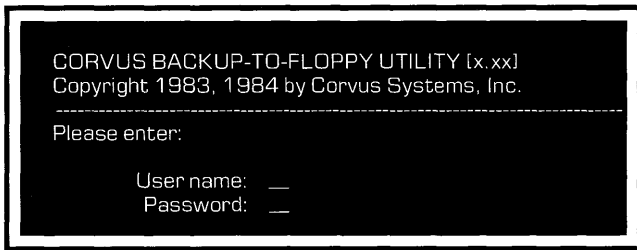
The screen displays:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
Copyright 1983, 1984 by Corvus Systems, Inc.
-------------------------------------------------------
Please enter:
            User name:   _
            Password:   _
```

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2. Enter a user name and password.

Type the user name and **press** RETURN.

Type the password and **press** RETURN.

If there is no password, **press** RETURN in response to the password prompt.

The screen displays the backup-to-floppy main menu:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
Copyright 1983, 1984 by Corvus Systems, Inc.
------------------------------------------------------------
     B  —  Backup a volume

     R  —  Restore a volume

     I  —  Identify a diskette

     L  —  List volumes

     S  —  Set options

     E  —  Exit
------------------------------------------------------------
Please select an option:  __
```

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3. Set the verification and password options.

Press S

The screen displays:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
                Set Options
------------------------------------------------
         Verification (Y/N):   N
         Password Protection (Y/N):   Y
```
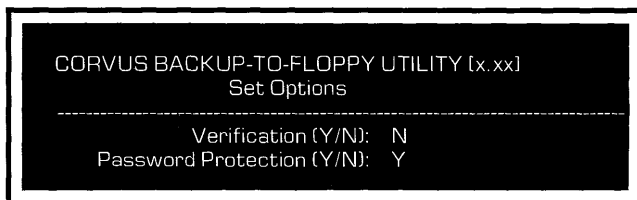
The verification option checks that information is copied correctly from the diskettes to the volume.

To verify the information, **press** Y and **press** [RETURN] . Since the password protection option does not apply to restoration, **press** [RETURN] .

The screen displays:

```
Ok to set options (Y/N)?   Y
```
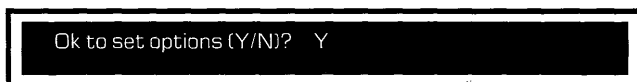
4. Confirm the option selections.

To confirm the options, **press** [RETURN] .
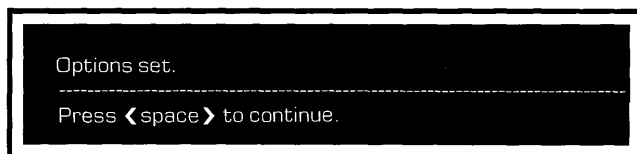
The screen displays:

```
Options set.
--------------------------------------------------
Press ⟨ space ⟩ to continue.
```

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5. Return to the backup-to-floppy main menu.

Press [SPACE]

The screen displays the backup-to-floppy main menu.

IDENTIFY THE VOLUME

1. Confirm that the diskettes contain the proper volume.

To verify that the proper information is restored to the volume, select the identify option. This option also provides the sequential order of the floppies in case backup diskettes were accidentally mixed up.

Press I

The screen displays:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
            Identify a Diskette
------------------------------------------------------------
Insert diskette in drive A.
Press < space > after inserting diskette.  _
```

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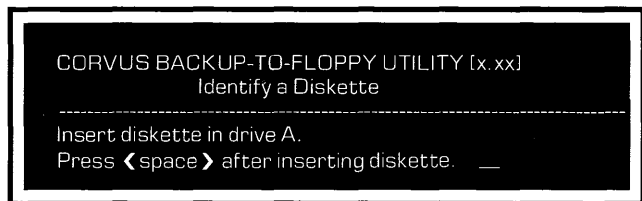
2. Insert the first diskette in drive A.

Place the first diskette created during the backup process ([VOL13]-1) in diskette drive A.

Press [SPACE]

The screen display is similar to:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
          Identify a Diskette
-----------------------------------------------
     Volume Backed Up:   VOL13
       Date of Backup:   1-04-84
          User Name:     PAUL (protected)
  Size of Volume (blocks):  1024
Total number of Diskettes:  5
  Number of this Diskette:  1
-----------------------------------------------
Press < space > to continue.  __
```

If the diskette contains the desired volume, note the size of the volume and

Press [SPACE]

The screen displays the backup-to-floppy main menu.

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3. Determine the name of the volume which the diskettes will restore.

Press L

The screen display is similar to:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
              List Volumes
------------------------------------------------------
Volume        Length       Unit        WriteAccess

VOL13         1024         10             YES
JOHN          2048         11             YES
JACK          2048         12             YES
------------------------------------------------------
Press ⟨ space ⟩ to continue.  __
```

If write access is available for the user, and the length of the volume is equal to the length of the volume to be restored from diskette,

Press [SPACE]

The screen displays the backup-to-floppy main menu.

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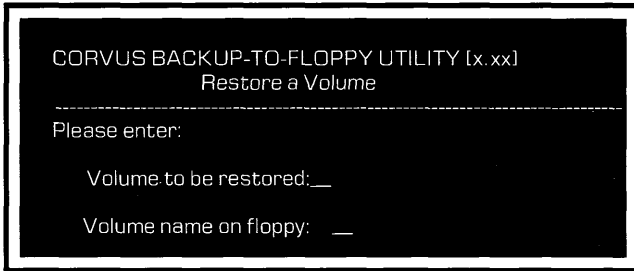
RESTORE THE VOLUME

1.

Restore the information to the volume.

Press R

The screen displays:

```
CORVUS BACKUP-TO-FLOPPY UTILITY [x.xx]
             Restore a Volume
-----------------------------------------------------
Please enter:

     Volume to be restored:__

  Volume name on floppy:   __
```

Information can be restored to any volume. The volume to be restored must be the same size as the backed up volume.

Type the name of the volume on the Corvus mass storage system to be restored and the name of the volume on the floppy being restored. Follow each name by ⌈RETURN⌋ .

If the backup diskettes are protected, the current user name and password must be identical to the name and password used during the backup.

If all security checks are passed, the screen display is similar to:

```
Searching for Volume VOL13
Found Volume VOL13

Insert VOL13-1 Diskette in drive A.
Press ⟨ space ⟩ after inserting diskette.  __
```

Place the first diskette from the backup into drive A.

Press [SPACE]

The screen displays:

```
Checking capacity of the floppy drive . . .
```

Restoration begins. As each block of data is copied from the diskette drive to the volume, a dot appears on the screen. After the first diskette is copied, the screen display is similiar to:

```
Insert VOL13-2 diskette in drive A.
Press ⟨ space ⟩ after inserting diskette.  __
```

2. Place the requested diskette in diskette drive A.

Press ⌷SPACE⌷

Restoration continues. The program will request each diskette in the order created during the backup.

When all information has been restored, the screen displays:

```
Volume restoration complete.
----------------------------------------------------------
Press < space > to continue.  __
```

3. Exit the backup-to-floppy program.

Remove the last diskette used during restoration.

Press ⌷SPACE⌷

The screen displays the backup-to-floppy main menu.

Press E

The screen displays:

```
Please reboot your computer.
```

4. Reboot the computer.

Hold down CTRL and ALT and

press DEL

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