PERSONAL WORKSTATION USER GUIDE

THE CORVUS CONCEPT

CORVUS SYSTEMS

DISCLAIMER OF ALL WARRANTIES & LIABILITIES

NOTICE

Corvus Systems, Inc. reserves the right to make changes in the product described in this manual at any time without notice. Revised manuals and update sheets will be published as needed and may be purchased by writing to:

Corvus Systems, Inc.
2029 O'Toole Avenue
San Jose, CA 95131

Telephone: (408) 946-7700
TWX   910-338-0226

Mirror® patent pending, The Corvus Concept,™ Transporter,™ Corvus OMNINET,™ Corvus Logicalc,™ Time Travel Editing,™ EdWord,™ Constellation,™ Corvus,™ Corvus Systems,™ Personal Workstation,™ Tap Box,™ Passive Tap Box,™ Active Junction Box,™ Omninet Unit™ are trademarks of Corvus Systems, Inc.

FCC WARNING

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

PERSONAL WORKSTATION
USER GUIDE

THE CORVUS CONCEPT

CORVUS CONCEPT™ is a trademark of Corvus Systems, Inc.

Workstation

Table of Contents

```
                                                              |
                                                              |
                                               SCOPE          |
                                                              |
                                                              |
```

THE NEXT GENERATION OF COMPUTING

Congratulations! With the Corvus Concept Personal
Workstation, you have entered the next generation of
computing.

We call the Corvus Concept a Personal Workstation
because it was first conceived as a user interface to
our local network, the Corvus Omninet. Adding it to
a network with other Concepts or different brand of
computers takes only a simple connection of twisted
pair cable. It is as easy as hooking up a hi-fi
speaker.

The Concept can also serve as a powerful stand-alone
computer; its advanced 16-bit microprocessor, swivel-
screen display capabilities, and other built-in
features make it an ideal operator's interface for
workprocessing and data processing.

PURPOSE AND ORGANIZATION

This guide is intended to give a thorough overview of
the Concept Personal Workstation. It is intended as an
introduction to computing, to this system, and as a
reference guide to be used whenever a question arises
pertaining to the Concept.

The guide is divided into six chapters covering the
following subjects:

        CHAPTER 1 -- Instructions on setting up the
                     system, powering on, and
                     installing Corvus software.

CHAPTER 2 -- Familiarization with the
Concept keyboard and display
monitor, and the uses of the
function keys, modifier keys,
cursor keys, and display
control keys.

CHAPTER 3 -- In-depth instruction on the
function keys, the operating
system, file management,
user-definable keys, and
display screen management.

CHAPTER 4 -- Instructions on using system
utilities, including system
management, formatting disk-
ettes, spooling, despooling,
and volume management.

CHAPTER 5 -- Details the methods of load-
ing, creating, and editing
character sets.

CHAPTER 6 -- How to make peripheral connec-
tions, boot types, and changing
screen orientation.

CONVENTIONS

The word "Type" is used throughout this guide to mean
that two or more characters are to be entered on the
Concept keyboard. All words, symbols, spaces and
punctuation beginning with the first character to the
right of the word Type should be typed exactly as
shown. Do not add or delete punctuation at the end of
a statement, and type all spaces that appear within the
statement. For example,

Type   /FCCGEN/SYSGEN

would request "/FCCGEN/SYSGEN" to be typed; the spaces
between Type and the first character to its right (a
slash here) should not be typed. Characters may be
entered in either upper or lower case.

The word "Press" is used throughout this guide to mean
that a single character or key-top symbol is to be
entered on the Concept keyboard. For example,

Press   [RETURN]

requests the carriage return be pressed on the keyboard.
When a key-top symbol is used, press the key to which
it refers; do not type out the individual letters of
the word shown within the key-top symbol.

Function key labels are used like key-top symbols.
There are ten function keys at the top of the Concept
keyboard, numbered F1 through F10. The functions of
these keys displays across the bottom of the Concept
screen, and are also graphically depicted throughout
this guide.

The function key labels may change with each program.
Within a program, each function key may represent up to
four separate functions. The first level function is
obtained by pressing the function key. For example,
from the Dispatcher labels, "Press [SetVol]" equates to
pressing the [F4] key.

The second level function is obtained by holding down
the [SHIFT] key and simultaneously pressing the
appropriate function key.

The third level function is obtained by holding down
the [COMMAND] key and simultaneously pressing the
appropriate function key. For example, from the Dis-
patcher labels, "Press [MountMgr]" equates to simulta-
neously pressing the [COMMAND] key and the [F9] key.

The fourth level function is obtained by holding down
the [COMMAND] key and the [SHIFT] key while simultane-
ously pressing the appropriate function key. For
example, from the Dispatcher labels, "Press [Reboot]"
equates to simultaneously pressing the [COMMAND] key,
the [SHIFT] key, and the [F10] key.

Function key instructions in this guide are always
given in terms of the labels at the bottom of the
Concept screen, and not by the key number. An
instruction such as "Press [ListVol]" leaves no doubt
that the function to be performed is listing a volume;
if the instruction said "Press [F5]," which is the
function key corresponding to the [ListVol] label, this
guide would give no clear indication of what function
is being performed.

Another term used frequently in this guide is default.

There are many programs and functions in the Corvus
Concept Operating System (CCOS) that require responses
to be entered from the keyboard. In many instances the
program displays the most common answer to the prompt.
The answer that the program offers is called the
default, and it may be entered by pressing [RETURN].
If the default is not to be used, simply type in the
new answer and it will be used by the program.

```
                                                          |
                                              SYSTEM      |
                                                          |  1
                                              START-UP    |
                                                          |
```

This chapter is devoted to setting up the Workstation
hardware and installing the Corvus-supplied software.
It will also give instructions on powering on the
Concept and log-on procedures.

MANUALS AND SOFTWARE

o Corvus Concept Workstation Manuals

        The Corvus Concept Personal Workstation
           Installation Guide
        The Corvus Concept Personal Workstation
           User Guide
        The Corvus Concept EdWord User Guide

o Corvus 8-inch diskette drive manuals

        The Corvus Concept Diskette Drive
           Installation Guide
        The Corvus Concept Disk Drive
           Installation Guide
        The Corvus Concept System Manager's Guide
        The Corvus Concept 68000 Assembler
           Programmer's Reference Manual
        The Corvus Concept Operating System
           Reference Manual

Standard Software

o Corvus Concept Operating System, Constellation
      Network Software, and general utilities

        FBOOT, FSYSGEN, FCCSYS1, FCCSYS2,
           FCCSYS3, and FCCSYS4 Diskettes

o Corvus Concept UCSD p-System Runtime Diskette

      FPSYS Diskette

o Corvus Concept Editor and Wordprocessing System

      FEDWORD Diskette

Optional Software

o Corvus Concept LogiCalc Spread Sheet program

      FLGICLC Diskette
      The Corvus Concept LogiCalc User Guide
      The Corvus Concept LogiCalc Glossary

o Corvus Concept ISO Pascal Programming Language

      FPASCAL Diskette
      The Corvus Concept Pascal Reference Manual

o Corvus Concept FORTRAN 77 Development System

      FFORTRN Diskette
      The Corvus Concept FORTRAN Reference Manual

o UCSD p-System Development System

If the Concept has not already been installed, refer to
"The Corvus Concept Personal Workstation Installation
Guide," and follow its instructions on setting up the
Workstation. After the Workstation is setup, return to
this section and continue with this guide.

SETTING BOOT SWITCHES

If a Corvus hard disk has just been initialized follow-
ing the instructions in "The Corvus Concept Disk Drive
Installation Guide," the boot switches have already
been set and this section can be skipped. If the
Concept is being added to an existing Omninet network,
the boot and Omninet switches must be set. If the
Concept is setup as a stand-alone unit only the boot
switches need to be set.

Open the pull-out drawer on the back of the Concept by
loosening the latch screws (see diagram). To loosen
the left screw, turn the left knob clockwise. To
loosen the right screw, turn the right knob counter-
clockwise. Slide the drawer out.

LATCH SCREWS   **LATCH SCREWS**
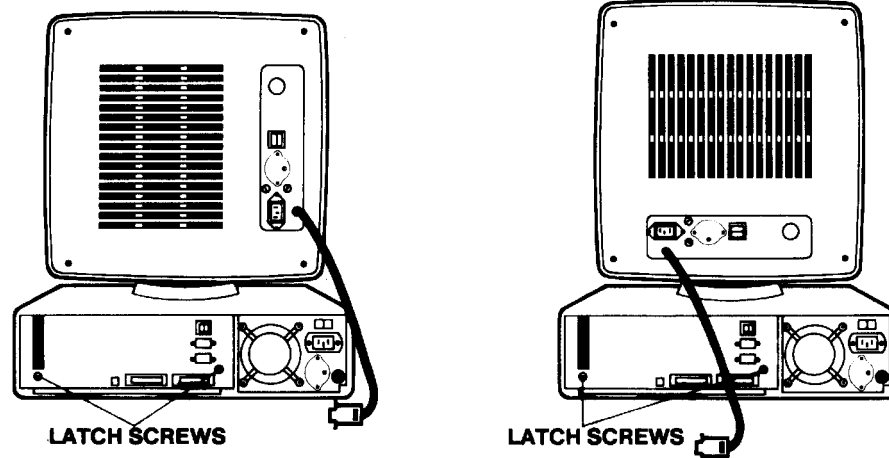
The boot switches are numbers seven and eight on the
microswitch box, located along the right side of the
pull-out drawer. Set both boot switches in the Concept
drawer to the ON position. If the Workstation is being
added to an Omninet network the six Omninet switches
must be set to a position that has been approved by the
system manager, (the person in charge of the net-
work).

BOOT SWITCH
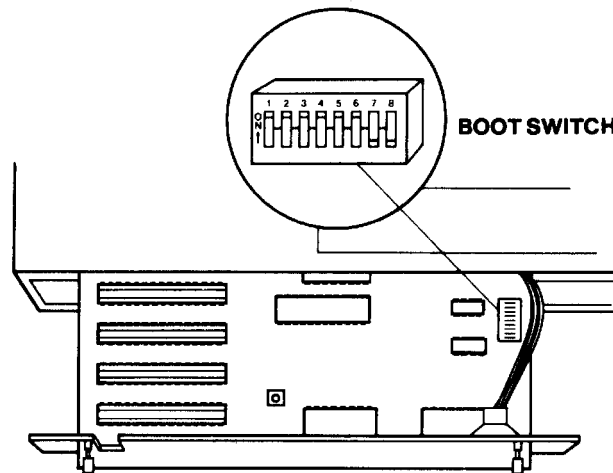
Close the drawer and tighten the latch screws.

CONNECTING TO AN OMNINET TAP

The Omninet tap cable connects to the Omninet port on
the back of the Concept base unit. The Omninet port is
recognized as slot 5 by the Concept.
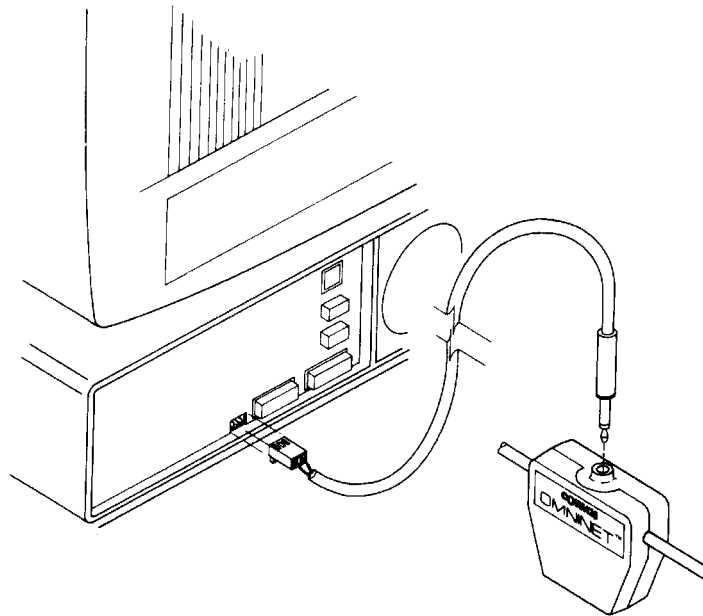
POWER-ON

By this time assuming that all the Concept hardware has
been properly setup, the system is ready to power-on.

**WARNING!   DO NOT POWER-ON OR POWER-OFF THE CONCEPT BASE
UNIT WHEN A FLOPPY DISKETTE IS IN THE DISKETTE
DRIVE. DOING THIS MAY DESTROY INFORMATION
STORED ON THE DISKETTE.**

If there is a floppy diskette in the diskette drive,
remove it before continuing with the instructions in
the next two paragraphs. Make sure the disk drive is
powered on and ready.

Looking at the front of the disk drive cabinet, there
are three red indicator lights labeled FAULT, BUSY, and
READY. When the drive is powered on all three lights
become lit. When the drive is ready (after approxi-
mately 30 seconds) only the READY light stays on.

Power-on the Concept display unit. If the display unit
is in the horizontal position, depress the left side of

the power switch. If the display unit is in the
vertical position, depress the top of the power switch.
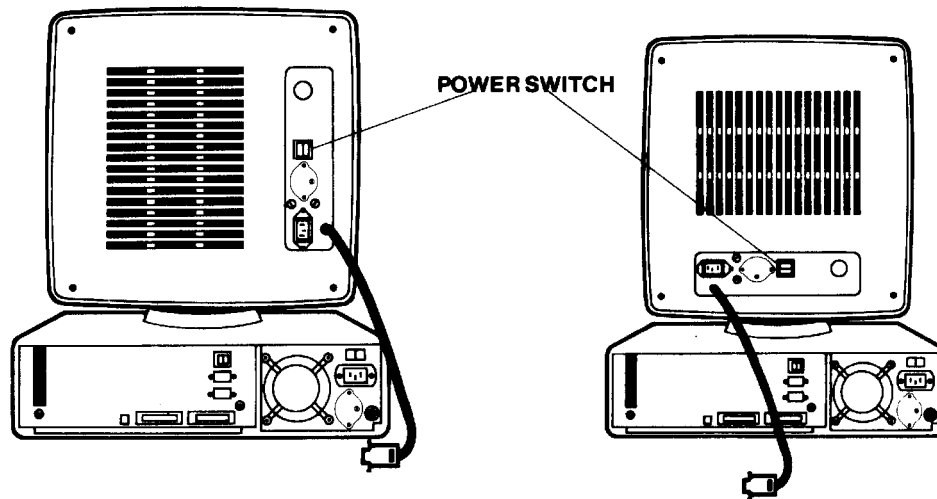
To power-on the Concept base unit, depress the right
side of the power switch on the back of the base unit.
The Concept should make a beep, and then enter its
self-diagnostic program.

SELF-DIAGNOSTIC

After powering on the Concept, it begins running a
twenty second self-diagnostic program. The screen will
be blank during the test, and the Concept beeps again
when the program is done. Once it is finished, either
the log-on prompt or a prompt asking for the type of
boot displays.

This time a prompt asking for the type of boot displays
on the screen:

```
---------------------------------------------------------

    CORVUS CONCEPT INITIALIZATION (#.#)

    COPYRIGHT 1982 CORVUS SYSTEMS, INC.

    ALL SYSTEM TESTS PASSED

    SELECT BOOT DEVICE (D,F,L,O):


---------------------------------------------------------
```

If the Concept is connected to an Omninet network,
press O in response to the prompt above. If the Concept
is connected to a local hard disk drive, press L.   To
boot from a floppy diskette press F, and if the Concept
has the MACSbug debugger PROMs and you can enter the
debugger by pressing D.

If there is some problem with the setup, or with the
Concept itself, a boot error may appear. The follow-
ing is a list of boot errors and what should be done
if one appears.

BOOT ERROR #	SYSTEM FAILURE	SOLUTION
1	UART failure	
2	Prom checksum	Call an authorized
3	Static RAM	Corvus service center
4	Dynamic RAM	
5	Dynamic RAM	
6	Slot device not ready	Ensure all local drives are ready then press [RETURN]
7	Duplicate Omninet host numbers	Set the Omninet dip switches to a unique address

In the future, the boot device prompt may be skipped by
setting the boot switches for the device from which the
Concept is to boot. To do this, set switch seven ON
and switch eight OFF for an Omninet boot, switch seven
OFF and switch eight ON for a local disk boot, or leave
both switches ON to be prompted for boot type.

LOG-ON

After having responded to the boot device prompt, the
screen clears, then another prompt appears:

```
  *
    *      C O R V U S    S Y S T E M S
       *          CONSTELLATION   II
    *     *
```

Please enter your name:

Type the name that has been assigned to you, and press
[RETURN]. Another prompt is quickly displayed:

   Please enter your password:

Type your password and press [RETURN]. If you do
not have a password, just press [RETURN].

The screen clears, then displays several rows of dots.
The cursor will pause several times while they are
being printed. The screen will clear again and the
following is displayed:

CCOS v #.#   User: JOE   Station: 1   Volume: /CCSYS

Mount Constellation II volumes ...

Mounting volume CCSYS   on unit 4
Mounting volume *****   on unit 9
Mounting volume CCUTIL   on unit 10
Mounting volume ONE   on unit 11
Mounting volume TWO   on unit 12

```
+-------------------------------------------------------+
|                                                       |
| Enter Command:                                        |
+-------------------------------------------------------+
    |||  |||  |||  |||  |||  |||    |||  |||  |||  |||  |||
                                                    .
```

At the top of the screen is a permanent display which
has the version of the operating system on the left,
followed by the name of the user, the Workstation
number which appears only if the Workstation is
connected to an Omninet network, and the current
volume. On the right side of the screen is displayed
the day of the week, the month, day, year, and the time
(in military time). Once set, the date is automatic-
ally updated every twenty-four hours. The time is
updated by the Concept when the Workstation is idle and
in the Dispatcher level.

All the volumes in your access table are automatically
mounted. If there is a diskette drive connected to the
Concept without a diskette in the unit, a series of
asterisks are used in place of the diskette name when
"Mounting volume ***** on unit 9" displays.

If there is a diskette drive with a diskette in the
unit, the diskette's name appears where the asterisks
are.

The screen has been divided into three separate areas
called "windows." Output is displayed in the System
window, interaction with the operating system takes
place in the Command window, and function key labels
are shown in the Label window.

SYSTEM WINDOW

COMMAND WINDOW

LABEL WINDOW
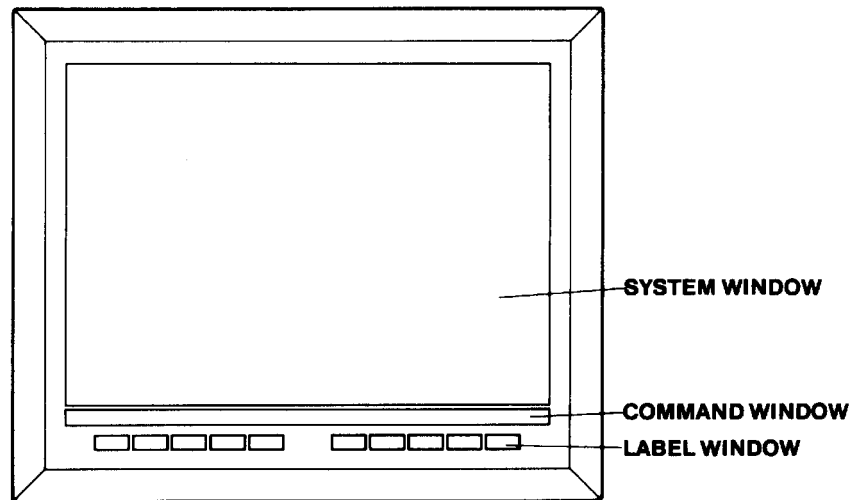
There are many levels of function keys, each with their
own set of labels. These levels can be reached by
pressing function keys from higher levels which repre-
sent a group of interrelated tasks. The highest level
of labels is called the Dispatcher level. Each label
corresponds to one of the function keys at the top of
the Concept keyboard.

The Dispatcher label display shows only one half its
labels at a time. By holding down the [COMMAND] key on
the keyboard, you can see the other half. With both
shifted and unshifted labels, plus those available by

holding down the [COMMAND] key, a maximum of forty
labels may be available per level.

```
                         DISPATCHER
         F1        F2        F3        F4        F5
      +---------+---------+---------+---------+---------+
      |         |         |         |         |         |
      +---------+---------+---------+---------+---------+
      |p-System |         |EdWord   |SetVol   |ListVol  |
      +---------+---------+---------+---------+---------+


         F6        F7        F8        F9        F10
      +---------+---------+---------+---------+---------+
      |         |         |         |         |         |
      +---------+---------+---------+---------+---------+
      |ClrWndow |SelWndow |Restart  |Help     |         |
      +---------+---------+---------+---------+---------+


              DISPATCHER with [COMMAND] pressed
         F1        F2        F3        F4        F5
      +---------+---------+---------+---------+---------+
      |         |         |         |         |         |
      +---------+---------+---------+---------+---------+
      |FileMgr  |WndowMgr |ExecFile |Const II |SysUtils |
      +---------+---------+---------+---------+---------+


         F6        F7        F8        F9        F10
      +---------+---------+---------+---------+---------+
      |         |TmpWndow |         |         |Reboot   |
      +---------+---------+---------+---------+---------+
      |RevBkgnd |CreWndow |         |MountMgr |         |
      +---------+---------+---------+---------+---------+
```

COPYING OPTIONAL SOFTWARE

Now that the Concept is up and running smoothly, the
next step is to transfer any optional programs you have
purchased from diskettes to the Corvus hard disk drive.

Copying LogiCalc To The Hard Disk Drive

There is one LogiCalc distribution diskette, which is
called "Concept LogiCalc Diskette." Copy the files to
the hard disk as follows:

1. Place the LogiCalc diskette in the diskette drive.

2. Press   [ExecFile]

    You will be prompted for a filename in the Command
    window:

    Execute which command file?

    Type   /FLGICLC/SYSTEM.UPDATE
    Press   [RETURN]

    The System window displays:

       File ID: /FLGICLC/SYSTEM.UPDATE

       SYSTEM.UPDATE assumes volumes /CCSYS and /CCUTIL
       exist and have read/write access

    Continue? [Y/N]:

    ----

3. Press Y

The files on this diskette are automatically copied to
the hard disk. When the labels at the bottom of the
screen are displayed, the update is complete.

Copying Pascal To The Hard Disk Drive

There is one Pascal distribution diskette, which is
called "Concept Pascal Diskette." Copy the files to
the hard disk as follows:

1. Place the Pascal diskette in the diskette drive.

2. Press   [ExecFile]

    You will be prompted for a filename in the Command
    window:

    _____

    Execute which command file?

    _____

    Type   /FPASCAL/SYSTEM.UPDATE
    Press   [RETURN]

    The System window displays:

    _____

      File ID: /FPASCAL/SYSTEM.UPDATE

      SYSTEM.UPDATE assumes volumes /CCSYS and /CCUTIL
      exist and have read/write access

    Continue? [Y/N]:   .

    _____

3. Press   Y

The files on this diskette are automatically copied to
the hard disk. When the labels at the bottom of the
screen are displayed, the update is complete.

Copying FORTRAN To The Hard Disk Drive

There is one FORTRAN distribution diskette, which is
called "Concept FORTRAN Diskette." Copy the files to
the hard disk as follows:

1. Place the FORTRAN diskette in the diskette drive.

2. Press   [ExecFile]

    You will be prompted for a filename in the Command
    window:

    Execute which command file?

    Type   /FFORTRN/SYSTEM.UPDATE
    Press   [RETURN]

    The System window displays:

      File ID: /FFORTRN/SYSTEM.UPDATE

      SYSTEM.UPDATE assumes volumes /CCSYS and /CCUTIL
      exist and have read/write access

    Continue? [Y/N]:

    ----

3. Press Y

The files on this diskette are automatically copied to
the hard disk. When the labels at the bottom of the
screen are displayed, the update is complete.

This chapter covers the Concept keyboard and display
monitor. The use of the function keys, modifier keys,
cursor keys, and display control keys are all
discussed.

THE KEYBOARD

The standard Concept keyboard is a detached Selectric-
style QWERTY keyboard. It is connected to the base
unit with a telephone-type cord, which extends to a
maximum length of six feet.

Although the keyboard is similar to a typewriter key-
board, the Concept keyboard has a numeric keypad and
additional keys to control some of the functions of the
Workstation.
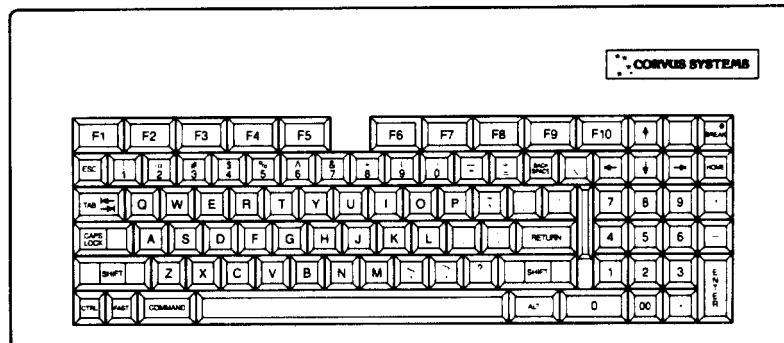
The keys are divided into five groups:

    1. Character keys,
    2. Function keys,
    3. Cursor control keys,
    4. Numeric keypad keys,
    5. Modifier keys.

All keys on the keyboard automatically repeat when they
are held down.

The keyboard has fourteen modifier keys, and ten func-
tion keys. When referring to these keys throughout
this Guide, they appear within brackets, e.g. [RETURN]
and [COMMAND].

Modifier Keys

The modifier keys are standard keys found on most
computer keyboards. These keys change the function of
other keys on the keyboard. To do this, they must be
held down while another key is pressed, similar to the
way typewriters use the [SHIFT] key.
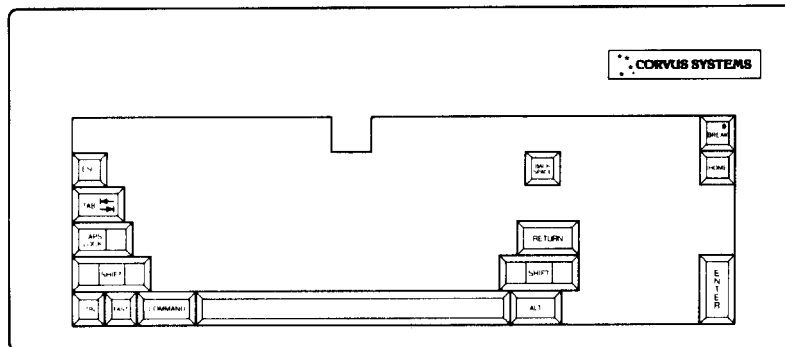
[ALT]   stands for "alternate." When held down
                    it causes an alternate character to be
                    displayed when a key is pressed instead
                    of the normal character symbol as shown
                    on the keytops.

[BACK SPACE]   moves the screen cursor backwards. It
                is used to delete mistakes when typing
                data in the Command window.

[BREAK]   can perform a cold boot. It may also be
                used for stopping file listings. For
                details, see the last section in this
                chapter.

[CAPS LOCK]   sets all alphabet keys to display as
                capital letters without having to
                press [SHIFT].

[COMMAND]   displays a second set of function keys,
                doubling the number available. For
                details, see the section titled "Function
                Keys and Function Key Labels."

[CTRL]   stands for "control." It is used in
                conjunction with other keys to perform
                functions such as stopping and starting
                screen display, rebooting, etc. See the
                last few sections of this chapter for
                more information.

[ENTER]   sends data to the processor from the
                numeric keypad. On the Concept, this key
                is the same as the [RETURN] key.

[ESC]   stands for "escape." The key is used to
                exit certain programs. VOLUTIL, HELP,
                and Mount Manager are examples.

[FAST]   speeds up the cursor keys or displayable
                keys, it causes the key being pressed to
                repeat faster than the normal rate.

[HOME]   is used by some Concept programs to put
                the cursor in the upper left corner of
                the display screen.

[RETURN]   sends information to the processor. It
                also performs as the standard typewriter
                carraige return.

[SHIFT]   is used to type a single upper-case
                letter, or the upper character on a key.

[SPACE]   causes a blank space to be created. It
                 is the same as the space bar on all
                 typewriters.

[TAB]   causes the cursor to move eight spaces,
                 or another specified length.

Cursor Keys

The Concept keyboard has four cursor movement keys,
which allow the screen cursor to be moved up, down,
left, or right. The arrow on the keytop indicates the
direction the cursor moves.

Cursor keys are located just above the numeric keypad.
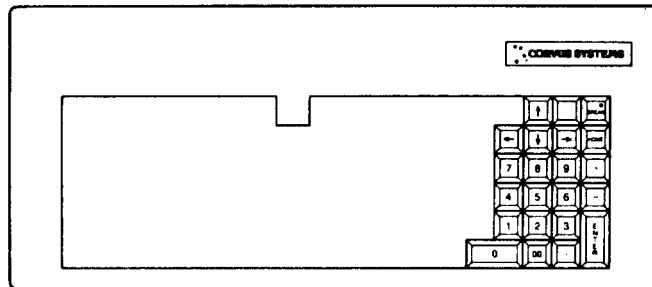
Function Keys

There are ten function keys across the top of the
Concept keyboard labeled F1 through F10. These keys
are programmable, and are used by system programs to
perform specific functions.
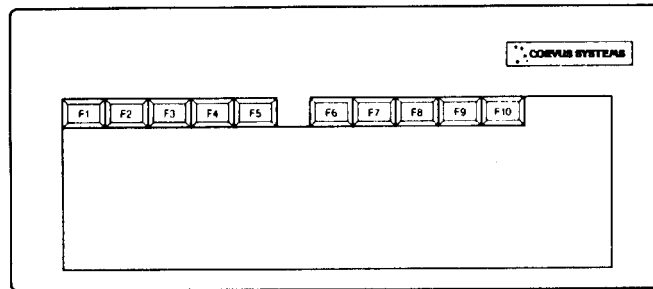
Function Key Labels

Function key labels are the abreviated names of pro-
grams or functions that can be accessed by pressing a
function key.

Function key labels are displayed in the Label window
at the bottom of the Corvus Concept display screen.
Each of these keys corresponds to one of the function
keys, F1 through F10, on the Concept keyboard. The
number of the corresponding function key is displayed
above each label.
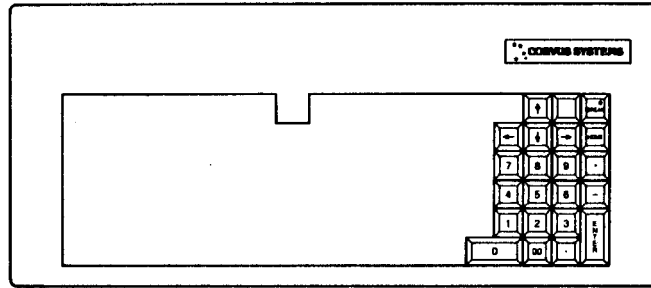
Two sets of function key labels are available. One set
of labels is displayed automatically; the other set is
displayed when the [COMMAND] key is held down.

Some sets of function key labels contain a row of
shifted and unshifted functions. The unshifted label
is the lower one in each label box, and the shifted
label is the upper one. However, not every label box
will have both a shifted and unshifted label; most have
only the unshifted label.

```
      F1        F2        F3        F4        F5
    +--------+--------+--------+--------+--------+--------+
    |        |         shifted labels    |        |       |
    +--------+--------+--------+--------+--------+--------+
    |        |        unshifted labels   |        |       |
    +--------+--------+--------+--------+--------+--------+


      F6        F7        F8        F9       F10
    +--------+--------+--------+--------+--------+--------+
    |        |         shifted labels    |        |       |
    +--------+--------+--------+--------+--------+--------+
    |        |        unshifted labels   |        |       |
    +--------+--------+--------+--------+--------+--------+
```

This guide treats a label as a key. When a label name
is enclosed in brackets, e.g. [ListVol], this guide
refers to the function key associated with the label.
When a label name is not enclosed, e.g. ListVol, we
refer to the task associated with the label not the

physical key.

The function key labels change with each program.
Within each program, each function key may represent up
to four separate functions. The first level function
is obtained by pressing the function key. For example,
from the Dispatcher labels, "Press [SetVol]" equates to
pressing the [F4] key.

The second level function is obtained by holding down
the [SHIFT] key and simultaneously pressing the
appropriate function key.

The third level function is obtained by holding down
the [COMMAND] key and simultaneously pressing the
appropriate function key. For example, from the
Dispatcher labels, "Press [MountMgr]" equates to
simultaneously pressing the [COMMAND] key and the [F9]
key.

The fourth level function is obtained by holding down
the [COMMAND] key and the [SHIFT] key while simultane-
ously pressing the appropriate function key. For
example, from the Dispatcher labels, "Press [Reboot]"
equates to simultaneously pressing the [COMMAND] key,
the [SHIFT] key, and the [F10] key.

The Help Label

For a brief description of any function key label,
press [Help] then press the function key that
corresponds to the label in question.

For example, press the [Help] function key on the
keyboard. The machine reads the Help file and displays
a prompt for more instructions:


```
+----------------------------------------------------+
| Select the appropriate function key for HELP ....  |
| Press <ESC> to terminate help processing           |
+----------------------------------------------------+
```


Press [ClrWndow]

The following message is displayed near the top of the

display window:

    [ClrWndow] clears everything from the current window.

For information on another function, just press the
appropriate key. For example, if [SelWndow] is pressed
after having pressed [ClrWndow] above, a SelWndow help
message displays below the ClrWndow help message:

[ClrWndow] clears everything from the current window.

[SelWndow] allows you to choose one of your defined windows
and make it the current window.

Help continues to give messages until the [ESC] key is
pressed. Pressing [ESC] will exit the program and
return to the current level.

If the [HELP] key is accidently pressed, the program
can be terminated before it is completely read into
memory by pressing any key on the keyboard.

The Exit Label

There are many sets, or levels, of function key labels
in the operating system. For example, another level
can be reached by pressing [WndowMgr]. The Exit label
leaves the current set of labels and returns to one
level higher until the Dispatcher level is reached.

Exit is always associated in some way with the [F10]
key. It appears in every set of labels, except the
Dispatcher set.

THE VIDEO DISPLAY MONITOR

The Corvus Concept display unit can be arranged in
different ways to suit different purposes. The orien-
tation can be changed, and it can be tilted and
swiveled. For details on changing the screen orien-
tation from vertical to horizontal or vice versa see
the section titled "VIDEO DISPLAY UNIT" in Chapter Six.

Screen Configuration

The video display screen is divided into areas called
windows. A window can be considered a section of the
screen, or a defined display area. A task being com-
pleted in a window does not affect the area outside
that window.

At log-on the Concept displays three permanent windows.
They are called the System window, the Command window,
and the Label window.

System Window. The System window is the topmost and
largest of the three windows. This is where all normal
output is displayed; e.g. characters and graphics
output by various programs, as well as system functions
such as volume listings.
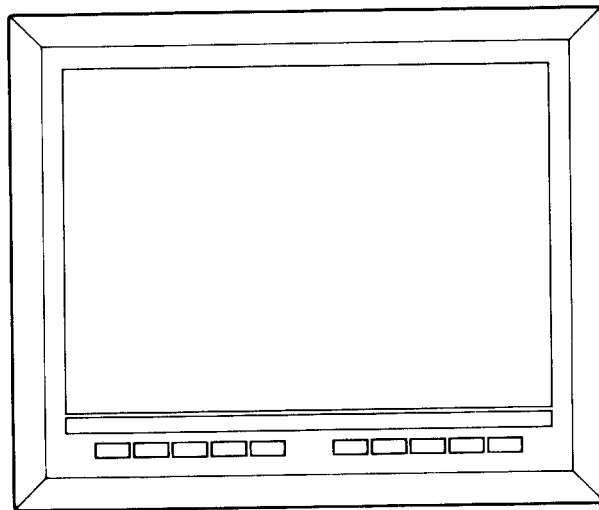
In the horizontal orientation, the size of the System
window is 707 pixels by 479 pixels.
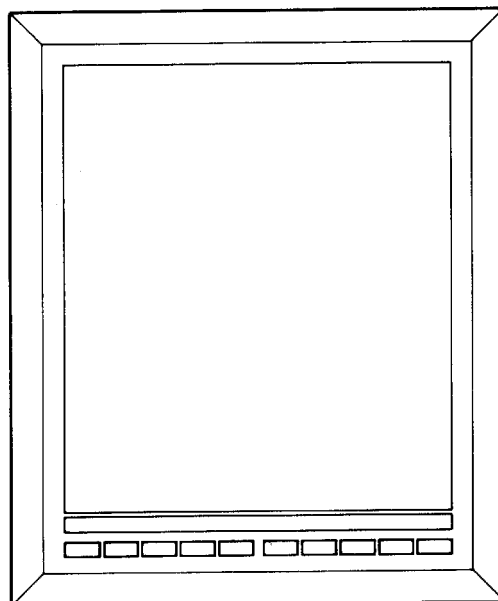
In the vertical orientation, the size of the System
window is 545 pixels by 639 pixels.

The following table is a list of the actual number of
characters, of diffferent heights and widths, that can
be placed within any full sized System window.

TEXT COLUMNS ON SCREEN

char width in pixels	horizon.	vertical
5	141	109
6	118	91
7	101	78
8	88	68
9	79	61
10	71	55
11	64	50
12	59	45
13	54	42
14	51	39
15	47	36
16	44	34

TEXT LINES ON SCREEN

char hgt. in pixels	horizon.	vertical
5	96	128
6	80	107
7	68	91
8	60	80
9	53	71
10	48	64
11	44	58
12	40	53
13	37	49
14	34	46
15	32	43
16	30	40

The character set being displayed, the default character
set, is 6 by 10 pixels. Therefore in the horizontal
orientation 118 characters may be displayed across on
48 separate lines. In the vertical orientation 91
charaters may be displayed across on 64 separate lines.

Command Window. There is a long narrow rectangle below
the System window, called the Command window. This is
the area where commands are entered and displayed. The
Command window also serves as a message window.

```
+------------------------------------------------+
| Message line                                   |
| Command line                                   |
+------------------------------------------------+
```

The Command window is composed of two lines. The
bottom line is the command line, where commands are
typed. The top line is the message line, where the
Concept displays messages.

Label Window. Function key labels are displayed in the
third window. This is at the bottom of the screen
below the Command window. The labels in this window
stand out, since the lettering is black with a white
background. The labels indicate what function each key
represents.

DISPLAY CONTROL KEYS

Display control keys are keys used in conjunction with
the [CTRL] key. This means that the [CTRL] key is held
down while another key is simultaneously pressed.
These keys and their functions are as follows:

FUNCTION	hold down	........then press
Stop Screen Display	[CTRL]	S
Restart Screen Display	[CTRL]	S
Restart Screen Display	[CTRL]	Q
Return from Exec level	[CTRL]	D

Interrupting Screen Display

If the Concept is set for scrolling, there are times
when you will want to stop the flow of text. To do
this hold down the [CTRL] key and press S.

A [CTRL] S may be used to interrupt scrolling in a text
file, or long volume listing; it can also suspend the
output of a program.

To restart a listing or program's output use the
[CTRL] S or a [CTRL] Q commands. Either key may be
used to continue scrolling.

Using a [CTRL] S does not terminate a
task. Before using the Concept to perform another task
you must complete execution by restarting the scroll,
and halt program execution.

THE BREAK KEY

Terminating a File Listing

There are occasions where a file listing may take a
long time. When large files are listed, and the first
part is all that is needed, the [BREAK] key is useful.
Pressing the [BREAK] key will terminate a listing and
return control of the Concept to the user.

Cold Boot

A cold boot can be performed by holding down [CTRL] and
pressing [BREAK]. This reloads the operating system
and drivers. However, **DO NOT** use this key when running
a program that writes data to the disk, because this
may destroy the file being written to.

This chapter covers the Corvus Concept Operating System
(CCOS) utilities. There is in-depth instruction on the
function keys, file management, display-screen manage-
ment, user-definable function keys, executable (Exec)
files, and entering the runtime p-System.

THE DISPATCHER

The labels that display at the bottom of the screen at
log-on are called the Dispatcher labels. They are the
first level of functions available after log-on.

Other sets of labels can be called from the Dispatcher
level that allow various features of the Concept to be
used. These sets include: the FileMgr labels, the
WndowMgr labels, SysUtils labels, LogiCalc labels,
EdWord labels, and the Userkey labels.

At this point the Command window appears as follows:

```
+--------------------------------------------------------+
|                                                        |
| Select Function:                                       |
+--------------------------------------------------------+
```

The labels available at the Dispatcher level are shown
below.

```
                              DISPATCHER
             F1        F2        F3        F4        F5
           +--------+--------+--------+--------+--------+
           |        |        |        |        |        |
           +--------+--------+--------+--------+--------+
           |p-System|LogiCalc|EdWord  |SetVol  |ListVol |
           +--------+--------+--------+--------+--------+


             F6        F7        F8        F9        F10
           +--------+--------+--------+--------+--------+
           |        |        |        |        |        |
           +--------+--------+--------+--------+--------+
           |ClrWndow|SelWndow|Restart |Help    |Userkeys|
           +--------+--------+--------+--------+--------+


              DISPATCHER with [COMMAND] pressed
             F1        F2        F3        F4        F5
           +--------+--------+--------+--------+--------+
           |        |        |        |        |        |
           +--------+--------+--------+--------+--------+
           |FileMgr |WndowMgr|ExecFile|Const II|SysUtils|
           +--------+--------+--------+--------+--------+


             F6        F7        F8        F9        F10
           +--------+--------+--------+--------+--------+
           |        |TmpWndow|        |        |Reboot  |
           +--------+--------+--------+--------+--------+
           |RevBkgnd|CreWndow|        |MountMgr|        |
           +--------+--------+--------+--------+--------+
```

Dispatcher Level Functions

[ClrWndow]   clears everything from the current
              window.

[Const II]   enters the Constellation II level
              which is used exclusively by System
              managers.

[CreWndow]   creates new windows inside the System
              window area. To create a new window
              press [CreWndow] and follow the dir-
              ections given.

[EdWord]   enters the Concept editor/word proces-
                sor program. It is discussed in a
                separate manual: "The Corvus Concept
                EdWord User Guide."

[ExecFile]   allows you to execute any Exec file
                entered on the command line, or run
                the command interpreter by typing %.
                To leave the command interpreter you
                must use [CTRL] D.

[FileMgr]   enters the File Manager level. To
                return to the Dispatcher level from
                the File Manager press [Exit].

[Help]   gives you brief descriptions of each
                label. Press [ESC] to exit from Help.

[ListVol]   lists volumes on-line or file names
                in a volume. Type the volume name and
                press [ListVol] to list the files in
                a particular volume. Type / or ! for
                listings of volumes and devices on-line
                and other volume information.

[LogiCalc]   enters the optional Concept spread-
                sheet progam. It is discussed in a
                separate manual: "The Corvus Concept
                LogiCalc User Guide."

[MountMgr]   runs the Constellation II Mount Manager
                program allowing you to manage your
                volume access.

[P-System]   enters the UCSD Pascal runtime oper-
                ating system. The current volume must
                be a UCSD volume. H(alt must be used
                to return to the CCOS from the p-System.

[Reboot]   automatically reinitializes the system
                without going through the diagnostic
                program and log-on procedures.

[Restart]   causes the CCOS to perform the last
                command that was executed.

[RevBkgnd]   reverses the background of the current
                window from black to white and vice
                versa.

[SelWndow]   allows you to choose one of your defined
                windows and make it the current window.

[SetVol]   allows you to set a volume as the current
                volume. The current volume is the one
                where your work is being done.

[SysUtils]   enters the System Utilities level. To
                return from the System Utilities level.
                from the System Utilities level press
                [Exit].

[TmpWndow]   allows you to create a temporary window
                inside the System window.

[UserKeys]   enters you in the user-definable function
                key level. These labels are defined in
                the file USERKEYS.TEXT and can be modified
                in EdWord to contain any commands you
                want.

[WndowMgr]   enters the Window Manager level. To
                return to the Dispatcher level from the
                Window Manager level press [Exit].

How to Run a Program

At the Dispatcher level, the Concept is in a state of
readiness-to-execute. There are two ways to execute, or
run, a program: 1) by typing the name of the file that
contains a program, 2) by pressing the function key
corresponding to a desired label.

To run a program designated by a label, press the
function key associated with that label. For example,
to use EdWord, the Concept Editor/Word processor, press
[EdWord].

To run a program other than one designated by function
key labels, type the name of the program and press
[RETURN].

For example, to run the Concept diskette formatting
program named FFRMT, in the volume /CCUTIL, type the
program file name.

Type   /CCUTIL/FFRMT
Press   [RETURN]

```
+---------------------------------------------------------------+
|                                                               |
| Select function: /CCUTIL/FFRMT [RETURN]                       |
+---------------------------------------------------------------+
```

To run a program that is not in the current volume,
type the volume name enclosed in slashes followed by
the program name and press [RETURN]. For example, to
run a program named GRAPH in a volume named WORK,

Type   /WORK/GRAPH
Press   [RETURN]

```
+---------------------------------------------------------------+
|                                                               |
| Enter Command: /WORK/GRAPH [RETURN]                           |
+---------------------------------------------------------------+
```

If a volume name is not specified when running a pro-
gram, the CCOS first searches the current volume for
the file. If the file is not in the current volume,
CCOS searches the boot volume, which is the normally
volume named CCSYS.

The Restart Function

For tasks that are to be performed many times in
succesion the Restart key performs a valuable service.
To execute the last command performed

Press   [Restart]

The function is performed unless it is a task that does
not need to be done over. An example of that would be
setting the current volume. Once that volume has been
set there is no need to set it again.

Warm Boot

When at the Dispatcher level Reboot can be used to
perform a warm boot. This reloads the operating system
and drivers, and skips the diagnostic program and the
regular log-on procedures.

To re-boot this way,

PRESS [Reboot]

FILE MANAGEMENT

The Concept File Manager handles most of the tasks of
transferring information from one place to another.
These tasks include:

          1. making disk files,
          2. deleting disk files,
          3. moving disk files,
          4. concatenating files,
          5. renaming files,
          6. renaming volumes,
          7. listing files,
          8. listing volumes.

The file manager also keeps track of where files have
been placed in a volume, and what system devices are
available to be used. A volume has a directory that
contains the names and addresses of the files stored
within it.

A volume is a named area of disk space, similar to a
single diskette. All file management rules that apply
to volumes also apply to diskettes.

Volumes and diskettes provide storage areas for files.
A file can contain a program, a letter to a friend, a
manual, a list of names, or any of a hundred other
things. In more technical terms, a file or a volume is
a defined area on the disk that contains a collection
of data.

There are several types of files in the CCOS. The two
most important types are data files and text files.
Programs are placed in data files. Letters, manuals,

and lists of names are in text files, which always have
a .TEXT automatically appended to their name by EdWord.

Logical Units

A logical unit denotes a general device identifier,
while a physical unit is the specific piece of equip-
ment choosen to perform that function. The CCOS re-
quires you to select a physical unit to perform the
function for each logical unit.

Volumes are considered physical units, and each is
assigned a unique logical unit numbers.

System Volume

The system volume contains the information needed by
the Concept at power-on. This volume is normally named
/CCSYS and is mounted on logical unit four. Most of
the files in the system volume are data files, or
programs.

Current Volume

The current volume is the volume where work take place.
At boot, the current volume is set to the volume mounted
on unit 5. If there is no volume mounted on unit 5,
the current volume is set to the system volume.

The current volume can be set to any volume in your
account. This is done by using the SetVol function.

Volume Names

A volume name can be from one to seven characters in
length. The name can contain only letters, numbers,
and periods; it can start with a letter or a number,
but not a period.

The following are examples of valid volume names:

```
ONE         HUSH        232
1           LUMPY       LETTERS
B.VOL7      4545456     XX.MINE
```

To reference a volume, you must precede the volume name
with a slash, as follows:

/HUSH

To the Concept, slashes are volume name delimiters.
They tell the Operating System that the name following
the slash is a volume name and not a file name.

File Names

A file name can contain up to fifteen characters. The
name can contain only letters, numbers, periods, dashes,
and underline characters; it can start with any legal
character. File names can be changed with the RnamFile
function described later in this chapter.

The following are examples of valid file names:

```
REJECTS.IV.TEXT        LETTER.SORT
A FAST PROGRAM         56 TEXT
TRY.324.TEXT           PROGRAM669
...HERE...             .3.FLY
```

To reference a file in the current volume, simply type
the file name, as follows:

SECRET.TEXT

To reference a file in a volume other than the current
volume, type the volume name enclosed in slashes
followed by the file name, as follows:

/HUSH/SECRET.TEXT

Wild-Card Characters

There are two wild-card characters that can be used
with some of the Concept file functions. These are the
asterisk (*) and the question mark (?).

The question mark can be used to represent any single
character. For example, the file name ?OSE.TEXT is
equivalent to NOSE.TEXT, HOSE.TEXT, and LOSE.TEXT. The
file name FOO?.TEXT is equivalent to FOOL.TEXT,
FOOD.TEXT, and FOOT.TEXT.

The asterisk represents any group of characters. For
example, the file name F*.TEXT is equivalent to
FUN.TEXT, FUNNY.TEXT, FLOAT.TEXT etc.

If a volume listing is requested using *.TEXT
(/VOL1/*.TEXT), all the file names in VOL1 that end
with .TEXT are listed. If a volume is requested using
LET* (VOL1/LET*), all file names that begin with the
letters LET are listed.

The wild-card characters may be used with the ConcFile,
CopyFile, DletFile, DletTemp, ListFile, or ListVol
commands.

Setting a Volume

SetVol designates a volume as the current volume.
SetVol appears in both the Dispatcher labels and the
FileMgr labels.

Each time the Concept is powered-on, the current volume
is set to the volume mounted on unit number five. The
current volume can be changed in the manner described
below.

To change the current volume press [SetVol], and type
the name of the volume to be set as current, then press
[RETURN].

For example, to set the volume /VOL1 as current do the
following:

Press [SetVol]

The Command window displays:

```
+-------------------------------------------------------+
|                                                       |
| Set which volume to current?                          |
+-------------------------------------------------------+
```

Type   /VOL1
Press   [RETURN]

```
+-------------------------------------------------------+
|                                                       |
| Set which volume to current? /VOL1 [RETURN]           |
+-------------------------------------------------------+
```

When the volume is set, the Concept responds in the
Command window:

```
+-------------------------------------------------------+
| Current volume is now /VOL1                           |
| Select FileMgr function:                              |
+-------------------------------------------------------+
```

If an error is made typing the volume name, use the
[BACKSPACE] key to back up and correct the error. If
an invalid volume name is entered, such as "VAL1"
instead of "VOL1," an error message displays:

```
+-------------------------------------------------------+
| '/VAL1' is not a valid volume name                    |
| .                                                     |
+-------------------------------------------------------+
```

Once a volume is set as the current volume, it remains
current until it is changed, or until the
next time the Concept is re-booted.

Listing a Volume

The ListVol function can be used to obtain various
kinds of information. ListVol tells which volumes are
mounted, the file names in the current volume, or the
file names in any other volume. ListVol is found in
both the Dispatcher and the FileMgr labels.

To list the files in a volume press [ListVol], type a
slash, the volume name, and press [RETURN].

For example

Press [ListVol]

The Command window displays:

```
+------------------------------------------------------------+
|                                                            |
| List which volume directory?                               |
+------------------------------------------------------------+
```

Type   /VOL1
Press [RETURN]

```
+------------------------------------------------------------+
|                                                            |
| List which volume directory? /VOL1 [RETURN]                |
+------------------------------------------------------------+
```

The following is displayed in the System window:

```
CCOS Volume: VOL1, size = 1024 blocks, 19 files
CVT.TEXT          512  13-Mar-82      6:    4  text
CVT               512  10-Mar-82     10:    5  data
LINKER.TEXT       228  10-Mar-82     15:   14  text
LNKFR8NT.TEXT     380  10-Mar-82     29:    6  text
LNKINTRO.TEXT      90  10-Mar-82     35:    8  text
LIBRARY.TEXT      205  10-Mar-82     43:    6  text
OBJECTF.TEXT      247  10-Mar-82     49:   80  text
LINKMAN.TEXT      333  10-Mar-82    129:    4  text
MER6.TEXT         512  19-Feb-82    133:   24  text
MER0.TEXT         512  13-Mar-82    157:   22  text
MER1.TEXT         512  13-Mar-82    179:   34  text
MER2.TEXT         512  13-Mar-82    213:   26  text
MER3.TEXT         512  13-Mar-82    239:   24  text
MER4.TEXT         512  13-Mar-82    263:   28  text
MER5.TEXT         512  13-Mar-82    291:   24  text
BOLD              512  13-Mar-82    315:  162  data
BOLD1             512  23-Mar-82    477:  500  data
BB.TEXT           512  13-Mar-82    977:    4  text
GRAP.TEXT         512  22-Mar-82    981:   20  text
<...>                               1001:   23
19 of 19 files listed.
```

To understand this listing it is best to break it down
one section at a time. The top line of the listing
gives some important volume information:

CCOS Volume: VOL1, size = 1024 blocks, 19 files

CCOS Volume: VOL1 --

          CCOS tells us that it is a Corvus Concept
          volume. A volume could also be a UCSD
          volume. The name of the volume being
          listed is VOL1.

size = 1024 blocks --

          this tells us that the volume VOL1 has a
          size of 1024 blocks. Each block on the
          Concept is 512 bytes, so we now know the
          exact size of the volume.

19 files --

> this tells us that there are nineteen files
> in the volume VOL1. This includes all text
> and data files.

The next line, and the lines below it give us valuable
information about our files. The information is
broken down into six columns:

CVT.TEXT   512 13-Mar-82   6:   4 text

CVT.TEXT --

> this, and every name below it in the left
> column, is a file name in the volume
> directory.

512 --

> this, and the numbers below it in the
> second column, is the number of bytes used
> in the last block of the file. When we add
> the number of full blocks the file takes,
> we will know exactly how much space the
> file uses.

13-Mar-82 --

> this is the last date that this file has
> been updated. The 13 is the day, Mar is
> the three letter abreviation for the month
> March, and 82 represents the year 1982.

6: --

> this number is the starting block address
> of the file.

4 --

this is the number of blocks that the file
occupies. If this number is added to the
starting block address the result is the
starting block address for the next possib-
le file.

text --

this will tell you whether the file is
a text or a data file.

The last two lines also give us useful information.
They are:

<...>   1001:   23
19 of 19 files listed.

<...> --

this symbol is in the filename column, and
represents no file. This means that the
space shown on the right is open space on
the volume.

1001:   23 --

this is the starting block address and the
size of the open space. It tells where the
open space begins, and how large the space
is.

19 of 19 files listed. --

this tells us that all the files in the
volume were actually listed. There are
occasions where a partial listing is prefe-
rable to a full one. For a partial listing
when only three files are listed, the last
line will say 3 of 19 files listed.

Slash / To list all the devices, on-line, which
includes volumes, press slash then [ListVol].

PRESS   /
PRESS   [ListVol]


```
+------------------------------------------------------+
|                                                      |
| Select function: / [ListVol]                         |
+------------------------------------------------------+
```


The following is displayed in the System window:


```
 0:     /NULL
 1:     /CONSOLE
 2:     /SYSTERM
 4: #  /CCSYS      2048 blks
 5: #  /VOL1       1024 blks
 6:     /PRINTER
 9: #  /FLOPPY      500 blks
11: #  /CSD        1024 blks
12: #  /CCUTIL     2048 blks
14: #  /VOL2       1024 blks
15: #  /VOL3       1024 blks
18: #  /MYUCSD     1024 blks
22: #  /GRAPH      1024 blks
30:     /SLOTIO
31:     /DTACOM1
32:     /DTACOM2
33:     /OMNINET
34:     /TIMER
35:     /KYBD
36:     /DISPLAY
```

```
 System volume is:   /CCSYS
Current volume is:   /VOL1
```


To understand the slash type of listing a closer
analysis of one line is needed. For this description
we will use the following line from the previous
listing:


```
14: #  /VOL2       1024 blks
```

14: --

> this is the logical unit number.

--

> this indicates the device that follows is
> block structured (i.e., disk volume).

/DTACOM1 --

> this is the name of the device. In this
> case it is a volume named VOL2. Others are
> /DTACOM1 for the serial data port 1, and
> /PRINTER for the printer.

1024 blks --

> this is the length of the volume in blocks.
> It is the same number that would be seen on
> the top line of a volume listing. It is
> only on a few of the lines in this listing,
> because not all of the devices are volumes.

The bottom lines add some information regarding the
present status of the system.

```
 System volume is:  /CCSYS
Current volume is:  /VOL1
```

The first line tells that the system volume is /CCSYS
which we can see is on logical unit four, and is 2048
blocks long.

The second line tells us that the current volume is
/VOL1 located on logical unit number five. This volume
was set as the current volume at boot since it is
mounted on unit five. If you had set another volume to
the current volume before doing the ListVol the new
volume would be listed as current.

Exclamation Point ! To list all devices mounted,
including the volume block addresses, press exclamation
point then [ListVol].

The exclamation point type of volume listing gives more
volume information than the slash listing. This extra
information includes the active slot number, the disk
server number, the drive number, and the starting block
address, and both the system and current volumes.

PRESS   !
PRESS   [ListVol]


```
+-----------------------------------------------------------+
|                                                           |
| Select functin: ! [ListVol]                               |
+-----------------------------------------------------------+
```

The following is displayed in the System window:

```
 0:    /NULL
 1:    /CONSOLE
 2:    /SYSTERM
 4: #  /CCSYS        2048 blks  (slt 2 srv 0 drv 1 blk 1232)
 5: #  /VOL1         1024 blks  (slt 2 srv 0 drv 1 blk 5328)
 6:    /PRINTER
 9: #  /FLOPPY        500 blks  (slt 3 srv 0 drv 0 blk 0)
11: #  /CSD          1024 blks  (slt 2 srv 0 drv 1 blk 6352)
12: #  /CCUTIL       2048 blks  (slt 2 srv 0 drv 1 blk 3280)
14: #  /VOL2         1024 blks  (slt 2 srv 0 drv 1 blk 7376)
15: #  /VOL3         1024 blks  (slt 2 srv 0 drv 1 blk 8400)
18: #  /MYUCSD       1024 blks  (slt 2 srv 0 drv 1 blk 9424)
22: #  /GRAPH        1024 blks  (slt 2 srv 0 drv 1 blk 10448)
30:    /SLOTIO
31:    /DTACOM1
32:    /DTACOM2
33:    /OMNINET
34:    /TIMER
35:    /KYBD
36:    /DISPLAY
```

```
 System volume is: /CCSYS
Current volume is: /VOL1
```

The listing is the same as the slash type of listing
but includes extra volume information. Below is an
explanation of the added information.

(slt 2 srv 0 drv 1 blk 7376)

slt 2 --

          this is the slot number that the drive is
          connected to. If the volume is on a local
          hard disk drive or a diskette drive the
          slot number could be
          from 1 to 4, depending on which slot the
          disk's interface card is in. If the volume
          is on an Omninet local area network the
          slot number would be 5.

srv 0 --

> this is the disk server number. The disk
> server is used to connect a Corvus disk to
> the Omninet local area network. If the
> slot number is not 5, this number is
> irrelevant.

drv 1 --

> this is the disk drive number. Since up to
> four disk drives may be daisy-chained the 1
> represents the first drive.

blk 7376 --

> this is the starting block address for the
> volume on the hard disk drive.

Output Redirection. Normal output displays in the
current window. However, this output can be redirected
to a text file or a printer. Redirection works with
any of the Concept list functions: ListVol, ListFile,
and DrvrVrsn.

The printer driver must be assigned before redirecting
output to a printer. Assigning drivers is covered in a
later chapter.

Redirected output looks exactly the same in a text file
or on paper as it would when displayed on the screen.

The format for redirecting output is as follows:

  (device being listed) > (output device)(function key)

The device being listed can, for example, be the
current volume. The output device can be a text file
or a printer.

The following example shows how to redirect the current
volume directory listing to a text file in another
volume.

Type   /VOL1 > /VOL2/LIST.TEXT [ListVol]

```
+------------------------------------------------------------+
|                                                            |
| Select function: /VOL1 > /VOL2/LIST.TEXT [ListVol]         |
+------------------------------------------------------------+
```

The next example shows how to redirect the current
volume directory listing to a local printer.

Type   /VOL1 > /PRINTER
Press   [ListVol]

```
+--------------------------------------------------------+
|                                                        |
| Select function: /VOL1 > /PRINTER [ListVol]            |
+--------------------------------------------------------+
```

FILE MANAGEMENT FUNCTIONS

Concept file management functions include: delete a
file, delete a temporary file, make a file, rename a
file, copy a file, list a file and reclaim volume
space.

When [FileMgr] is pressed from the Dispatcher level,
the Concept FileMgr labels display.

```
                        FILE MANAGER
          F1        F2        F3        F4        F5
         +--------+--------+--------+--------+--------+
         |        |        |        |        |        |
         +--------+--------+--------+--------+--------+
         |CopyFile|DletFile|ListFile|SetVol  |ListVol |
         +--------+--------+--------+--------+--------+


          F6        F7        F8        F9        F10
         +--------+--------+--------+--------+--------+
         |        |        |        |        |        |
         +--------+--------+--------+--------+--------+
         |ClrWndow|SelWndow|Spool   |Help    |Exit    |
         +--------+--------+--------+--------+--------+


             FILE MANAGER with [COMMAND] pressed
          F1        F2        F3        F4        F5
         +--------+--------+--------+--------+--------+
         |        |        |        |        |        |
         +--------+--------+--------+--------+--------+
         |MakeFile|DletTemp|RnamFile|ConcFile|Crunch  |
         +--------+--------+--------+--------+--------+


          F6        F7        F8        F9        F10
         +--------+--------+--------+--------+--------+
         |        |TmpWndow|        |        |        |
         +--------+--------+--------+--------+--------+
         |RevBkgnd|CreWndow|ChngVol |MountMgr|        |
         +--------+--------+--------+--------+--------+
```

[ChngVol]   toggles a designated volume between
                 CCOS and the UCSD volume types. DO
                 NOT CHANGE YOUR BOOT VOLUME TO UCSD.

[ClrWndow]   clears everything from the current
                 window.

[ConcFile]   combines two or more files into one
                 continuous file. It can also be used
                 to copy a single file and assign it
                 a different destination file name.

[Copyfile]   copies a file from one volume to
                 another. To copy a file press
                 [CopyFile] and answer the questions.

[CreWndow]   creates new windows within the System
                 window area. To create a new window
                 press [CreWndow] and follow the
                 directions given.

[Crunch]   moves all files in a volume so that
                 all unused space is combined into one
                 large empty space at the end of the
                 volume.

[Dletfile]   deletes a file, or files, from a
                 volume. It may not be possible to
                 retrieve a file after it has been
                 deleted.

[DletTemp]   deletes a temporary file, or files
                 from a volume. A temporary file
                 shows up in a volume listing with
                 ??? where the month normally appears.

[Exit]   returns you to the Dispatcher level.

[Help]   gives brief descriptions of each
                 command label. To leave Help press
                 [ESC].

[ListFile]   lists the contents of a text file in
                 the current window.

[ListVol]   lists volumes on-line or file names
              in a volume. To list the files in a
              particular volume press [ListVol], and
              type the volume name. Type / or ! for
              listings of devices on-line, volumes
              mounted and other volume information.

[MakeFile]   creates a file, and asks for the name
              and size.

[MountMgr]   runs the Constellation II Mount Manager
              program allowing you to manage your
              volume access.

[RevBkgnd]   reverses the background of the current
              window, from black to white and vice
              versa.

[RnamFile]   renames a file or volume. Press
              [RnamFile] and answer the questions
              appropriately.

[SelWndow]   allows you to choose one of your
              defined windows and make it the
              current window.

[SetVol]   allows you to set a volume as the
              current volume. The current volume
              is the one where your work is being
              done.

[Spool]   runs the Constellation II spool
              program. This program allows you
              to write files to a special volume
              named Pipes. These files can be
              despooled by a station with a local
              printer using the [Spool] function.

[TmpWndow]   allows you to create a temporary
              window inside the current window.
              The window is not cleared at inception.

One important purpose of the file functions is to help
keep disk space well organized and clear of unwanted
files. Since only 77 files are allowed per volume, you
should periodically remove files that are not needed
anymore. This is done using the Dletfile function and
the Crunch function.

Delete a File

The DletFile function found in the FileMgr labels
allows you to remove files from the directories of
volumes and diskettes. After deleting a file the
operating system no longer recognizes it, since it has
been removed from the volume directory. However, the
file is not actually erased unless you have copied
other information over the address where that file was
placed.

When a file has been deleted from a directory, its
directory entry can be reconstructed with the MakeFile
function described later in this chapter. However,
this works only if other data has not been copied over
the place where the file resided.

To delete a file press [DletFile], type the file name,
press [RETURN], and press Y for yes when prompted.

The following example deletes the file MESS.TEXT from
your current volume called /VOL1.

Press   [DletFile]

The Command window displays:

```
+----------------------------------------------------------+
|                                                          |
| Delete which file(s)?                                    |
+----------------------------------------------------------+
```

Type   MESS.TEXT
Press   [RETURN]

```
+----------------------------------------------------------+
|                                                          |
| Delete which file(s)? MESS.TEXT [RETURN]                 |
+----------------------------------------------------------+
```

The Command window displays:

```
+----------------------------------------------------------+
| Delete file "/VOL1/MESS.TEXT"?                           |
|                                                          |
+----------------------------------------------------------+
```

In order to delete the file, you must press Y for yes
to the prompt shown above. If you do not want to
delete the file press N.

Press Y

The Command window displays:

```
+----------------------------------------------------------+
| Update volume /VOL1 directory?                           |
|                                                          |
+----------------------------------------------------------+
```

This message prompts you for a yes or no answer as to
whether you want the volume directory updated. You
must press Y for yes if you want the file to be
deleted. If you press N the file will not be deleted.

Press Y

The file will be deleted, and you will return to the
FileMgr level, where the select prompt will reappear:

```
+----------------------------------------------------------+
| Update volume /VOL1 directory? Y                         |
| Select FileMgr function:                                 |
+----------------------------------------------------------+
```

To remove a file from a volume that is not your current
volume, you press [DletFile], type the volume name
enclosed in slashes followed by the file name, and then
press [RETURN]. The procedure is exactly the same as
before with the one difference, the volume name must be
specified within slashes.

When you are prompted for the file that you want
deleted simply type /VOL1/ before the file name, as
shown below:

Page 3-26 Workstation

Type   /VOL1/MESS.TEXT

When you are deleting files, you can use an asterisk as
a wild-card character for any number of characters, and
a question mark for single characters.

If you use a wild-card in a file name for DletFile,
FileMgr checks all file names that match the wild-card
file name. One at a time, and in alphabetical order,
the FileMgr asks you if you want to remove the matching
files. When you press Y in response to the prompt, the
file indicated is removed. If you press N, the file
indicated is not removed.

The Q Option. To avoid being prompted for each file
and the "Update volume /VOL1 directory?" prompt, the
DletFile function has a "quiet" option that restrains
this prompt. The quiet option is used by placing -q
before the name of the files that you want deleted.

In the following example, we use this option:

Press   [DletFile]

The Command window displays:

```
+---------------------------------------------------------+
|                                                         |
| Delete which file(s)?                                   |
+---------------------------------------------------------+
```

Type   -Q /VOL2/MESS.TEXT
Press   [RETURN]

```
+---------------------------------------------------------+
|                                                         |
| Delete which file(s)? -Q /VOL2/MESS.TEXT [RETURN]       |
+---------------------------------------------------------+
```

The file will be deleted, and you will return to the
FileMgr level where the select function prompt will
reappear.

Delete a Temporary File

Temporary files are created when files are opened by a
program and not become closed. Normally, these temp-
orary files are deleted automatically when the program
has completed its task. On occasion, errors in the
program you are executing cause the operation to termi-
nate before the temporary file can be automatically
deleted.

It is easy to spot a temporary file when you list your
volume. In the date column a temporary file has three
question marks where the month should be.


```
----------------------------------------------------------

    MESS.I            512    0-???-100   978:  344 data

----------------------------------------------------------
```


Temporary files can be deleted in the same way as
regular files. The DletTemp function uses asterisks
and question marks as wild card characters in the same
way that DletFile does. To delete temporary files,
type the file name then press [DletTemp].

In the example below, the temporary file MESS.I is
deleted from the current volume /VOL1.

Press   [DletTemp]

The Command window displays:


```
+----------------------------------------------------------+
|                                                          |
| Delete which temporary file(s)?                          |
+----------------------------------------------------------+
```


Type   /VOL1/MESS.I
Press   [RETURN]

```
+------------------------------------------------------------+
|                                                            |
| Delete which temporary file(s)? /VOL1/MESS.I [RETURN] |
+------------------------------------------------------------+
```

The Command window displays:

```
+------------------------------------------------------------+
| Delete file "/VOL1/MESS.I"?                                |
|                                                            |
+------------------------------------------------------------+
```

Press Y

The file will be deleted, and you will return to the
FileMgr level, and see the prompt:

```
+------------------------------------------------------------+
|                                                            |
| Select FileMgr function:                                   |
+------------------------------------------------------------+
```

Make a File

MakeFile allows you to create a file. When you make a
file, you are actually creating an entry in the direc-
tory of a volume or diskette.

When you have accidentally removed a file this function
is very helpfull. The file is not actually erased,
unless you have copied other information over the place
where that file resided. That is, a file is not
destroyed unless you have used the Crunch command, or
have saved a file that is the same size or smaller than
the file you accidently erased, and it happened to be
written over your lost file. When a file has been
deleted from a directory, its directory entry can be
reconstructed with the MakeFile function.

To make a file entry, press [MakeFile], type the name of
the file, and specify the number of blocks in length you
want the file to be. Each block is 512 bytes.

Wild-card characters cannot be used with MakeFile.

In the following example, a file twelve blocks long
called BLT.TEXT is created in the current volume.

Press   [MakeFile]

The Command window displays:

```
+----------------------------------------------------------+
|                                                          |
| Make which file?                                         |
+----------------------------------------------------------+
```

Type   BLT.TEXT
Press   [RETURN]

```
+----------------------------------------------------------+
|                                                          |
| Make which file? BLT.TEXT [RETURN]                       |
+----------------------------------------------------------+
```

The Command window displays:

```
+----------------------------------------------------------+
|                                                          |
| How many blocks for file "BLT.TEXT"?                     |
+----------------------------------------------------------+
```

Type   12
Press   [RETURN]

```
+----------------------------------------------------------+
|                                                          |
| How many blocks for file "BLT.TEXT"? 12 [RETURN]         |
+----------------------------------------------------------+
```

When the MakeFile is finished, it gives a message that the
file has been made. The Command window displays:

```
+------------------------------------------------------------+
| File BLT.TEXT[12] made                                     |
| Select FileMgr function:                                   |
+------------------------------------------------------------+
```

When MakeFile creates a file, it searches the volume
directory in which you are creating the file. MakeFile
then creates the file in the first empty space in the
volume large enough for the size you specified. If you
do not specify a size after the file name, MakeFile
creates the file in the largest empty space in the
volume and makes the file one block smaller than the
empty space.

To recreate a lost file, list the volume the file was in
and look for a blank space in the listing:


```
Volume: VOL1, size = 1024 blocks,  3 files
BOLD               512   29-NOV-82    6: 162   data
LETTER.TEXT        512    1-DEC-82  168:  12   text
<...>                                180:  42
OBJECT.TEXT        512    1-DEC-82  222:  34   text
<...>                                256: 768
3 of 3 files listed.
```


The deleted file will appear like the line between
LETTER.TEXT and OBJECT.TEXT in the listing above. The
filename will be replaced with <...>, and the only
information left to identify the file will be its size
and address. To recreate that file enter the FileMgr
and press MakeFile as in the preceding example, and
make a file of exactly 42 blocks length (or however
many blocks your deleted file happens to be). This
will create a file in that space and will allow you to
retrieve the file you thought might have been lost.

If a file was deleted at the end of a volume, that
file's space would appear mixed with the empty space at
the end. There would be no way to determine the size
of the file if you did not have its size in blocks
written down or committed to memory.

Rename a File

RnamFile allows you to rename a file. You cannot use
wild-card characters with RnamFile.

To rename a file, press [RnamFile], type the file name
then press [RETURN]. Next type the new name for the
file, and press [RETURN].

In the following example, the file OLD.TEXT in your
current volume, /VOL1 is changed to NEW.TEXT.

Press   [RnamFile]

The Command window displays:

```
+---------------------------------------------------------+
|                                                         |
| Rename which file?                                      |
+---------------------------------------------------------+
```

Type   OLD.TEXT
Press   [RETURN]

```
+---------------------------------------------------------+
|                                                         |
| Rename which file? OLD.TEXT [RETURN]                    |
+---------------------------------------------------------+
```

The Command window displays:

```
+---------------------------------------------------------+
|                                                         |
| What is new name for file "OLD.TEXT"?                   |
+---------------------------------------------------------+
```

Type   NEW.TEXT
Press   [RETURN]

The Command window displays:

```
+---------------------------------------------------------------+
|    '                                                          |
| What is new name for file "OLD.TEXT"? NEW.TEXT [RETURN] |
+---------------------------------------------------------------+
```

The Command window displays:

```
+-------------------------------------------------------------+
| File "/VOL1/OLD.TEXT" renamed to "/VOL1/NEW.TEXT"        |
| Select FileMgr function:                                  |
+-------------------------------------------------------------+
```

It is possible to rename a volume as well as a file.
To rename a volume is more difficult though. The
volume name should be changed in both CCOS and in the
Constellation II volume tables. The change in
Constellation II must be done by the system manager.
If you change the volume name in one location, but not
the other the volume will have a different name in the
operating system and in theh Constellation II volume
tables. This will cause confusion. Do not change the
volume name without first consulting the system manager.

Copy a File

CopyFile allows you to copy files from one volume to
another. The files will have the original file name.
You specify the source file name and the destination
volume name. You may use wild card characters with
CopyFile and the "quiet" option described in the
"Delete a File" section of this chapter can be used.

When you wish to copy a file from one volume to
another, press [CopyFile]. When you are prompted, type
the name of the file you want to copy then press
[RETURN] (if the file is not in your current volume
remember to precede the file name with the volume name
typed between slashes). Next, type the name of the
destination volume. The file name remains the same.

In the following example the file WORK.TEXT is copied
from volume /VOL1 to volume /VOL2.

Press [CopyFile]

The Command window displays:

```
+------------------------------------------------------------+
|                                                            |
| Copy which file(s)?                                        |
+------------------------------------------------------------+
```

Type   /VOL1/WORK.TEXT
Press   [RETURN]

```
+------------------------------------------------------------+
|                                                            |
| Copy which file(s)? /VOL1/WORK.TEXT [RETURN]               |
+------------------------------------------------------------+
```

The Command window displays:

```
+------------------------------------------------------------+
|                                                            |
| Copy file(s) to which volume?                              |
+------------------------------------------------------------+
```

Type   /VOL2
Press   [RETURN]

```
+------------------------------------------------------------+
|                                                            |
| Copy file(s) to which volume? /VOL2 [RETURN]               |
+------------------------------------------------------------+
```

Copy file then asks for verification:

```
+------------------------------------------------------------+
| Copy file "/VOL1/WORK.TEXT"?                               |
|                                                            |
+------------------------------------------------------------+
```

Press   Y [RETURN]

The Command window displays the results of the copy,
including the length of the file transferred:

```
+--------------------------------------------------------+
| /VOL1/WORK.TEXT copied to /VOL2/WORK.TEXT (10 blocks)  |
| Select FileMgr function:                               |
+--------------------------------------------------------+
```

Copying multiple files is similar to copying a single
file, except that you use the * (asterisk) or **?**
(question mark) wild card character instead of, or
with, a file name. Wild card characters are used in
the same fashion as described previously in this
chapter.

The next example shows how to copy several files. In
this example all the files in /VOL1 that begin with the
letters RES are transferred to the volume /VOL2.

Press   [CopyFile]

The Command window displays:

```
+--------------------------------------------------------+
|                                                        |
| Copy which file(s)?                                    |
+--------------------------------------------------------+
```

Type   /VOL1/RES*
Press   [RETURN]

```
+--------------------------------------------------------+
|                                                        |
| Copy which file(s)? /VOL1/RES* [RETURN]                |
+--------------------------------------------------------+
```

The Command window displays:

```
+--------------------------------------------------------------+
|                                                              |
| Copy file(s) to which volume?                                |
+--------------------------------------------------------------+
```

Type   /VOL2
Press   [RETURN]

```
+--------------------------------------------------------------+
|                                                              |
| Copy file(s) to which volume? /VOL2 [RETURN]                 |
+--------------------------------------------------------------+
```

You will be asked whether you want to copy each of the
files one by one in alphabetical order unless you added
the quiet option (-q) at the end of the line specifying
the destination volume name. If you press Y to each
prompt, or if you used the quiet option the files will
be copied.

If you are transfering a file to a volume that contains
a file by the same name the Concept File Manager will
ask you which copy you want to keep. You will be
prompted:

```
+--------------------------------------------------------------+
|                                                              |
| Delete old "WORK.TEXT" (file dates are the same)?            |
+--------------------------------------------------------------+
```

The prompt will read "(file dates are different)" if
the file dates are not the same. The Concept waits for
a yes or no answer before copying the file or not.

The System window displays the results of the copy,
including the length of each file transferred:

```
----------------------------------------------------------------

  /VOL1/REST            copied to /VOL2/REST          (33 blocks)
  /VOL1/RESULTS.TEXT copied to /VOL2/RESULTS.TEXT (10 blocks)
  /VOL1/RESUME.TEXT  copied to /VOL2/RESUME.TEXT  (12 blocks)
  /VOL1/RESCUE          copied to /VOL2/RESCUE        (56 blocks)

----------------------------------------------------------------
```

The D Option. This option allows you to give the
files you are copying the new system date. If you do
not use this option, the old date (the last time the
file was updated) remains with the file.

You use this option when you are typing the destination
volume name as follows:

Type   /VOL2 -D
Press   [RETURN]


```
+----------------------------------------------------------+
|                                                          |
| Copy file(s) to which volume? /VOL2 -D [RETURN]          |
+----------------------------------------------------------+
```


The S Option. This option strips all escape codes
from a file. If a text file were written in EdWord and
included bold face, or underlined characters, the S
option will strip the enhancements from the text. This
is useful when trying to print a file to a printer that
does not accept escape codes. To use this option

Type   /VOL2/RESUME.TEXT -S
Press   [RETURN]


```
+----------------------------------------------------------+
|                                                          |
| Copy file(s) to which volume? /VOL2/RESUME -S [RETURN] |
+----------------------------------------------------------+
```

Concatenate a File

ConcFile performs two functions: it concatenates
several files into one new file, or it copies a single
file to a file with a new name. In contrast to
CopyFile, you must specify the names of the source file
and the destination file, and you need only type the
volume name if the files are not in the current volume.

Concatenating files means that the files are combined
into one file. The second file named will be appended
to the first file. While specifying the source files,
it is permissible to use wild card characters.

In the following example, the file NOTES.TEXT in your
current volume is copied to the file NTS.TEXT in your
current volume.

Press   [ConcFile]

The Command window displays:

```
+-----------------------------------------------------------+
|                                                           |
| Concatenate which files?                                  |
+-----------------------------------------------------------+
```

Type   NOTES.TEXT
Press   [RETURN]

```
+-----------------------------------------------------------+
|                                                           |
| Concatenate which files? NOTES.TEXT [RETURN]              |
+-----------------------------------------------------------+
```

The Command window displays:

```
+-----------------------------------------------------------+
|                                                           |
| Output concatenated files to where?                       |
+-----------------------------------------------------------+
```

Type   NTS.TEXT
Press   [RETURN]

```
+----------------------------------------------------------+
|                                                          |
| Output concatenated files to where? NTS.TEXT [RETURN] |
+----------------------------------------------------------+
```

The next example shows how to combine two files
PORK.TEXT and BEANS.TEXT, both of which are in your
current volume. BEANS.TEXT is appended to PORK.TEXT
and the output is to a file called PNB.TEXT.

Press   [ConcFile]

The Command window displays:

```
+----------------------------------------------------------+
|                                                          |
| Concatenate which files?                                 |
+----------------------------------------------------------+
```

Type   PORK.TEXT BEANS.TEXT
Press   [RETURN]

```
+----------------------------------------------------------+
|                                                          |
| Concatenate which files? PORK.TEXT BEANS.TEXT [RETURN] |
+----------------------------------------------------------+
```

The Command window displays:

```
+----------------------------------------------------------+
|                                                          |
| Output concatenated files to where?                      |
+----------------------------------------------------------+
```

Type   PNB.TEXT
Press   [RETURN]

```
+--------------------------------------------------------+
|                                                        |
| Output concatenated files to where? PNB.TEXT [RETURN] |
+--------------------------------------------------------+
```

The next example shows how to use the asterisk wild card
to concatenate files. In this example, all the files in
your current volume that match the file name LIST*,
according to wild card rules, are concatenated. Output is
to a file called LST.TEXT

Press   [ConcFile]

The Command window displays:

```
+--------------------------------------------------------+
|                                                        |
| Concatenate which files?                               |
+--------------------------------------------------------+
```

Type   LIST*
Press   [RETURN]

```
+--------------------------------------------------------+
|                                                        |
| Concatenate which files? LIST* [RETURN]                |
+--------------------------------------------------------+
```

The Command window displays:

```
+--------------------------------------------------------+
|                                                        |
| Output concatenated files to where?                    |
+--------------------------------------------------------+
```

Type   LST.TEXT
Press   [RETURN]

```
+--------------------------------------------------------+
|                                                        |
| Output concatenated files to where? LST.TEXT [RETURN] |
+--------------------------------------------------------+
```

List a File

ListFile allows you to display the contents of a text
file in the current window. You can use wild-card
characters with ListFile.

To list a text file, press [ListFile] then type the
name of the file. Once the listing starts, you can
suspend it with [CTRL] S; either a [CTRL] S or a
[CTRL] Q restarts it. To stop a file listing, and
terminate the output press [BREAK].

In the following example, the file NOTES.TEXT in your
current volume is listed.

Press   [ListFile]

The Command window displays:


```
+--------------------------------------------------------+
|                                                        |
| List which files?                                      |
+--------------------------------------------------------+
```


Type   NOTES.TEXT
Press [RETURN]


```
+--------------------------------------------------------+
|                                                        |
| List which file? NOTES.TEXT [RETURN]                   |
+--------------------------------------------------------+
```


The Command window displays the contents of the file.

If the file is not in your current volume, be sure to
enter the volume name between slashes just before the
file name.

Changing a Volume

The ChngVol command allows you to switch the volume
type from UCSD to CCOS or vice versa. The key will
toggle the volume type if you designate the same volume
twice.

To use this function

Press   [ChngVol]

A prompt will appear in the command window:

```
+------------------------------------------------------------+
|                                                            |
| Change which volume?                                       |
+------------------------------------------------------------+
```

If /VOL3 is the volume to be changed

Type   /VOL3 [RETURN]

The volume will be switched from whichever type of
volume it was before to the other. It will tell you
that the change was made, and then return to the File
Manager option prompt.

```
+------------------------------------------------------------+
| Volume /VOL3 is now UCSD format                            |
| Select FileMgr function:                                   |
+------------------------------------------------------------+
```

**WARNING! DO NOT CHANGE THE VOLUMES /CCSYS OR /CCUTIL
          TO UCSD VOLUMES. /CCSYS IS THE BOOT VOLUME
          AND MUST BE CORVUS CONCEPT VOLUME TYPE --
          (CCOS). IF IT IS CHANGED TO UCSD THE SYSTEM
          WILL NOT BOOT.**

Reclaim Volume Space

Crunch reclaims unused volume or diskette space. It
moves all the unused space to the end of the volume,
compacting all files to the beginning of the volume.

To Crunch your current volume, press [Crunch] then
press [RETURN]. To Crunch a volume other than your
current one, press [Crunch] then type the volume name,
and press [RETURN]. You cannot use wild-card
characters with Crunch.

The following example shows how to crunch a volume
named /VOL2.

Press   [Crunch]

The Command window displays:

```
+-----------------------------------------------------------+
|                                                           |
| Crunch which volume?                                      |
+-----------------------------------------------------------+
```

Type   /VOL2
Press   [RETURN]

```
+-----------------------------------------------------------+
|                                                           |
| Crunch which volume? /VOL2 [RETURN]                       |
+-----------------------------------------------------------+
```

Your screen displays the file names in the System window
as they are being moved and when the crunch is done a
message to that affect is displayed:

```
        -------------------------------------------------------

        Moving CRUMB1.TEXT
        Moving CRUMB2.TEXT
        Moving MUNCH.TEXT
        Moving BITS.TEXT
        Moving CRUMB3.TEXT
        Volume /VOL2 crunched


        -------------------------------------------------------
```

WINDOW MANAGEMENT

Windows are user or program defined areas of the
Concept display screen. The window that is current
displays all normal output. When you first log-on to
the Concept three windows are defined by the operating
system: the System window, the Command window, and the
Label window. As far as the user is concerned these
windows are permanent.

The Concept provides you with the means to create and
manage several windows of various sizes and dimensions.
You can create up to seventeen of your own windows.
Each window is a rectangle, and is within the confines
of the System window.

The best way for you to learn how to use the Concept
window functions is to get hands-on experience. The
following are the Window Manager functions: create
window [CreWndow], select window [SelWndow], clear
window [ClrWndow], reverse window background
[RevBkgnd], change scroll [ScrlMode], load keyboard
character set [LdKybdCh], load display character set
[LdDispCh], and run test patterns.

Pressing [WndowMgr] from the Dispatcher allows you to
use the Concept Window Manager utilities. The WndowMgr
labels display below the Command window:

```
+----------------------------------------------------------+
|                                                          |
|                                                          |
| Select WndowMgr function:                                |
+----------------------------------------------------------+
```

```
                    WINDOW MANAGER
        F1        F2        F3        F4        F5
      +--------+--------+--------+--------+--------+
      |        |        |        |        |        |
      +--------+--------+--------+--------+--------+
      |LdDispCh|        |LdKybdCh|        |        |
      +--------+--------+--------+--------+--------+


        F6        F7        F8        F9        F10
      +--------+--------+--------+--------+--------+
      |        |        |        |        |        |
      +--------+--------+--------+--------+--------+
      |ClrWndow|SelWndow|ScrlMode|Help    |Exit    |
      +--------+--------+--------+--------+--------+


         WINDOW MANAGER with [COMMAND] pressed
        F1        F2        F3        F4        F5
      +--------+--------+--------+--------+--------+
      |        |        |        |        |        |
      +--------+--------+--------+--------+--------+
      |        |        |        |        |        |
      +--------+--------+--------+--------+--------+


        F6        F7        F8        F9        F10
      +--------+--------+--------+--------+--------+
      |        |TmpWndow|        |        |        |
      +--------+--------+--------+--------+--------+
      |RevBkgnd|CreWndow|DelWndow|TestPtrn|        |
      +--------+--------+--------+--------+--------+
```

[ClrWndow] clears everything from the current window.

[CreWndow] creates new windows within the System
            window area. To create a new window
            press [CreWndow] and follow the directions
            given. The new window is cleared and
            becomes the current window. To regain
            the original window as current press
            [SelWndow] until the full-sized window
            reappears.

[DelWndow] deletes the current window. After
            selecting the window you want to delete,
            press [DelWndow].

[Exit]   returns you to the Dispatcher level.

[Help]   is left by pressing [ESC].

[LdDispCh]   aloads a display character set. After
                pressing [LdDispCh] type the file name
                of the character set to be used. This
                is discussed in Chapter 5.

[LdKybdCh]   loads a keyboard character set. After
                pressing [LdKybdCh] type the file name
                of the character set to be used. This
                is discussed in Chapter 5.

[RevBkgnd]   reverses the background of the current
                window from black to white, and vice
                versa.

[ScrlMode]   toggles the screen to display in either
                scroll mode or page mode. In page mode
                you must press [CTRL]-S for each new page.

[SelWndow]   allows you to choose one of your defined
                windows and make it the current window.

[TestPtrn]   enters a test pattern program to display
                test patterns on screen.

[TmpWndow]   allows you to create a temporary window
                inside the System window. The window is
                not cleared at inception.

Create Window

In addition to the three permanent windows, CreWndow
allows you to create up to 17 windows. This function
also appears in the Dispatcher labels and the FileMgr
labels.

To create a window, press [CreWndow], move the cursor
to where you want the upper left corner of the new
window and press [RETURN], then move the cursor to
where you want the lower right hand corner of the new
window and press [RETURN].

The CreWndow function measures windows in character
units the size of the character set in the current

window. The following example shows you how to create
a window 34 characters long and 22 characters high.

Press[CreWndow]

The cursor moves to the upper left corner of the system
window and the following message is displayed in the
Command window:

```
+--------------------------------------------------------------+
|                                                              |
| Move cursor to upper left corner and press <return>   |
+--------------------------------------------------------------+
```

Use the cursor keys to move the cursor. Move the cursor
down one space and to the right one space.

Press[RETURN]

The Command window displays:

```
+---------------------------------------------------------------+
|                                                             |.
| Move cursor to lower right corner and press <return>  |
+---------------------------------------------------------------+
```

Move the cursor down two spaces. The Command window
displays:

```
+--------------------------------------------------------------+
| New window size is 1 by 3                                    |
| Move cursor to lower right corner and press <return>  |
+--------------------------------------------------------------+
```

Continue moving the cursor down until the Command window
displays:

```
+--------------------------------------------------------------+
| New window size is 1 by 22                                   |
| Move cursor to lower right corner and press <return>  |
+--------------------------------------------------------------+
```

Move the cursor to the right until the Command window
displays:

```
+-----------------------------------------------------------+
| New window size is 34 by 22                               |
| Move cursor to lower right corner and press <return>      |
+-----------------------------------------------------------+
```

PRESS [RETURN]

When you create a window, the operating system
automatically selects that window as the current window,
draws a box around it, and clears it. As your current
window, it is where all program output is displayed. A
window remains current until you select or create another.

If you put the second corner of your new window along
the same line as the first corner, an error message
displays on the top line of the Command window.

```
+-----------------------------------------------------------+
| Invalid Bounds                                            |
| Select WndowMgr function:                                 |
+-----------------------------------------------------------+
```

If the above message is displayed, you should try again.

Create Temporary Window

In addition to the three permanent windows and the
seventeen user-defined windows, TmpWndow allows you to
create one temporary window.

The procedure for creating a temporary window is exactly
the same as the procedure described in the previous
section for creating windows.

The difference is that when you create a temporary window,
the operating system automatically selects that window as
the current window, draws a box around it, but DOES NOT
clear it. Also, as soon as you select another window as
the current window, the temporary window is deleted.

Delete Window

DelWndow allows you to delete your current window.
However, this window must be one that you created
previously.

When you delete your window, it no longer exists and
cannot be selected until it is re-created.

To delete a window

PRESS [SelWndow]

until the window you want to delete is selected as
current, then

PRESS [DelWndow]

You cannot delete the System window, the Command window,
or the Label window.

Select Window

SelWndow allows you to select the window in which program
output is to be displayed. This function also appears in
the Dispatcher labels and the FileMgr labels.

You can select the System window or any other window
you have created. You must have already created a
window for this function to have any use. SelWndow
selects the windows in the order they were created.
When you select a window, it becomes the current window
and is outlined with a box.

To select the next window

PRESS [SelWndow]

Each time you press [SelWndow] the next window is
selected in the order that they were created. Once the
last window has been selected, the next time you press
[SelWndow] the permanent System window is selected
again.

Clear Window

ClrWndow allows you to clear your current window. This
function also appears in the Dispatcher labels and the
FileMgr labels.

When you clear your window, everything within the bounds
of the window is erased; i.e. graphics and text.

To clear your current window

PRESS [ClrWndow]

When a window is clear, display output starts at the
top of the window; otherwise, it starts where the last
task left off.

Reverse Background

RevBkgnd allows you to change the screen background of
your current window from black to white, or from white
to black. This function also appears in the Dispatcher
labels and the FileMgr labels.

To reverse the background of your current window

Press [RevBkgnd]

If your background is white, press [RevBkgnd] to change
it to black. If your background is black, press
[RevBkgnd] to change it to white.

Scroll Mode

With ScrlMode, you can set your Concept to display
listings one of two ways.

One method of displaying is in the scroll mode. When
you power-on your Concept, it is set for scroll mode,
which means scrolling occurs one line at a time. If
the text being displayed is longer than the window
length, scrolling pushes all lines of text up. The top
line is pushed off the top of the window, and a new

line displays at the bottom of the window. This
process continues until all the text has been scrolled.

The other method of display is the page mode. This
means that text is displayed one page at a time. If
the text being displayed is longer than the window
length, displaying stops when it reaches the bottom of
the window. To continue this type of display, you hold
down the [CTRL] key and press Q.

If your Concept is set for scroll mode, pressing
[ScrlMode] changes it to page mode. The following
message is displayed in the Command window when you
press [ScrlMode]:

```
+--------------------------------------------------------+
| Window is now in page mode                             |
| Select WndowMgr function:                              |
+--------------------------------------------------------+
```

If your Concept is set for page mode, pressing
[ScrlMode] changes it back to scroll mode. A message
displays in the Command window:

```
+--------------------------------------------------------+
| Window is now in scroll mode                           |
| Select WndowMgr function:                              |
+--------------------------------------------------------+
```

DEFINING USERKEYS

There is a file called USERKEYS.TEXT that allows you
to create your own levels of function keys. The system
looks for the file USERKEYS.TEXT in the volume mounted
on unit 5 at boot time, and if it is present,
Userkeys will appear in the Dispatcher level.

The file is a text file, and can be edited using
EdWord. When you first enter the file there are
comment lines which help to instruct you in creating
your own labels. There are already labels present
in the file, but they can be changed by simply typing
over them.

A single userkey is defined by two (or more) lines in
the following manner:

```
-----------------------------------------------------------

(level) (keynumber) (keylabel)
(command)
[optional (command)]

1 0 Pascal
!PASCAL

1 2 EdWord
!ED

-----------------------------------------------------------
```

The exclamation mark before ED or Pascal in the example
above tells the computer that the file is in the system
volume. The same information could be entered as
/CCSYS/ED instead of !ED.

The level of userkeys is either one, two, or three. It
can be thought of as a three story house; you enter
from the Dispatcher level on the first Userkey level,
you can move to the second level, and then on to the
third level in order.

The keynumber defines which function key it will be
placed on. The following list shows the correspondance
between the numbers and the key position.

```
 0 -  9  keys F1 - F10
10 - 19  keys F1 - F10 with shift
20 - 29  keys F1 - F10 with command
30 - 39  keys F1 - F10 with command and shift
```

The keylabel is the name that will appear in the Label
window.

Command is the program name that is to be executed when
the key is pressed. It should specify the volume name
enclosed in slashes followed by the program name, i.e.
/VOL1/MYKEY.

After you have edited the file so that the function
keys will appear as you want them, execute the program
CC.DISPAT. The program reinitializes the Dispatcher

level and includes the new Userkeys. Check to make
sure the keys are correct, and be sure that USERKEYS.TEXT
is in the volume mounted on unit 5. Once you have
placed the file USERKEYS.TEXT in volume 5, userkeys
will be available to you every time you boot the
system.

Normally, after booting the system the Dispatcher level
function key labels display. Userkeys allows the
default level to be changed. If the keynumber of 40 is
found in the first line of the file USERKEYS.TEXT, then
after logging on the Userkeys level specified in the
first line will be displayed. For example, if the
second Userkeys level is to be the default, the first
line of the text file would look like this:

----

2 40

1 0 Pascal
!PASCAL

1 2 EdWord
!ED
     . . .

USING EXEC FILES

An Exec file is a text file that contains a list of
CCOS commands and program names which you want to
execute in a particular order. You can use the Concept
command interpreter to execute, in sequence from top to
bottom, the contents of the list.

Valid entries in an Exec file are: the file name of
any program, and the commands described in "The Corvus
Concept Operating System Reference Manual."

In the following example, several programs are listed
in a text file named DCHECK.TEXT in your current volume
called /VOL1. One program is the Corvus diskette
formatting program, one is the Corvus diskette diag-
nostic program, one is the Corvus disk backup program,
and the last one is the Corvus disk diagnostic program.

Each program name must be on a separate line of the
file.

```
-----------------------------------------------------------

    /CCUTIL/FFRMT
    /CCUTIL/FDIAG
    /CCUTIL/MIRROR
    /CCUTIL/DDIAG

-----------------------------------------------------------
```

ExecFile allows you to run the contents of an ExecFile.
To run these programs from the Dispatcher level

Press[ExecFile]

The Command window displays:

```
+---------------------------------------------------------+
|                                                         |
| Execute which command file?                             |
+---------------------------------------------------------+
```

Type   /VOL1/DCHECK.TEXT
Press[RETURN]

```
+-----------------------------------------------------------+
|                                                           |
| Execute which command file? /VOL1/DCHECK.TEXT [RETURN]    |
+-----------------------------------------------------------+
```

The programs listed in the file above are run in the
order in which they are listed.

Exec files come in handy when you compile or link a
program often. The next example shows how to set up an
Exec file to run the linker for a specific program, which
saves you the effort of typing several file names every
time you want to link the program. The file being linked
is called MAIL.OBJ, which is linked to a unit called
SETBYTE.OBJ and three libraries found in the system
volume.

```
------------------------------------------------------------

    LINKER MAIL SETBYTE !C2LIB !CCLIB !PASLIB

------------------------------------------------------------
```

Do not include /CCSYS/ED (EdWord), or any EdWord
commands in the middle of an
Exec file. This may cause problems with
the workspace you try to enter and may destroy part or
all of the workpad. In order to run EdWord from a
command file be sure that it is the last line of the
file. The workspace name can be specified as follows:

```
------------------------------------------------------------

    !ED /VOL2/W

------------------------------------------------------------
```

Automatic Startup File

Using an Exec file, CCOS commands and programs can be
run automatically when you boot your Concept. To do
this you create an Exec file called STARTUP.TEXT and
place it in the appropriate volume.

When you boot your Concept, CCOS searches the boot
volume and then your personal volume, mounted on unit
number 5, for the file STARTUP.TEXT. If this file
exists in the boot volume or in your personal volume,
it is used as a source of commands to the Operating
System.

For example, if you have certain programs that you want
to run at boot time, you create a text file that lists
file names of these programs. Next, you save a copy of
this text file in the volume mounted on unit number 5
and call the file STARTUP.TEXT.

The following is an example of a startup file created
by EdWord and saved in the volume mounted on unit
number 5:

```
---------------------------------------------------------
    !CC.WNDMGR CSDISP /CCUTIL/CSD.07.11
    !CC.SETDCP UNIT=PRINTER
    !CC.FILMGR SETVOL /VOL2
    !ED W

---------------------------------------------------------
```

The exclamation point used at the beginning of each of
these lines tells the Concept to look at the system
volume; it is an abbreviation for the boot volume.

The first line of the file calls the window manager
program for loading a display character set. The
character set to be loaded is /CCUTIL/CSD.07.11, the
standard character set for use with character enhance-
ments in EdWord.

The second line calls the set data communication param-
eter program. That is where the printer driver is
assigned.

The third line calls the file manager routine for
setting the current volume.

The last line executes the EdWord Editor/Wordprocessor
program, and enters the workspace W in the current
volume.

These command lines may appear confusing, but if any of
these capabilities are appealing you can type the lines
in as is into a file named STARTUP.TEXT and use them.
The only variables in the lines above are the display
character set (/CCUTIL/CSD.07.11), the volume name to
be set (/VOL2), and the EdWord workspace name (W).

For more information on what you can do when you are at
the Exec level, see "The Corvus Concept Operating
System Reference Manual."

USING THE RUNTIME P-SYSTEM

To use the runtime UCSD P-system a few steps must be
performed to ensure that the system will run. The
P-system key will appear in the Dispatcher level, but
it will be inoperative unless the following conditions
are met:

1. The current volume must be a UCSD volume. To
    change a CCOS volume to a UCSD volume use the
    ChngVol function in the FileMgr level. Do not
    change the boot volume to UCSD, since it must be a
    Corvus Concept volume. Always run the p-System
    from another volume.

2. The file CC.PSYSTEM must be in the boot volume
    /CCSYS. The file should already be in /CCSYS,
    which is where the file is placed when the system
    is initialized.

3. The files SYSTEM.PASCAL and SYSTEM.MISCINFO must be
    in the current volume. These files can be copied
    from the volume /CCUTIL.

4. The file SYSTEM.INTERP must be in either the
    current volume or the system volume, /CCSYS. The
    file should already be in /CCSYS, which is where
    the file is placed when the system is initialized.

If all of these conditions are met the P-system can be
used. To enter the p-System

Press [p-System]

All UCSD volumes you have access to will be displayed,
and if there are less than six they will be mounted
automatically. If there are six or more UCSD volumes
the p-System will ask if each volume should be mounted.
A maximum of five optional volumes can be mounted in
the p-System. The current volume is always mounted.
The p-System considers the RAM disk to be a volume, so
it will be included as one of the five volumes from
which you may choose.

A few other details to keep in mind include: the
[CTRL]-S and [CTRL]-Q commands are still used for
stopping and starting screen display, respectively; to

use a printer from the p-System the printer driver must
be set in the CCOS; different character sets and
different window sizes may be used in the p-System, but
they too must be set in the CCOS before entering the
p-System.

In order to leave the p-System and return to the CCOS
press H for Halt; there is no exit key.

This chapter covers the utilities provided with your
Concept; they include system utilities, Corvus disk
utilities, and volume management utilities. The Concept
utilities allow you to take full advantage of the
internal configuration of your Concept Workstation.
There are instructions on using the system utilities,
formatting diskettes, spooling, despooling, and volume
management.

SYSTEM UTILITIES

The System Utilities programs allow you to update,
change, or diagnose certain features of your Concept
system. These utilities include assigning a driver,
setting printer parameters, setting the date, and
setting the time.

Pressing [SysUtils] from the Dispatcher level allows
you to enter the System Utilities level where some of
the utility programs are available.

```
+-----------------------------------------------------------+
|                                                           |
| Select SysUtils function:                                 |
+-----------------------------------------------------------+
```

```
                    SYSTEM UTILITIES
         F1        F2        F3        F4        F5
        +--------+--------+--------+--------+--------+
        |        |        |        |        |        |
        +--------+--------+--------+--------+--------+
        |AsgnDrvr|        |SetDtaCm|SetDate |SetTime |
        +--------+--------+--------+--------+--------+


         F6        F7        F8        F9        F10
        +--------+--------+--------+--------+--------+
        |        |        |        |        |        |
        +--------+--------+--------+--------+--------+
        |EdChrSet|        |        |Help    |Exit    |
        +--------+--------+--------+--------+--------+


         SYSTEM UTILITIES with [COMMAND] pressed
         F1        F2        F3        F4        F5
        +--------+--------+--------+--------+--------+
        |        |        |        |        |        |
        +--------+--------+--------+--------+--------+
        |DrvrVrsn|        |        |        |        |
        +--------+--------+--------+--------+--------+


         F6        F7        F8        F9        F10
        +--------+--------+--------+--------+--------+
        |        |        |        |        |        |
        +--------+--------+--------+--------+--------+
        |        |        |        |        |        |
        +--------+--------+--------+--------+--------+
```

[AsgnDrvr]   assigns a driver to a logical device.
             The general format is: "/CCSYS/DRV.
             EPRNT PRNTER 6 [AsgnDrvr]."

[DrvrVrsn]   lists all the assigned drivers, and
             their devices.

[EdChrSet]   enters the Corvus Concept character
             set editor. Here you may edit, or
             create, your own display character
             sets.

[Exit]   returns you to the Dispatcher level.

[Help]   is left by pressing the [ESC] key.

[SetDate]   sets or displays the current date.

[SetDtaCm]   allows you to set printer parameters
             for a local printer, or assign param-
             eters for data communication with
             other devices connected to the RS-232
             ports.

[SetTime]   sets or displays the current time.

Set Date

SetDate allows you to set or display the current date.
When you power-on the Concept and log-on, a date is
displayed above the upper right corner of the system
window.


```
_____

                               Tuesday, August 24, 1982
     ---------------------------------------------------+
                                                         |
                                                         |

     _____
```


When you first set up your Concept you must set the date
to the current date and set the time to the current time.
Once you set the Concept time, it updates the date every
twenty-four hours. See the next section, "Set Time," for
information on setting the time on the Concept.

If you press [SetDate], the current date displays in the
Command window.

Press   [SetDate]

The Command window displays the following:


```
+---------------------------------------------------+
| Today is 24-Aug-82                                |
| Select SysUtils function:                         |
+---------------------------------------------------+
```

To set the date, enter the following information then
press [SetDate]. The date must be entered in the
following format:

                    DD-MMM-YY

DD is the day, MMM is a three letter abreviation for the
month, and YY is the year. Valid alphabetic abreviations
for months are as follows:

            January - Jan   July   - Jul
            February - Feb   August   - Aug
            March   - Mar   September - Sep
            April   - Apr   October   - Oct
            May   - May   November - Nov
            June   - Jun   December - Dec

In the following example, we set the date to September 13,
1982.

Type   13-SEP-82
Press   [SetDate]

    +--+
    | |
    | Select SysUtils function: 13-SEP-82 [SetDate] |
    +--+

SetDate confirms your change.

    +--+
    | Date set to 13-Sep-82 |
    | Select SysUtils function: |
    +--+

The new date displays above the right corner of the
System window.

```
  ───────────────────────── ──── ── ──── ── ─── ── ── ── ──
                          Monday, September 13, 1982
   --------------------------------------------------+
                                                     |
                                                     |

  ───────────────────── ──── ── ── ── ── ── ── ──────────── ── ──
```

You do not have to type every element of the date every
time you set the date. If the month and year are
already correct, you merely type the day and press
[SetDate]. If the year is already correct, you type
the day, hyphen, the month and press [SetDate].

For example, if the date is set to 12-Aug-82 and today
is August 13, you set the new date as follows:

Type   13
Press   [SetDate]

```
+----------------------------------------------------+
|                                                    |
| Select SysUtils function: 13 [SetDate]             |
+----------------------------------------------------+
```

The date will appear in the Command window. Now you
should set the actual date so that your system will be
accurate.

Set Time

SetTime allows you to set or display the current time.

When you first set up your Concept you need to set the
current time. Once you set the time you will not have
to set it again, since the Concept has batteries that
keep the time going even when the Concept is powered
off. In fact, you should never have to set the date
again either, since the Concept clock updates the date
every twenty-four hours; it even take into considera-
tion leap year.

To display the current time

Press   [SetTime]

The Command window displays the following:

```
+-------------------------------------------------+
| The time is 22:59:04                            |
| Select SysUtils function:                       |
+-------------------------------------------------+
```

To set the time, you must type time information then
press [SetTime]. The time must be entered in the
following format:

                         00:00

The first 00 represents hours in military time
(0 - 23). The next field is minutes.

In the following example, we set the time 9:31 a.m.

Type   09:31
Press   [SetTime]

```
+-------------------------------------------------+
|                                                 |
|                                                 |
| Select SysUtils function: 09:31 [SetTime]       |
+-------------------------------------------------+
```

SetTime confirms your change.

```
+-------------------------------------------------+
| Time set to 09:31:00                            |
| Select SysUtils function:                       |
+-------------------------------------------------+
```

In the following example, we set the time 4:59 p.m.

Type   16:59
Press   [SetTime]

```
+----------------------------------------------------+
|                                                    |
| Select SysUtils function: 16:59 [SetTime]          |
+----------------------------------------------------+
```

Again SetTime confirms the change.

```
+----------------------------------------------------+
| Time set to 16:59:00                               |
| Select SysUtils function:                          |
+----------------------------------------------------+
```

Now enter the current time so that your Concept will
be accurate from now on.

Set Data Communication Parameters

SetDtaCm allows you to set parameters for the type of
printer you are using. It also lets you set the data
communication parameters for the two RS-232 ports on
the Concept. This enables you to communicate with
modems, terminals, or other devices through the RS-232
ports.

The Printer driver must be assigned before a printer
can be used. In other words, the Printer driver must
be activated. The procedure described below enables
you to do this.

Press [SetDtaCm] for the SetDtaCm label display. If
the printer driver is not assigned the Command window
will prompt you for the unit you want activated, and
will assign the printer for you if that is the unit you
select. The default printer values are displayed as
soon as the printer driver has been assigned.

Press   [SetDtaCm]


```
+-------------------------------------------------------+
|                                                       |
| Select Unit:                                          |
+-------------------------------------------------------+
```

The labels change and your choices of units are shown:

```
                            UNIT TYPE
        F1         F2         F3         F4         F5
      +---------+---------+---------+---------+---------+
      |         |         |         |         |         |
      +---------+---------+---------+---------+---------+
      |Printer  |         |DataCom1 |         |DataCom2 |
      +---------+---------+---------+---------+---------+


        F6         F7         F8         F9         F10
      +---------+---------+---------+---------+---------+
      |         |         |         |         |         |
      +---------+---------+---------+---------+---------+
      |         |         |         |         |NoChange |
      +---------+---------+---------+---------+---------+
```

If you select Printer the printer driver is loaded, if
you select DataCom1 you will be setting the commmuni-
cation parameters for the device connected to Port 1,
and if you select DataCom2 you will be setting the
communication parameters for the device connected to
Port 2.

Press [Printer]

This loads the printer driver and displays the default
printer values.

```
+-----------------------------------------------------------+
| Baud rate: 1200   Parity: Space Xmit/Ignore Rcv   Port: 2 |
| Char size: 7 bits   Protocol: Xon/Xoff  Unit: Printer     |
+-----------------------------------------------------------+
```

The default parameters for the two data communication
ports are as follows:

DataCom1:

```
+-----------------------------------------------------------+
| Baud rate: 9600   Parity: Disabled                        |
| Char size: 8 bits   Protocol: Xon/Xoff   Unit: DataComm1  |
+-----------------------------------------------------------+
```

DataCom2:

```
+-------------------------------------------------------------+
| Baud rate: 1200  Parity: Space Xmit/Ignore Rcv              |
| Char size: 7 bits  Protocol: Xon/Xoff  Unit: DataComm2      |
+-------------------------------------------------------------+
```

SET DATA COMMUNICATIONS

```
     F1        F2        F3        F4        F5
+---------+---------+---------+---------+---------+
|         |         |         |         |         |
+---------+---------+---------+---------+---------+
|BaudRate |Parity   |Port     |CharSize |Protocol |
+---------+---------+---------+---------+---------+


     F6        F7        F8        F9        F10
+---------+---------+---------+---------+---------+
|         |         |         |         |         |
+---------+---------+---------+---------+---------+
|Unit     |PrtrFunc |TestMode |PrtrType |Exit     |
+---------+---------+---------+---------+---------+
```

[BaudRate]   allows you to set the baud rate.

[CharSize]   allows you to set character size.

[Exit]   returns you to the SysUtils level.

[Parity]   allows you to set the parity.

[Port]   allows you to select which
              RS-232 port is being setup.

[Protocol]   allows you to set handshake protocol.

[PrtrFunc]   allows you to set the number of
              lines per inch, characters per
              inch, auto line feed ON/OFF, and
              load action tables or alternate
              character tables.

[PrtrType]   allows you to set all the parameters
              according to standard defined printer
              types.

[TestMode]   allows you to test your parameters
                by sending or receiving data character
                by character.

[Unit]   allows you to select the driver
                that will be used. Either the PRINTER
                driver, or the DTACOM driver in one of
                the RS-232 ports.

In the following description of the SetDtaCm labels, each
group of labels includes a NoChange option. Pressing
[NoChange] returns you to the SetDtaCm labels without making
changes.

If instead of Printer you choose DataComl or Datacom2
two of the Set Data Communication (Comm) labels do not
appear. They are the Port label and PrtrType label.
Neither label would apply unless printer parameters
were being set.

PrtrType allows you to set all the SetDtaCm values for
three specific types of printer: a NEC 7710, an Epson
MX-100, and an IDS 460.

Press   [PrtrType]

The PrtrType labels display:

```
                        PRINTER TYPE
     F1        F2        F3        F4        F5         F10
  +---------+---------+---------+---------+---------++---------+
  |         |         |         |         |         || |        |
  +---------+---------+---------+---------+---------++---------+
  |Epson    |NEC      |IDS      |         |         | |NoChange |
  +---------+---------+---------+---------+---------++---------+
```


Press the appropriate key to set the parameters of your
choice. The default values for these printers are as
follows:

EPSON --
```
+-----------------------------------------------------------------+
| Baud rate: 4800   Parity: Disabled   Port: 2                    |
| Char size: 8 bits   Protocol: Line/DSR/Normal   Unit: Printer   |
+-----------------------------------------------------------------+
```

```
NEC --
+----------------------------------------------------------------+
| Baud rate: 1200  Parity: Space Xmit/Ignore Rcv  Port: 2 |
| Char size: 7 bits  Protocol: Xon/Xoff  Unit: Printer    |
+----------------------------------------------------------------+

IDS --
+----------------------------------------------------------------+
| Baud rate: 9600  Parity: Disabled  Port: 2            |
| Char size: 8 bits  Protocol: XON/XOFF  Unit: Printer  |
+----------------------------------------------------------------+
```

BaudRate allows you to set the baud rate. To change
the baud rate, press [BaudRate]. The baud rate labels
display. Select the key that corresponds to the baud
rate on your printer. You will automatically be sent
back to the Set Data Comm level.

```
                         BAUD RATE
       F1        F2        F3        F4        F5
   +--------+--------+--------+--------+--------+
   |        |        |        |        |        |
   +--------+--------+--------+--------+--------+
   |300     |600     |1200    |2400    |4800    |
   +--------+--------+--------+--------+--------+


       F6        F7        F8        F9        F10
   +--------+--------+--------+--------+--------+
   |        |        |        |        |        |
   +--------+--------+--------+--------+--------+
   |9600    |19200   |        |        |NoChange|
   +--------+--------+--------+--------+--------+
```

Parity allows you to set parity. To change parity,
press [Parity]. The Parity labels display. Select the
key that corresponds to the parity setting on your
printer. You will automatically be sent back to the
Set Data Comm level.

```
                          PARITY
       F1        F2        F3        F4        F5        F10
   +--------+--------+--------+--------+--------++--------+
   |        |        |        |        |        ||        |
   +--------+--------+--------+--------+--------++--------+
   |Disable |Odd     |Even    |MrkX/NRc|SpcX/NRc||NoChange|
   +--------+--------+--------+--------+--------++--------+
```

Page 4-12

Port allows you to choose which Concept RS-232 port is
used for output. To change the output port, press
[Port]. The Port labels display. Port 2 is closest to
the Omninet port on the back of your Concept. Select
the key that corresponds to the RS-232 port on the
back of the concept. You will automatically return to
the Set Data Comm level.

PORT

F1	F2	F3	F4	F5		F10
Port 1	Port 2					NoChange

CharSize allows you to change transmission character
size. To Change the character size, press [CharSize].
The CharSize labels display. Select the character size
that corresponds to the setting on your printer. You
will automatically return to the Set Data Comm level.

CHARACTER SIZE

F1	F2		F6	F7	F8		F10
8 Bits	7 Bits		10 CPI	12 CPI	16 CPI		NoChange

Protocol allows you to change to the handshake protocol.
To change the handshake protocol, press [Protocol].
The Protocol labels display. Select the protocol that
corresponds to the setting on your printer. You will
automatically return to the Set Data Comm level.

PROTOCOL

F1	F2	F3	F4	F5		F10
Line	Xon/Xoff	Enq/Ack	Etx/Ack	NoProto		NoChange

Printer functions will allow you to set a number of
printer parameters. The number of characters per inch

and lines per inch may both be set here. The default
value of each is displayed on the screen. Characters per
inch defaults to 10, and lines per inch defaults to 6.

Another parameter that displays with the previous two
in the Command window is the setting for automatic line
feeds (LF). If the printer has a default of LF on, the
Concept's setting should be off, and vice versa. The
settings should be opposite each other.

The commands LdAction and LdAltChr allows you to
load an action table or an alternate character set
translation table. An action table contains the char-
cter sequences for a given printer necessary to perform
certain operations to create enhancements (such as bold
face). An alternate character set translation table
contains the character sequences necessary for a given
printer necessary to perform certain operations to
create the alternate characters found in the upper 127
characters of the alternate character sets. These
tables may be created using the programs BLDACT and
BLDALT found in /CCUTIL. Instructions for using these
programs can be found in the "The Corvus Concept
Operating System Reference Guide."

Pressing [Exit] will return you to the Set Data Comm level.

The Command window and the Label window will appear as
follows:

```
+-------------------------------------------------------------+
|Characters per inch (CPI): 10      Lines per inch (LPI): 6 |
|Auto Line Feed (LF): ON                                    |
+-------------------------------------------------------------+
```

```
                       PRINTER FUNCTIONS
          F1         F2         F3         F4         F5
         +--------+--------+--------+--------+--------+
         |        |        |        |        |        |
         +--------+--------+--------+--------+--------+
         |10 CPI  |12 CPI  |6 LPI   |8 LPI   |LdAction|
         +--------+--------+--------+--------+--------+


          F6         F7         F8         F9        F10
         +--------+--------+--------+--------+--------+
         |        |        |        |        |        |
         +--------+--------+--------+--------+--------+
         |LdAltChr|LF on   |LF off  |        |Exit    |
         +--------+--------+--------+--------+--------+
```

The test mode will allow you to test the communication
parameter settings by sending or receiving data. If
you press [TestMode] you will be prompted for the type
of test it will be. The Command and Label windows
appear as follows:

```
+----------------------------------------------------------+
|                                                          |
| Test mode, Send or Receive :                             |
+----------------------------------------------------------+
```

```
                          TEST MODE
          F1         F2       F3       F4       F5         F10
         +--------+--------+--------+--------+--------++--------+
         |        |        |        |        |        ||        |
         +--------+--------+--------+--------+--------++--------+
         |Send    |Receive |        |        |        ||NoChange|
         +--------+--------+--------+--------+--------++--------+
```

Press   [Send]

The System window will prompt you for the length of the
test sample:

```
    -------------------------------------------------------------

    Enter number of characters to send:


    -------------------------------------------------------------
```

Type in the number of characters that you want to try
as a test of the data communication compatibility.

Type   10
Press   [RETURN]

Another prompt will appear:

```
    -------------------------------------------------------------

    Enter number of characters to send: 10 [RETURN]
    Enter characters to send:


    -------------------------------------------------------------
```

Now type in any characters you choose. If you are testing
the send on a printer, the printer should act as a type-
writer. They should be sent to the printer, or other
device, wihtout problems. If the printer parameters are
not set correctly you should end up with garbage at the
receiving end.

The receive test mode works in essentially the same way
except that the Concept is on the receiving end of the
transmission. You must be hooked up to a device other
than a printer, since a printer is made for one way
communication only and cannot send data to the Concept.

Assign a Driver

A driver is a system program that controls devices,
such as printers, CRTs, disk drives, diskette drives,
and volumes. It is the driver that makes the different
parts of your Workstation interact with each other.

AsgnDrvr allows you to assign a driver to a device. To

assign a driver, press [AsgnDrvr] and enter the neces-
sary information.

The following example shows you how to assign the Concept
printer driver to a printer using AsgnDrvr.

Press   [AsgnDrvr]

The Command window displays:

```
+------------------------------------------------------------+
|                                                            |
| What is driver file ID?                                    |
+------------------------------------------------------------+
```

Type   /CCSYS/DRV.EPRNT
Press   [RETURN]

```
+------------------------------------------------------------+
|                                                            |
| What is driver file ID? /CCSYS/DRV.EPRNT [RETURN]          |
+------------------------------------------------------------+
```

The Command window displays:

```
+------------------------------------------------------------+
|                                                            |
| What is unit name?                                         |
+------------------------------------------------------------+
```

Type   PRINTER
Press   [RETURN]

```
+------------------------------------------------------------+
|                                                            |
| What is unit name? PRINTER [RETURN]                        |
+------------------------------------------------------------+
```

The Command window displays:

```
+--------------------------------------------------------------+
|                                                              |
| What is unit number?                                         |
+--------------------------------------------------------------+
```

Press   6
Press   [RETURN]

```
+--------------------------------------------------------------+
|                                                              |
| What is unit number? 6 [RETURN]                              |
+--------------------------------------------------------------+
```

The unit number is the logical unit number assigned to
the device. A logical unit stands for a general device
identifier, while a physical unit is the specific piece
of equipment you choose to perform that function. CCOS
requires you to select a physical unit, or device, to
perform the function of each logical unit. You must
define each device a logical unit number so that the
computer will recognize the device.

For more detailed information on assigning a driver,
see "The Corvus Concept Operating System Reference
Manual."

List Drivers On-line

DrvrVrsn allows you to list all assgned drivers. To
list the drivers enter System Utilities and press
[DrvrVrsn].

```
+---------------------------------------------------+
|                                                   |
| Select SysUtils function:                         |
+---------------------------------------------------+
```

Press[DrvrVrsn]

```
Unit  0:  /NULL     unblocked  resident   7-Jul-82  NULL device driver
Unit  1:  /CONSOLE  unblocked  loadable   7-Jul-82  SYSTERM driver
Unit  2:  /SYSTERM  unblocked  loadable   7-Jul-82  SYSTERM driver
Unit  4:  /CCSYS      blocked  resident   7-Jul-82  Local disk driver
Unit  5:  /MYSTUFF     blocked  resident   7-Jul-82  Local disk driver
Unit  6:  /PRINTER  unblocked  loadable  14-Jan-83  PRINTER driver (v 1.0)
Unit  9:  /FLOPPY      blocked  loadable   7-Jul-82  8" Corvus floppy disk driver
Unit 10:  /MYVOL1      blocked  resident   7-Jul-82  Local disk driver
Unit 11:  /MYVOL2      blocked  resident   7-Jul-82  Local disk driver
Unit 12:  /MYVOL3      blocked  resident   7-Jul-82  Local disk driver
Unit 28:  /MYVOL4      blocked  resident   7-Jul-82  Local disk driver
Unit 29:  /MYVOL5      blocked  resident   7-Jul-82  Local disk driver
Unit 30:  /SLOTIO   unblocked  resident   7-Sep-82  Corvus disk command driver
Unit 31:  /DTACOM1  unblocked  resident  14-Jan-83  DATACOM driver (v 5.0)
Unit 32:  /DTACOM2  unblocked  resident  14-Jan-83  DATACOM driver (v 5.0)
Unit 33:  /OMNINET  unblocked  resident   7-Jul-82  NULL device driver
Unit 34:  /TIMER    unblocked  loadable  22-Oct-82  TIMER driver
Unit 35:  /KYBD     unblocked  loadable  10-Sep-82  KEYBOARD driver
Unit 36:  /DISPLAY  unblocked  loadable  18-Nov-82  DISPLAY driver
```

   To understand this listing it is best to break it down
   one section at a time. Using the sixth row as an
   example the different columns are analyzed below:

Unit 6: /PRINTER   unblocked   loadable 14-Jan-83   PRINTER driver (v 1.0)

   Unit 6: --

         this is the logical unit number that is
         assigned to the device listed on this line.

   /PRINTER --

         this is the name of the device. In this
         case it is PRINTER.

unblocked --

> this tells us that this device is not
> blocked. A blocked device is capable
> of storing data, such as a volume or
> diskette drive.

loadable --

> this device is loadable, not a resident
> device. It must be loaded in order to use
> it.

14-Jan-83 --

> this is the date that the driver was
> released by Corvus. The date helps to
> differentiate the driver from other
> versions.

PRINTER driver (v 1.0) --

> this is the name of the driver. As you
> can see by the listing there are many
> different drivers, each of which control
> different devices.

DISPLAY TEST PATTERNS

The TestPtrn label in the Window Manager level, allows
you to test the graphics capabilities of the Concept
display screen. One test draws grids, and the other
plots different pixel densities.

From the Window Manager labels

Press [TestPtrn]

The whole screen clears, then the following is displayed:

```
-----------------------------------------------------------

Display Test Patterns

Screen dimensions in pixels:

     Height:    560
     Width:     720

G - Draw grid on screen
P - Fill screen with pattern of specified density
Q - Quit

Pattern will stay on screen until any key is depressed

-----------------------------------------------------------
```

To draw a grid

Press G

The program prompts you for a number:

```
-----------------------------------------------------------

 G  Number of grids [2 - 40]:


-----------------------------------------------------------
```

You may type any number between two and forty. A grid
with that number of bars will be displayed on the screen.

To fill the screen with a certain pixel density

Press P

The program prompts you for a number:

```
-----------------------------------------------------------

 P  Pixel frequency:


-----------------------------------------------------------
```

You may type any number in response. The screen fills
with pixels according to the density that you specify.
For example, if you were to choose 1, every pixel will
be illuminated. If you chose 5, every fifth pixel will
be illuminated, et cetera.

PRINT WINDOW

Another function found in the volume /CCUTIL is the
Print Window utility. It is listed in the directory
as /CCUTIL/PRTWND, and will print whatever appears
in the current window.

Before you may use the Print Window utility you must
make sure that you have a local dot matrix printer
attached to your Workstation, and that your printer
driver has been assigned.

The utility is used by first creating a temporary
window in the System window that encompasses the
area of the screen that you want printed. The create
temporary window command, [TmpWndow], is found in
the Dispatcher level, the Window Manager level, and
the File Manager level.

PRTWND can be used without a temporary window, and can print the entire System window if you choose.

The second step, after having set the window, is to type the command.

Type   /CCUTIL/PRTWND [RETURN]

The window being displayed will be printed on a local dot matrix printer. This utility cannot spool to a shared printer or a file.

THE VOLUME UTILITIES PROGRAM

The program /CCUTIL/VOLUTIL provides a simple method of backing up volumes and diskette and copying diskettes. VOLUTIL also shows the Concept's sysyem status, giving a brief summary of it's configuration.

To execute the volume utility program,

Type   /CCUTIL/VOLUTIL
Press   [RETURN]

A menu appears on the screen with corresponding function keys in the label window:

Valid options are:

    [BckupVol] (B) - Backup volume to floppy disk
    [CopyFlpy] (C) - Copy floppy disk

    [SysmStat] (S) - System status

    [Exit]   (E) - Exit program

Select processing operation:

```
         F1        F5           F6        F10
    +--------++--------+    +--------++--------+
    |        ||        |    |        ||        |
    +--------++--------+    +--------++--------+
    |BckupVol||CopyFlpy|    |SysmStat||Exit    |
    +--------++--------+    +--------++--------+
```

[BckupVol]   is the volume backup program. It allows
             you to backup a volume on a diskettes.

[CopyFlpy]   is the floppy diskette copying program.
             It allows you to write a floppy diskette
             to the hard disk, and then make unlimited
             copies of the diskette.

[Exit]   allows you to leave the program. It
             returns the system to the level of the
             CCOS that you were at before.

[SysmStat]   is the system status report. It tells
             how much memory is available in RAM, what
             types of drives are on-line, and much more.

Backing Up Volumes

The first function in VOLUTIL is the BckupVol program.
This program takes a volume from a hard disk drive, and
transfers it to floppy diskettes. There is not restore
function to this program. If you have a file that has
to go on multiple floppies, it has to be restored
manually. This is done with the FileMgr CopyFile and
ConcFile functions. To run this program

Press   [BckupVol]

The backup program does not include options or other
functions. It asks for the volume's name, which
diskette drive to copy to, and then gives instructions
for switching diskettes as it copies. After pressing
[BckupVol] the screen clears and the first question is
asked:

```
----------------------------------------------------------

Backup which volume?

----------------------------------------------------------
```

```
Type    VOL3
Press   [RETURN]
```

The program looks at the volume and prints the number of
files and allocated blocks on the volume. It must look
at this for its own use to determine how many floppy
diskettes have to be used to make the copy.

```
----------------------------------------------------------

Volume VOL3 contains 12 files (724 allocated blocks)
Backup to which floppy disk unit? 9

----------------------------------------------------------
```

The volume VOL3 contains 724 allocated blocks. This
is the number of blocks that are used, and does not
include the empty space in a volume. The actual size
of VOL3 might be 1024 blocks, 2048 blocks, or any size
capable of holding those files.

The question asks which floppy disk unit number to copy
the information to. The default is unit 9, since that
is the number given the first diskette drive attached
to the Concept. This number is only to be changed if
there are two or more diskette drives attached to the
Concept and the first one is not to be used. The
second drive usually has the unit number 10.

Before accepting this value and pressing [RETURN],
place a diskette in the drive. The program does not
recognize the drive if it does not have any medium for
recording data. In other words there must be a
diskette there so that a volume exists.

Press   [RETURN]

The program gives an instruction here to place the
destination diskette in the drive.

```
--------------------------------------------------------

Insert floppy disk (1 of 2) in unit 9, ready? [Y/N]:

--------------------------------------------------------
```

If the diskette that was placed in the drive is not the
same diskette that the information is to be backed up
on, change it now. Do not be alarmed if you accident-
ally pressed [RETURN] at this point with the wrong
diskette in the drive. The program checks the diskette
for any files.

Press   [RETURN]

If the diskette has any files on it the following
message is given, and a question is asked:

```
--------------------------------------------------------

Volume floppy contains 3 files
OK to delete all files on volume FLOPPY? [Y/N]:

--------------------------------------------------------
```

If this is the proper diskette

Press   Y
Press   [RETURN]

The copy starts at this time, and after each file has
been moved a message appears similar to the following:

```
--------------------------------------------------------

Volume VOL3 file 1ST.PRPOSL.TEXT    backed up ( 17 blocks)

--------------------------------------------------------
```

After a short period of time, the diskette becomes full.
The program stops, and gives another instruction in
the System window and Command window:

```
-----------------------------------------------------------

Remove floppy disk (1 of 2) from unit 9

-----------------------------------------------------------


+-------------------------------------------------------+
|                                                       |
|                                                       |
| Press <space> to continue                             |
+-------------------------------------------------------+
```

Remove the first diskette and

Press   [SPACE]

The procedures are the same for the second and subse-
quent diskettes as for the first. After pressing
[SPACE] the program starts with "Insert floppy disk (2
of 2) ..." and finishes the copy. After this procedure
is completed the diskettes have the names BACKUP1,
BACKUP2, and so on. To change these names to VOL3-1,
VOL3-2, or any other name, use the RnamFile function in
the File Manager.

To leave this program press [SPACE] to the "Press
<space> to continue" instruction after the copy is
complete. To leave it before completing the copy
press [BREAK]. This terminates the task, but does
not provide a useable copy of the diskette that is
being processed at the time.

Copying Floppy Diskettes

The second option in the VOLUTIL utility is the Copy
Floppy program. To run the program

Press   [CopyFlpy]

A new menu displays and the function keys change for
the program. They look like the ones below:

Valid options are:

    [ReadFlpy] (R) - Read floppy disk to work file
    [WritFlpy] (W) - Write from work file to floppy disk

    [SetWorkF] (F) - Set work file name
    [SetFlpyU] (U) - Set floppy unit number
    [DelWorkF] (D) - Delete work file

    [Exit]   (E) - Exit copy floppy processing

Select processing operation:

```
     F1        F5          F6       F7       F8        F10
+--------++--------+  +--------+--------+--------++--------+
|        ||        |  |        |        |        ||        |
+--------++--------+  +--------+--------+--------++--------+
|ReadFlpy||WritFlpy|  |SetWorkF|SetFlpyU|DelWorkF||Exit    |
+--------++--------+  +--------+--------+--------++--------+
```

[DelWorkF]   deletes the work file used by the program
              to store the floppy diskette's information
              on the hard disk.

[Exit]   leaves the CopyFlpy program returning the
              system to the VOLUTIL main menu.

[ReadFlpy]   copies the information from the floppy
              diskette to the hard disk. The work file
              name is the destination file for the read
              floppy function.

[SetFlpyU]   sets the unit number ot the floppy diskette
              drive that is communicating with the
              program. The default is unit 9. With only
              one floppy diskette drive attached this
              number will never need to be changed.

[SetWorkF]   sets the work file on the hard disk that is
              used by the program to transfer the disk-
              ette's data from one diskette to another.
              The file defaults to the file name
              ...FLOPPY.DATA in the current volume. The
              volume must have 500 blocks available space
              in order to use this program.

[WritFlpy]   copies the information from the hard drive
              to the diskette. It is used for creating
              the duplicate after the original file has
              already been written to the disk using the
              ReadFlpy function.

This program is used to make one or more copies of a
floppy diskette. By first using the ReadFlpy option to
copy the floppy onto the hard disk. Nest the hard disk
file is copied onto as many other diskettes as is
desired using the WritFlpy option.

Setting the Floppy Unit Number. The SetFlpyU option is
the least commonly used option available. The floppy
diskette drive's logical unit number is defaulted to 9
by the program. The first diskette drive attached to a
Concept has a logical unit number of 9. This option is
only used when there is a second floppy diskette drive
connected to the Concept, and that drive is being used
for the CopyFlpy function instead of the first.

To change the floppy unit number

Press   [SetFlpyU]

The following prompt is written in the System window:

Select floppy unit number: 9

Type   10
Press   [RETURN]

The floppy unit number is changed and the CopyFlpy menu
reappears.

Setting the Work File. Setting the work file is a far
more commonly used option. The work file contains 500
blocks of information that is needed only as long as
the copies are being made. The work file must be in
a volume that has 500 blocks of available space.

Since the default work file name is ...FLOPPY.DATA it
is sent to the current volume. If the current volume
does not have 500 free blocks an error message is
displayed.

Find a volume that has 500 free blocks, VOL7 for this
example, and set the work file name to a file in that
volume.

Press   [SetWorkF]

Enter new work file name: ...FLOPPY.DATA

The default of ...FLOPPY.DATA appears on the screen,
but any file name can be entered.

Type   /VOL7/COPYFLOPPY
Press   [RETURN]

The work file name is set and the CopyFlpy main menu
reappears.

Reading a Floppy Diskette. Reading a floppy diskette
is the first step in actually copying a diskette.

ReadFlpy copies the information from the diskette to
the file specified as the work file. To begin the copy

Press   [ReadFile]

The following is displayed on the screen, although
the numbers on the right are constantly changing as
the copy progresses:

```
-------------------------------------------------------

     Source file: Floppy unit 9          8

Destination file: /VOL7/COPYFLOPPY       7    <

-------------------------------------------------------
```

Each time a block is copied the numbers incremenent by
one. As soon as the numbers reach 500 the floppy has
been copied to the appropriate file and the CopyFlpy
menu reappears.

If this function has been performed already and the
work file has not been deleted a prompt appears right
after pressing [ReadFlpy]:

```
-------------------------------------------------------

File already exists, delete it? [Y/N]:

-------------------------------------------------------
```

The file mentioned is the old work file, and if yes is
answered here only that file is destroyed. The floppy
diskette will not be damaged or affected in any way.
To continue from this point press Y and the program
continues.

Writing a Floppy Diskette. Writing a floppy diskette
is very similar to reading the diskette. Before a
diskette may be written, the ReadFlpy function must
have been performed to create a work file full of data.

WritFlpy sends the information from the work file to
the diskette in the drive. There must be a work file
available to copy, and the work file name must be the
same as it was when it was written. The file name
does not have to be changed unless CopyFlpy was exited,
otherwise it remains the same. To begin the copy

Press   [WritFlpy]

There is one question to answer, and it appears every
time a copy is made.

Destroy data on floppy disk? [Y/N]:

This question is asked regardless of whether there are
actually any files on the disk. Do not be overly
concerned when this appears after putting in a diskette
that was supposed to be new or blank. It probably is
blank. But on the same token, do not put in a diskette
that has any information that is going to be needed
later, it will be destroyed.

Press   Y

The copy begins, and the screen display is the same as
the ReadFlpy, with one exception: the source file is
/VOL7/COPYFLOPPY and the destination file is Floppy
unit 9.

This function does not destroy the work file, so
WritFlpy can be performed over and over to create as
many floppy diskette copies as is desired.

As soon as the copy is complete the CopyFlpy menu
reappears.

Deleting the Work File. There is a key that deletes
the work file automatically, so that the volume space
can be regained without going out of the program to
the File Manager. To delete the work file

Press   [DelWorkF]

A message appears and the main menu stays in place:

Workfile /VOL7/COPYFLOPPY deleted ....

System Status Information

This program gives information regarding the hardware
and other internal parts of the Concept. There is
information on: the slot assignments, to tell what
devices are attached to the Concept; Corvus disk
parameters, to tell what types of drives are attached,
what size they are, the ROM, and the type of firmware
on the disk; system parameters to tell about the size
of memory in the machine, the stack pointer position,
the Boot PROMs in the machine, and more; the amount of
code and stack memory available given both in numbers
and through a graphic display.

RUNNING THE TERMINAL EMULATOR

The terminal emulator program allows a Concept to speak
with other computers and act as a terminal.

There are a few options which may be specified when
calling the terminal emulator program. Those options
include the DataCom port that is being used to connect
the Concept and the other computer, and whether the
automatic line feed should be on or off for both the
send and recieve signals.

The terminal emulator may be called by typing
/CCUTIL/TERMINAL and pressing [RETURN]. None of the
options have been specified, and the first prompt that
appears will be as follows:

*** No DataCom port specified on command line
    For DATACOM 1 use DC1, for DATACOM 2 use DC2

Select DataCom port [DC1/DC2]: DC1

To set the DataCom port to port 1 before entering the
terminal emulator

Type   /CCUTIL/TERMINAL UNIT=DC1

Press   [RETURN]

The prompt shown above does not appear, and the terminal
emulator is set to communicate with whatever device is
connected to DataCom 1. In order to communicate accur-
ately with the other computer the auto line feed
settings should be designated. These settings are made
in the command line. The format for doing this is:

/CCUTIL/TERMINAL UNIT=DC1 SENDALF=ON RCVALF=ON

Each of the parameters is optional and the auto line
feed options default to on. The unit number is not
optional.

Once in the terminal program starts the function keys
change to appear as follows:

```
                    TERMINAL EMULATOR
          F1           F5              F6          F10
      +--------++--------+      +--------++--------+
      |        ||        |      |        ||        |
      +--------++--------+      +--------++--------+
      |File    ||Printer |      |ClrWndow||Exit    |
      +--------++--------+      +--------++--------+
```

The Command window will show the following prompt:

```
+-------------------------------------------------------+
|                                                       |
| Output to screen only                                 |
| Enter text or select function:                        |
+-------------------------------------------------------+
```

Characters sent from the Concept DataCom port can be
saved in a text file or sent to a printer. To send
the output to a file press [File] and type the desired
output file name.

Press   [File]

The Command window will display the following:

```
+-------------------------------------------------------+
|                                                       |
|                                                       |
| Enter file name: ...ECHO.TEXT                         |
+-------------------------------------------------------+
```

To accept the file name ...ECHO.TEXT press [RETURN].

To change the name type the desired name and press
[RETURN]. A file will be created at this point even if
the file is not used. The file key will toggle the
output: by pressing the [File] key again the output
will not be sent to a file, only the screen. The same
is true for the [Printer] key. To send the output to a
printer as well

Press   [Printer]

The Command window will now appear as follows:

```
+-------------------------------------------------------+
| Output to file ...ECHO.TEXT and Printer               |
| Enter text or select function:                        |
+-------------------------------------------------------+
```

At this point the Concept is set up as a terminal and
may operate as one. Any input recieved by the Concept
is sent to a file or printer as specified.

The ClrWndow key operates as it does in the Dispatcher
or File Manager levels, and the Exit key will stop the
program and return to the level that was current before
the terminal emulator was run.

FORMATTING DISKETTES

The Concept diskette drive uses eight-inch single-sided
single-density 3740 type diskettes. Before you can use
diskettes with the Corvus Concept diskette drive, the
diskettes must be formatted.

Make sure your diskette drive is connected to the Concept,
and has been powered on. For instructions on connecting
the diskette drive read "The Corvus Concept Diskette
Drive Installation Guide."

To format a diskette, run the program FFRMT, which can be
found in the volume /CCUTIL and on the distribution
diskette /FCCUTL2.

Place a new diskette in the diskette drive.

Type   /CCUTIL/FFRMT
Press   [RETURN]

The following is displayed in the Command window:

```
+-----------------------------------------------------------+
| Corvus Concept 8" Floppy Diskette Formatter 11-May-82 |
| Format which unit number : #                              |
+-----------------------------------------------------------+
```

Since a diskette drive is normally mounted on logical
unit number nine, we respond with a 9 to the above prompt.

Press 9
Press [RETURN]

The Command window displays:

```
+-----------------------------------------------------------+
| Corvus Concept 8" Floppy Diskette Formatter 11-May-82 |
| Do you want to initialize the diskette only? (Y/N)    |
+-----------------------------------------------------------+
```

If the ddiskette is already formatted, but not initial-
ized, the above prompt is displayed to ask you if you
want to only initialize the diskette directory and not
format the diskette as well. If you respond with a Y
for Yes, you will not be prompted to format the
diskette. Since the disk is already formatted we could
answer Y for yes and not reformat the diskette.
However for our example we want to format our diskette,
so we respond with an N for No.

Press N

The Command window displays:

```
+-----------------------------------------------------------+
| Corvus Concept 8" Floppy Diskette Formatter 11-May-82 |
| Do you want to verify the format? (Y/N)               |
+-----------------------------------------------------------+
```

If you press Y for Yes in response the above prompt, the
format is checked as it is formatted. The diskette is
formatted much faster without verification.

Press N

The, following is displayed briefly in the Command window:

```
+-----------------------------------------------------------+
| Corvus Concept 8" Floppy Diskette Formatter 11-May-82 |
| Initializing the directory.                             |
+-----------------------------------------------------------+
```

Then the following is displayed briefly in the Command
window:

```
+-----------------------------------------------------------+
| Corvus Concept 8" Floppy Diskette Formatter 11-May-82 |
| Formatting the diskette.                                |
+-----------------------------------------------------------+
```

Formatting is complete in a few minutes. Repeat this
process for each diskette you need formatted.

If you try to format a diskette that is already initial-
ized, the following is displayed in the Command window:

```
+-----------------------------------------------------------+
| Corvus Concept 8" Floppy Diskette Formatter 11-May-82 |
| Is it ok to format volume FLOPPY?                       |
+-----------------------------------------------------------+
```

If you respond with a Y for Yes, the diskette will be
reformatted. If you respond with N for No, the program
is aborted.

MAKING DISKETTES BOOTABLE

Before you can boot from a diskette, you must make the
diskette bootable. This can be done with Corvus
utility program called WRITEBOOT, which can be found in
the volume /CCUTIL and on the distribution diskette
/FCCUTL2.

To make a diskette bootable, run the program WRITEBOOT
from the Dispatcher level.

Type   /CCUTIL/WRITEBOOT
Press   [RETURN]

The following is displayed in the System window:

    WRITEBOOT - Write the boot routine   07-Oct-82

    Source file -

This program uses another file that is found in /CCUTIL
also. This file is called FLPY.BOOT.

Type   /CCUTIL/FLPY.BOOT
Press   [RETURN]

The following is displayed in the System window:

    WRITEBOOT - Write the boot routine   07-Oct-82

    Source file - /CCUTIL/FLPY.BOOT
    Destination disk unit number - 9

Next, we must enter the logical unit number of the
diskette, which is normally 9.

Press   9
Press   [RETURN]

The following is displayed in the System window:

```
------------------------------------------------------------

    WRITEBOOT - Write the boot routine    07-Oct-82

    Source file -  /CCUTIL/FLPY.BOOT
    Destination disk unit number -  9
    Depress <return> to continue

------------------------------------------------------------
```

Press [RETURN]

In a few seconds, the following is displayed in the
System window:

```
------------------------------------------------------------

    WRITEBOOT - Write the boot routine    07-Oct-82

    Source file -  /CCUTIL/FLPY.BOOT
    Destination disk unit number -  9
    Depress <return> to continue
    NEW BOOT WRITTEN

------------------------------------------------------------
```

The boot blocks have been written on the diskette when
the last line above is display. The diskette must also
contain the each of the following files from /CCSYS
before you can boot from it:

```
CC.KERNEL        DRV.DISPHZ        DRV.ADISK
CC.SETUP         DRV.DISPVT        DRV.FDISK
CC.DISPAT        DRV.KYBD          CSD.DEFAULT
CC.EXEC          DRV.SYSTRM        CSK.DEFAULT
CC.FILMGR        DRV.TIMER         ASSIGN
CC.WNDMGR
```

SPOOLING AND DESPOOLING

One of the main purposes of a local area network is to
allow a number of people to share disk files and peri-
pheral equipment. The Corvus Constellation II Spool
program can be used to perform these functions. The
Spool program can either send or receive files from a
special volume named Pipes.

Once a file has been sent, or spooled, to the Pipes
volume it remains there until it is removed, or
despooled. When a file is despooled from the Pipes
area the destination may be set to a printer, a file,
or the console.

The spool program has been developed so that a Concept,
or other brand of computer that is Corvus disk
compatable, may despool files that have been sent to
the Pipes area.

Spooling a File

Spool can be found in the File Manager level. To run
the Spool program

Press   [FileMgr]
Press   [Spool]

The following will display in the system window:

```
     Slot 1 contains no disk interface
     Slot 2 contains no disk interface
     Slot 3 contains an 8 inch Corvus floppy disk
     Slot 4 contains no disk interface
     Slot 5 contains an OMNINET interface
       .


     Enter active slot [5]:        5
```

Since the default slot is 5 no change is required to
spool a file to the pipes area on the shared Omninet
disk drive.

Press   [RETURN]

If a number is entered that does not correspond to a
valid slot, Spool will respond with "Invalid slot
number" and will wait for a new number to be entered.
Valid slot numbers are given within brackets on the
prompt line.

To leave a function at any time while running the Spool
program press the [ESC] key.

Spool Options. Some of the default options may need
to be changed before spooling a file.

Press   O

The following menu will appear in your System window:

    Spool   Despool

    F(ormatted   : TRUE   L(inefeeds   : TRUE
    I(nclude   : {$I   E(xpand Tabs   : 8
    N(ew Page   : .PG   M(ax lines/page : 55
                                  W(here   : LinePrinter
    .   H(eader   : TRUE
                                  T(railer   : TRUE

    Q(uit   P(ipe name   : PRINTER

Enter options :

    Options are divided into two groups: spool options on
    the left half of the screen, and despool options on the
    right half of the screen. When spooling a file, only
    the following options are used:

    F(ormatted   --   can be true of false. The default,
                      true, indicates that the file being
                      spooled is to add carriage returns
                      and linefeeds. False indicates that
                      the file is not to be formatted, and
                      should be spooled as is.

    I(nclude   --   can be any string of three characters.
                      If matching characters are found as
                      the first three characters of a line
                      in the text file being spooled, then
                      the spooler will include the file
                      whose name follows the character string
                      at that point in the file being
                      spooled.

    N(ew Page   --   can be any string of three characters.
                      If matching characters are found in
                      the text file being spooled, a form
                      feed character is placed in the spooled
                      file.

P(ipe Name -- can be any name eight characters long.
                The default name of PRINTER is normally
                used for sending files to the pipe area
                that are to be printed.

If the file being spooled is not a text file, F(ormatted
should be changed to FALSE. To do this enter the
option level and press F.

Press   F

Since there are no choices to be made F(ormatted will
automatically change to FALSE, and the formatting
options I(nclude and N(ew Page will disappear. If F is
pressed again it will change back to TRUE and the
options will reappear.

When spooling a text file the formatted option should
be TRUE.

The N(ew page string .PG is the default. When spooling
a file created by EdWord the N(ew Page option will have
to be changed. If however, you wish to change the N(ew
page string

Press   N

The following will appear:

Enter option : N
Set newpage to blank to turn off newpage check
Enter new page prefix: .PG

Type   {$I

The N(ew page string will be changed in the option
table, and the "Enter options" prompt will display
again.

The I)nclude option allows th eprinting of multiple
files together. On any line of a file a string of
three characters followed by the name of another file
may be specified. When the spooler finds this include
string it will look for a filename following it and

include that file in the spool. After the file has
been included the spooler returns to the original file
and continues to spool any remaining lines.

To change the include string

Press   I

The following will appear:

Enter option : I
Set include to blank to turn off include check
Enter include prefix: {$I

Type   .IN
Press   [RETURN]

The include string will be changed in the option table
and the "Enter options" prompt will display again. The
following is an example of how an include string may be
used in a text file:

. . . At this point I would like to show you a copy of
the memo that was sent to all employees on December 7.
..I /VOL1/MEMO.TEXT
As you can see, the memo . . .

The file MEMO.TEXT in volume /VOL1 would be included in
the spool after the line containing ". . . December 7."
The spool would then continue with the line "As you can
see. . ."

The lost spool option is the P)ipe Name. The default
pipe name is PRINTER. It can be any string up to eight
characters in length. A different pipe name is used
when there are two or more shared printers To change
the pipe name

Press   P

The following will appear:

```
-------------------------------------------------------
```

Enter option : P
Enter pipe name: PRINTER

```
-------------------------------------------------------
```

Type   LETTER
Press   [RETURN]

The pipe name is now LETTER, and it appears in the
options list.

After all the options have been set press Q to quit,
and the original menu will appear.

```
-----------------------------------------------------------
```

   Active slot for Spooling/despooling is   5

  Select option [S)pool D)espool O)ption Q)uit A)lt slot]:

```
-----------------------------------------------------------
```

Spool. Now that the options are set the file can be
spooled.

Type   S

The following prompt will appear:

```
---------------------------------------------------
```

Enter file name to be spooled:

```
---------------------------------------------------
```

Type   /VOL1/NEW_FILE [RETURN]

A second prompt will appear:

```
-----------------------------------------------------------------

   Enter file name to be spooled : /VOL1/NEW_FILE
   Enter message to be sent with spool. (80 characters max.) :

-----------------------------------------------------------------
```

Type a message to go with the file. This is useful
when files are printed.

Type   THIS LISTING IS FOR THE BOSS [RETURN]

The file will be spooled to the pipename LETTER. While
it is being spooled a series of dots will appear across
the screen and will be followed by a message when the
spool is complete:

```
----------------------------------------------------------------

   Spooling file to pipe LETTER[ 1]

   ...............

            15 blocks written to pipe LETTER[ 1]


   Enter file name to be spooled:

----------------------------------------------------------------
```

The file has now been spooled, and is waiting to be
despooled from the Pipes volume.

Despooling a File

Now that the file has been spooled to the Pipes volume
it needs to be retrieved with the despooler option of
the Spool program. The despooler is described in "The
System Manager's Reference Manual."

VOLUME MANAGEMENT

Only a limited number of volumes can be handled by CCOS
at any one time. There are two command labels in the
Dispatcher level that control volumes. They are the
Constellation II label, and the Mount Manager label.

The Mount Manager allows you to control which volumes
you have mounted, and the Constellation II function
allows the system manager to manipulate volumes and
user accounts. The Constellation II level is for the
exclusive use of the system manager and will not be
covered in this guide. Its use is discussed in detail
in "The Corvus Concept System Manager's Reference
Manual."

If you have many volumes in your account, you may find
that you cannot access them all. To be accessible, a
volume must be mounted.

To run the Mount Manager program, use the MountMgr
function in the Dispatcher level.

PRESS [MountMgr]

The following labels are displayed:

```
                          MOUNT MANAGER
          F1         F2         F3         F4         F5
        +--------+--------+--------+--------+--------+
        |Change  |        |        |Display |        |
        +--------+--------+--------+--------+--------+
        |volume  |        |        |volume  |        |
        +--------+--------+--------+--------+--------+


          F6         F7         F8         F9         F10
        +--------+--------+--------+--------+--------+
        |List Vol|        |Select  |        |        |
        +--------+--------+--------+--------+--------+
        |Mounted |        |drive   |HELP    |EXIT    |
        +--------+--------+--------+--------+--------+
```

In the Command window the Mount Manager's main menu is
displayed:

```
---------------------------------------------------------------

    Mount Manager [#.#]        DS LOCAL
    Main menu                  DRIVE *
    User name: JOE
    -----------------------------------------------
        D - Display volume table
        C - Change volume status
        L - List volumes mounted

        S - Select drive

        H - Help
        E - Exit
    -----------------------------------------------
    Please select an option:

---------------------------------------------------------------
```

Each of the commands may be entered by either the
appropriate function key, or by its corresponding letter
as is shown in the table above.

The help command in the Mount Manager routine is very
limited, and will write only small descriptions of
the different commands. To look at the help commands,

Press   [HELP]
or
Press   H

The following message will display in the Command
window:

```
--------------------------------------------------------

   Mount Manager [#.#]        DS LOCAL
   Help menu                  DRIVE *
   User name: SMGR
--------------------------------------------

   D(isplay      - Display volumes accessible
     Volume

   L(ist         - List volumes mounted.
     Volumes

   E(xit         - Terminate Mount Manager utility.

   S(elect       - Select a new drive to supervise.
     Drive

   C(hange       - Change volume attributes.
     Volume

-------------------------------------------

   Press <space> to continue, or
   press F to list to a file.

--------------------------------------------------------
```

PRESS [SPACE]

A better description of these commands is:

[Change Volume]   -- This command allows you to change
                        any of the attributes of a volume
                        including whether it is mounted
                        or unmounted, the unit number
                        assigned to it, and its access
                        [either read-write (RW), or
                        read-only (RO)].

[Display Volume]   -- This command displays a table
                       that includes the names of all
                       volumes in your account, their
                       mount status, and access (RW, or
                       RO).

[Exit]   -- This exits the Mount Manager
                       level, and return you to the
                       Dispatcher.

[Help]   -- This displays the help message
                       shown above.

[List Vol Mounted] -- This command displays a table
                       like the one in Display Volume.
                       The difference is that this table
                       shows only those volumes that are
                       mounted. Both tables will be the
                       same if all volumes are mounted.

[Select Drive]   -- This allows you to select any
                       drive to which you have access,
                       in order to mount or unmount
                       volumes that are included in your
                       account on the particular drive.

If you looked carefully you would have noticed a line at
the bottom of the help message that said,

 Press <space> to continue, or
 press F to list to a file.

If you press [SPACE] you will return to the Mount
Manager's main menu. This same line is displayed at
the bottom of the Help, Display volume, and List Vol
Mounted function tables. You may send the information
in any of those tables to a file or to the printer by
following these steps:

PRESS F

The program responds by prompting you with a default of
/PRINTER:

```
-------------------------------------------
  Press <space> to continue, or
  press F to list to a file.
  Enter name of file: /PRINTER

------------------------------------------------------------
```

You must have a local printer attached with the printer
driver assigned in order to send the table to a
printer. You may send the table to a file:

TYPE /VOL1/TABLE.TEXT

Now the information in the table is located in the file
TABLE.TEXT in VOL1, and it could be spooled to a printer
so that you do not need to enter Mount Manager every
time you want to see it.

Display Volumes Accessible

To display a list of the volumes available to you on a
particular drive

Press   [Display Volumes]

The following table will appear:

```
-----------------------------------------------------------

  Mount Manager [#.#]          DS LOCAL
  Display volume table   .DRIVE *
  User name: JOE
-------------------------------------------------

  Drive:       Drivel
  Volume       Unit RW Type
  VOL7           12  x Corvus Concept
  CCSYS           4  x Corvus Concept
  CCUTIL         11  x Corvus Concept
  VOL1            5  x Corvus Concept
  VOL3           13  x Corvus Concept
  VOL2           14  x Corvus Concept
  VOL5           15  x Corvus Concept

  Number of volumes accesible:    7

-------------------------------------------

  Press <space> to continue, or
  press F to list to a file.

-----------------------------------------------------------
```

Display Volumes Mounted

To display a list of the volumes mounted for you on a
particular drive

Press   [List Vol Mounted]

The following table will appear:

```
----------------------------------------------------------------

   Mount Manager [#.#]        DS LOCAL
   List volumes mounted    DRIVE *
   User name: JOE
   ----------------------------------------

   Volume        Unit RW Type
   CCSYS            4  x Corvus Concept
   CCUTIL          11  x Corvus Concept
   VOL1             5  x Corvus Concept
   VOL3            13  x Corvus Concept
   VOL2            14  x Corvus Concept
   VOL5            15  x Corvus Concept

   Number of volumes accesible:   7

   ----------------------------------------

   Press <space> to continue, or
   press F to list to a file.

----------------------------------------------------------------
```

Selecting a Drive

If the system has more than one drive attached, or a
local drive and a network attached drive, and the drive
that was boot from is not to be changed, the new drive
must be selected. To do this

Press   [SELECT DRIVE]

The following will appear:

```
--------------------------------------------------------------

    Mount Manager  [#.#]        DS LOCAL
    Select drive               DRIVE *
    User name: JOE
--------------------------------------------
    Enter drive information:

        Slot 2 contains a Corvus disk interface
        Slot 5 contains an OMNINET interface

        Slot number  [2,5]:  2


--------------------------------------------------------------
```

If the drive is a local drive press [RETURN], but if
the desired drive is on Omninet press 5 and [RETURN].

Press   [RETURN]

The Concept will then answer the next prompt itself and
continue as follows:

```
--------------------------------------------------------------

        Slot number  [2,5]:  2

                Server name: LOCAL

                Drive name: Drivel

--------------------------------------------------------------
```

If the Concept has only one drive attached locally both
prompts are automatically answered by the program, and
it will return to the main menu. If there is more than
one local drive the program will skip the server name
and wait for an answer to the drive name question.
Type the name of the desired drive and press [RETURN].

Changing Volume Attributes

To make any change of a volume's attributes enter the
Mount Manager and then,

PRESS [Change volume]

All changes to a volume can be made in this program.
After pressing [Change volume] the following is
displayed in the System window:

```
------------------------------------------------------------

 Mount Manager [#.#]        DS LOCAL
 Change volume table     DRIVE *
 User name: JOE
-----------------------------------------

 Current volume attributes:

         Volume name:

------------------------------------------------------------
```

Type in the name of a volume, in this example volume
VOL7 which is not mounted will be mounted.

TYPE VOL7
PRESS [RETURN]

The program will continue:

```
-------------------------------------------------------------

   Mount Manager [#.#]        DS LOCAL
   Change volume table    DRIVE *
   User name: JOE
-------------------------------------------

   Current volume attributes:

              Volume name: VOL7
             Mount Status: Unmounted
               Mount Unit: *
                   Access: RW

   Change to:
              Volume name: VOL7
             Mount status: Mounted
      Unit number (5,9..30): 12
           Access (RO/RW): RW

   OK to change attributes (Y,N)?Y

-------------------------------------------------------------
```

Each of the items in **bold face** in the above example are
default values given by the program. The program will
stop at each of these points to ask if you want to
enter any changes in the volume's attributes. Simply
type over the default prompt to make any change, or
press [RETURN] to keep the old value. In the above
example M for mounted was typed when the mount status
was questioned. The volume will now be mounted.

You may change your access from read-write (RW) to read-
only if you need to, and that change is reversible.

If your volume access is set to read-only (RO), you may
not change it, and the program will skip that section.
In order to gain access to a volume, or have a volume
changed from read-only to read-write you must consult
your system manager.

To exit the program press [Exit]. Before being returned
to the Dispatcher level a prompt appears asking if
these changes should be made permanently or not. If
not, these changes remain in effect until the Concept
is reboot or powered off.

```
-----------------------------------------------------------
Do you wish to save the changes permanently? Y
-----------------------------------------------------------
```

To remember the changes, and write them to the disk.

Press   [RETURN]

Each System window of the Concept can be set to display
a unique character set. These character sets can be
changed whenever you choose. They can be changed for
the particular window they are in, or the character
sets themselves can be changed, edited.

At power-on, the System window, the Commmand window,
and the Label window each have the default character
set found in /CCSYS/CSD.DEFAULT.

You can change the character set used by the System
window by assigning a new set to that window. You can
also create additional windows and assign them new
character sets using the LdDispCh function from the
Window Manager level.

Character sets are stored in files. When a new window
is created it is automatically assigned the character
set, found in the current window. After creating a
window, its character set can be re-assigned to one of
your own making or be one of the character sets found
in the volume /CCUTIL. These files are: CSD.06.10,
CSD.06.10.ALT, CSD.07.11, CSD.07.11.ALT, CSD.09.14.ALT.
The file CSD.06.10 is the same as the default character
set found in /CCSYS.

A Concept character set can contain up to 256 elements,
or characters. Most character sets, including the
default set, have only 128 characters. If a character
set has 256 characters, the second 128 characters are
displayed when the [ALT] key is held down and a key is
pressed.

Load a Character Set

Loading a character set is very simple. From the
Dispatcher labels, press [WndowMgr]. The two function
keys labeled LdDispCh and LdKybdCh are used to load
character sets. They are each discussed below.

Load Display Character Set

LdDispCh allows a display character set other than the
default to be loaded.

To do this select the window where the character set is
to display. In the following example we use the
character set CSD.09.14.ALT, in the volume /CCUTIL.

Press   [LdDispCh]

The Command window displays:

```
+----------------------------------------------------------------+
|                                                                |
| Enter name of character set file:                              |
+----------------------------------------------------------------+
```

Type   /CCUTIL/CSD.09.14.ALT
Press   [RETURN]

```
+-------------------------------------------------------------------+
|                                                                   |
| Enter name of character set file: /CCUTIL/CSD.09.14.ALT [RETURN]  |
+-------------------------------------------------------------------+
```

In the Command window a message is displayed that says
the display character set has been loaded.

```
+--------------------------------------------------------------+
| Display character set /CCUTIL/CSD.09.14.ALT loaded           |
| Select WndowMgr function:                                    |
+--------------------------------------------------------------+
```

Load Keyboard Character Set

LdKybdCh loads a keyboard character set other than the
default. The Concept does not come with an alternate
set. The only set is the QWERTY set CSK.DEFAULT
corresponding to the keyboard provided.

In the following example we load the character set in
the file CSK.DEFAULT.

Press   [LdKybdCh]

The Command window displays:


```
+-------------------------------------------------------------+
|                                                             |
| Enter name of keyboard character set file:                  |
+-------------------------------------------------------------+
```


Type   CSK.DEFAULT
Press   [RETURN]


```
+----------------------------------------------------------------+
|                                                                |
| Enter name of keyboard character set file: CSK.DEFAULT [RETURN] |
+----------------------------------------------------------------+
```


A message is displayed in the Command window that says the
keyboard character set has been loaded.


```
+--------------------------------------------------------------+
| Keyboard character set CSK.DEFAULT loaded                    |
| Select WndowMgr function:                                    |
+--------------------------------------------------------------+
```

ALTERNATE CHARACTER SET

The Corvus-supplied alternate character sets contain
characters for most of the 256 possible keys. The
second 128 characters are called by pressing the [ALT]
key, and contain modified vowels and symbols. The
modified vowels are arranged so that, as far as
possible, their positions can be remembered easily.
The correspondance between shifted and unshifted char-
acters is the same.

To use the alternate characters either CSD.09.14.ALT,
CSD.07.11.ALT, or CSD.06.10.ALT must be loaded as was
shown in the previous section. In this example we use
CSD.09.14.ALT, the largest of the three alternate char-
acter sets.

Once the set is loaded the alternate characters may be
used by holding down the [ALT] key and pressing any
key.

In general the rules for using alternate characters are
that holding down [ALT]:

o   and pressing a vowel produces the umlauted version
    of that vowel.

o   and pressing the preceding alphabetical character to
    the vowel produces the grave accented version of
    that vowel. An exception to this rule is O since
    N is used for n.   To get the grave accented O,
    use M.

o   and pressing the succeeding alphabetical character
    to the vowel produces the acute accented version of
    that vowel.

o   and pressing the second succeeding alphabetical
    character to the vowel produces the circumflex
    version of that vowel.

The tables on the following two pages show the ASCII
number, hexidecimal number, keyboard symbol and char-
acter. The second table shows the upper half of the
alternate character set. To use these keys the [ALT]
key must be held down. These charts can be very
helpful when using the character set editor, as well as
on other occasions when the alternate character set is
used.

ASCII Character Set Table

ASCII	HEX	KEYTOP	CHAR	ASCII	HEX	KEYTOP	CHAR
32	20	SPACE	SPACE	80	50	P	P
33	21	!	!	81	51	Q	Q
34	22	"	"	88	52	R	R
35	23			83	53	S	S
36	24	$	$	84	54	T	T
37	25	%	%	85	55	U	U
38	26	&	&	86	56	V	V
39	27	'	'	87	57	W	W
40	28	(	(	88	58	X	X
41	29	)	)	89	59	Y	Y
42	2A	*	*	90	5A	Z	Z
43	2B	+	+	91	5B	[	[
44	2C	,	,	92	5C		
45	2D	−	−	93	5D	]	]
46	2E	.	.	94	5E		
47	2F	/	/	95	5F		
48	30	0	0	96	60		'
49	31	1	1	97	61	a	a
50	32	2	2	98	62	b	b
51	33	3	3	99	63	c	c
52	34	4	4	100	64	d	d
53	35	5	5	101	65	e	e
54	36	6	6	102	66	f	f
55	37	7	7	103	67	g	g
56	38	8	8	104	68	h	h
57	39	9	9	105	69	i	i
58	3A	:	:	106	6A	j	j
59	3B	;	;	107	6B	k	k
60	3C	<	<	108	6C	l	l
61	3D	=	=	109	6D	m	m
62	3E	>	>	110	6E	n	n
63	3F	?	?	111	6F	o	o
64	40	@	@	112	70	p	p
65	41	A	A	113	71	q	q
66	42	B	B	114	72	r	r
67	43	C	C	115	73	s	s
68	44	D	D	116	74	t	t
69	45	E	E	117	75	u	u
70	46	F	F	118	76	v	v
71	47	G	G	119	77	w	w
72	48	H	H	120	78	x	x
73	49	I	I	121	79	y	y
74	4A	J	J	122	7A	z	z
75	4B	K	K	123	7B	{	{
76	4C	L	L	124	7C	|	|
77	4D	M	M	125	7D	}	}
78	4E	N	N	126	7E		
79	4F	O	O	127	7F		

ASCII Character Set Table

ASCII	HEX	KEYTOP	CHAR	ASCII	HEX	KEYTOP	CHAR
160	A0	SPACE	SPACE	208	D0	P	ó
161	A1	!	¡	209	D1	Q	ô
162	A2	"	¢	210	D2	R	ø
163	A3			211	D3	S	Å
164	A4	$	¤	212	D4	T	Ù
165	A5	%	º	213	D5	U	Û
166	A6	&	▪	214	D6	V	Ú
167	A7	'	L	215	D7	W	Ü
168	A8	(			216	D8	X	Œ
169	A9	)	·⌐	217	D9	Y	ŵ
170	AA	*	┼	218	DA	Z	ç
171	AB	+	↑	219	DB	[	š
172	AC	,			220	DC	\	µ
173	AD	-	—	221	DD	]	¶
174	AE	.	·	222	DE	^	°
175	AF	/	↑	223	DF	_	_
176	B0	0	‾	224	E0		
177	B1	1	β	225	E1	a	à
178	B2	2	¼	226	E2	b	á
179	B3	3	⅓	227	E3	c	â
180	B4	4	¾	228	E4	d	è
181	B5	5	ω	229	E5	e	é
182	B6	6	∝	230	E6	f	ê
183	B7	7	⌐	231	E7	g	ê
184	B8	8	⌐|	232	E8	h	ì
185	B9	9	⌐	233	E9	i	ï
186	BA	:	Σ	234	EA	j	í
187	BB	;	†	235	EB	k	î
188	BC	<	‖	236	EC	l	æ
189	BD	=	≡	237	ED	m	ò
190	BE	>	·	238	EE	n	ñ
191	BF	?	¿	239	EF	o	ö
192	C0	@	À	240	F0	p	ó
193	C1	A	Ã	241	F1	q	ô
194	C2	B	Á	242	F2	r	ø
195	C3	C	Â	243	F3	s	å
196	C4	D	È	244	F4	t	ù
197	C5	E	Ë	245	F5	u	ü
198	C6	F	É	246	F6	v	ú
199	C7	G	Ê	247	F7	w	û
200	C8	H	Ì	248	F8	x	œ
201	C9	I	Ï	249	F9	y	ÿ
202	CA	J	Í	250	FA	z	ß
203	CB	K	Î	251	FB	{	«
204	CC	L	Æ	252	FC			¢
205	CD	M	Ò	253	FD	}	»
206	CE	N	Ñ	254	FE		
207	CF	O	Ö	255	FF		

EDIT A DISPLAY CHARACTER SET

Corvus provides a character set editor so that anyone
can create their own character set or modify an existing
one. The EdChrSet label is found in the SysUtils
level. The character set editor creates five separate
windows inside the System window.
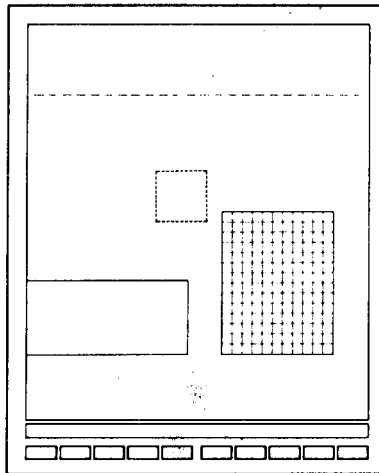
In the example below, we use the character set in the
file CSD.09.14.ALT.

To run the character set editor

Press   [SysUtils]
Press   [EdChrSet]

The first window to be displayed is the Parameter window.

   Character Set Editor, V.I22

The Command window prompts for the name of the
character set. We are using an existing character set
file for this example. However, if you respond with
[RETURN] at this point, the Editor asks in the
Command Window "New File? Y." Pressing [RETURN] again
starts a new file by prompting for the cell size.

```
+-------------------------------------------------------------+
| Character set file:                                         |
|                                                             |
+-------------------------------------------------------------+
```

Type   /CCUTIL/CSD.09.14.ALT
Press   [RETURN]

```
+-------------------------------------------------------------+
| Character set file: /CCUTIL/CSD.09.14.ALT [RETURN]         |
|                                                             |
+-------------------------------------------------------------+
```

After typing the name of the character set file,
EdChrSet displays the current character set parameters
for this file in the Parameter window.

```
-----------------------------------------------------------

    Width:          9
    Height:         14
    First char:     32
    Last char:      255

-----------------------------------------------------------
```

In the Command window, EdChrSet asks if the parameters
are to be changed.

```
+-------------------------------------------------------------+
| Character set file: /CCUTIL/CSD.09.14.ALT                  |
| Change parameters? Y                                        |
+-------------------------------------------------------------+
```

A response of N for No, causes EdChrSet to use the
previous parameters for the set. A response of Y for
Yes, causes EdChrSet to prompt for the new parameters.
Since Y is the default prompt

Press [RETURN]

```
+------------------------------------------------------------------+
| Character set file: /CCUTIL/CSD.09.14.ALT                        |
| Change parameters? Y [RETURN]                                    |
+------------------------------------------------------------------+
```

The Command window is cleared, and the new parameter
prompts display one at a time in this window. The
first prompt is for the dot height of the character
cell, (or Grid window).

Each individual character is contained in what is
called a cell. It is a rectangle of dots, or pixels,
that make up the shape of the character. The cell can
be as large as 16 x 16 dots.

The previous dot width for CSC.09.14.ALT was 9. We
will change this parameter to 11.

Type   11
Press [RETURN]

```
+------------------------------------------------------------------+
|                                                                  |
| Width (1 - 16)? 11 [RETURN]                                      |
+------------------------------------------------------------------+
```

The next prompt is for the dot height of the character
cell. The previous dot height for CSD.09.14.ALT was
14. We will not change this.

Press [RETURN]

```
+------------------------------------------------------------------+
| Height (1 - 16)? 14 [RETURN]                                     |
| Width (1 - 16)? 11                                               |
+------------------------------------------------------------------+
```

EdChrSet prompts for the first character number. This
is the ASCII number which represents the character.
This is usually 32, which is the previous first
character number for CSD.09.14.ALT. We will not change
this parameter either.

Press   [RETURN]

```
+-------------------------------------------------------------+
| Height (1 - 16)? 14    First (32 - 255)? 32 [RETURN]        |
| Width (1 - 16)? 11                                          |
+-------------------------------------------------------------+
```

The next prompt is for the last character number. This
number can be up to 255, which is what CSD.09.14.ALT
was set at. This can be changed to any number between
32 and 255 as long as the number is greater than the
first character number just entered. We will cut this
file in half by changing this to 127 for our example.
Don't worry! This change affects only the copy of this
file being used, not the one the Concept has saved on
the disk drive. When we are done we can save this file
under a new file name, and CSD.09.14.ALT will be the
same as before.

Type   127
Press   [RETURN]

```
+-------------------------------------------------------------+
| Height (1 - 16)? 14    First (32 - 255)? 32                 |
| Width (1 - 16)? 11     Last (32 - 255)? 127 [RETURN]        |
+-------------------------------------------------------------+
```

When this is done EdChrSet asks if these are the param-
eters that you really want to work with. Pressing N,
causes EdChrSet to start again from the "Width?"
prompt. Since Y is the default prompt,

Press   [RETURN]

```
+-------------------------------------------------------------+
| Height (1 - 16)? 14    First (32 - 255)? 32                 |
| Width (1 - 16)? 11     Last (32 - 255)? 127  OK? Y [RETURN] |
+-------------------------------------------------------------+
```

As soon as [RETURN] is pressed, EdChrSet displays the
new parameters in their window, and the EdChrSet labels
at the bottom of the screen.

                         CHARACTER EDITOR
          F1   F2   F3   F4   F5
        +---------+---------+---------+---------+---------+
        | | | | | |
        +---------+---------+---------+---------+---------+
        |Test | |SaveFile | |Select |
        +---------+---------+---------+---------+---------+

          F6   F7   F8   F9   F10
        +---------+---------+---------+---------+---------+
        | | | | | |
        +---------+---------+---------+---------+---------+
        | | | | |Exit |
        +---------+---------+---------+---------+---------+

    [Exit]   gives an opportunity to save the
                  file before returning to the
                  SysUtils level.

    [SaveFile]   asks for the name of the file
                  that the character set is to be
                  saved to. It provides the original
                  filename as the default.

    [Select]   places the character that the
                  cursor is on at that moment into
                  the character grid, and enters
                  the edit mode.

    [Test]   enters the test mode. From there
                  any new characters can be tried in
                  combination, and the character
                  enhancements can be used.

    A 14 by 11 grid is displayed in the Grid window.
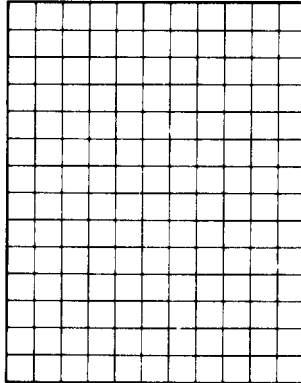
The character set is displayed at the top of the screen
in the character set window. The cursor displays at
the upper left corner of this window. The cursor arrow
keys are used to move the cursor to the character you
want to change.

The Command window displays the ASCII number of
each character. The number changes as the cursor
moves. Move the cursor to the capital J character.
The following displays in the Command window:

```
+-----------------------------------------------------------+
| ASCII 74                                                  |
|                                                           |
+-----------------------------------------------------------+
```

To work on the character

Press   [Select]

Three things happen: 1) 12 real-sized copies of the
letter display in the Character window;   2) an enlarged
version of the letter displays in the Grid window;   3)
and a new set of labels displays at the bottom of the
screen. The Character window is shown below:

```
    --------------
        JJJJ
        JJJJ
        JJJJ
    --------------
```
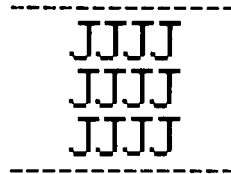
The Character window shows what the character looks like at normal size.

The Grid window lets you see and work on the dot arrangement of the character.
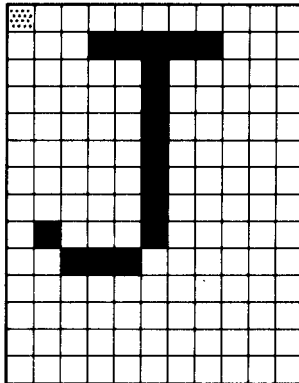
The new set of labels are the editing labels. A brief description of them is given here:

EDITING LEVEL

F1	F2	F3	F4	F5
				Ins Line
Save Ch	Abandon		Copy Ch	Ins Col

F6	F7	F8	F9	F10
Del Line		Set Col	Set Line	
Del Col	Clear Ch	Clr Col	Clr Line	Flip

[Abandon]   leaves the select mode, without
              saving the character.

[Clear Ch]   clears the entire Grid window
              allowing the creation of a character
              from scratch.

[Clr Col]   turns off all the pixels in the
              column, or changes them to black.

[Clr Line]   turns off all the pixels in the
              line, or changes them to black.

[Copy Ch]   asks for a keyboard character.
              That character is entered into
              the Grid window.

[Del Col]   deletes the column that the cursor
              is presently on, and moves all
              columns to the right of the
              cursor one space to the left.

[Del Line]   deletes the line that the cursor
              is presently on, and moves all
              lines below the cursor up one row.

[Flip]   changes the color of the pixel
              the cursor is presently on. It
              turns the pixel on and off like a
              light switch.

[Ins Col]   inserts a column where the cursor
             is, and all columns from the cursor
             position to the right are moved
             one column to the right.

[Ins Line]   insert a line where the cursor
             is, and all columns below the cursor
             are moved down one row.

[Save Ch]   saves the character that is
             presently in the Grid window in the
             location where the character is that
             is being edited.

[Set Col]   turns all the pixels in the
             column on, or turn them white.

[Set Line]   turns all the pixels in the line
             on, or turn them white.

A special cursor is displayed in the upper left corner
of the Grid window. To move this cursor use the cursor
arrow keys on the keyboard.

Before moving the cursor

Press [Flip]

The square containing the cursor turns white.   (The
images in the diagrams have the opposite color of the
actual screen. This is because of the black background
on the screen, and the white color of the paper.)
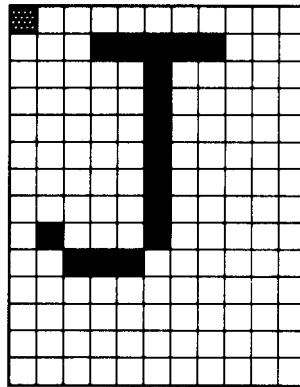
Notice that this change occurs in the Character window
also. All changes made in the Grid window are reflected
in the Character window.

To change the corner box back to black, press [Flip]
again.

Now move the cursor down two rows, so that it is just
below the bar on the top of the J. It is very easy
to manipulate the shape of a character as you will see
if you follow along with these instructions.

Press   [Ins Line]

The entire body of the character should move down one
row. Your figure should appear like the one on the
left below. If you then decide to fill in the line,

Press   [Set Line]

The line should fill in completely, and the grid should
look like the one below and on the right.
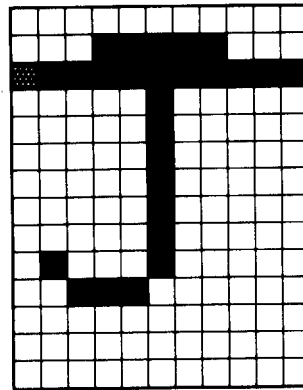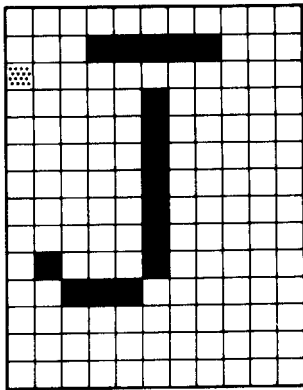
Now if you decided that you wanted that line cleared
the way it was before the last command,

Press   [Clr Line]

The figure should return to the form it was in prev-
iously. If that was not enough of a corrective measure
the Del Line function will reverse the previous action.

Press   [Del Line]

The line will be deleted and the J should appear as it
did at first.

Now try moving the cursor to the right five spaces.
The cursor should be on the verticle line of the J.

Press   [Ins Col]

The J will be split by this action. Everything from
the cursor right will be moved one column to the right,
as it appears in the picture below.

Press   [Set Col]

The column that the cursor is on should now be lit.
The character in the grid window is looking less and
less like the letter J now, and should appear like the
character in the picture on the right.
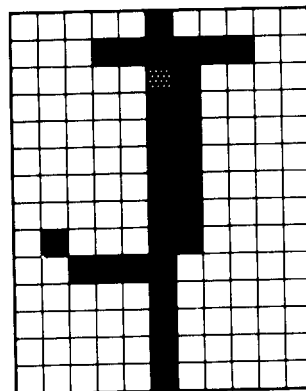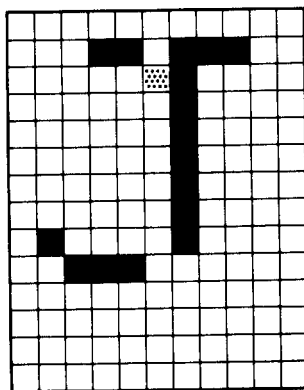
Just as was the case with the Set Line and Clr Line
keys, there is a Clr Col for the Set Col.

Press   [Clr Col]

The J is taking its previous steps in reverse. Rather
than deleting the column now, let's make the J wider.
Move the cursor up one line and press [Flip]. Then
move the cursor down eight lines, so that it is even
with the bottom of the J, and press [Flip] again. The
J should appear as it does below.
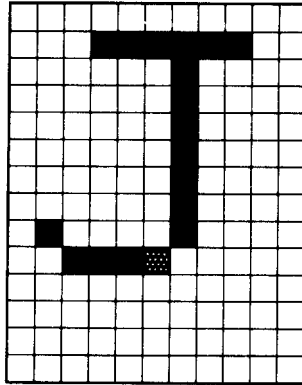
Let's move on to a different character now. The wide
J is not really worth keeping at this time, so we can
leave the edit mode, and return to the select without
saving the character.

Press   [Abandon]

The old J and the cursor are now in the Character Set
window, and the labels have returned to their original
level.

Move the cursor to the letter E.

Press   [Select]

The capital letter E is now in the Grid window, and the
labels have returned to the edit mode. The command
window tells you where you are.

```
+-----------------------------------------------------------+
| Editing ASCII 69                                          |
|                                                           |
+-----------------------------------------------------------+
```

The grid window will appear as below.
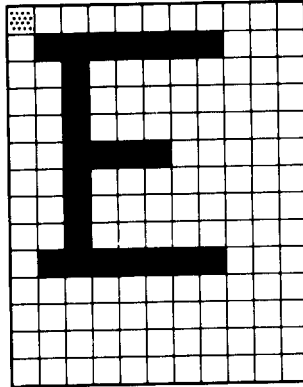
If you want to rearrange the characters in your file,
you can begin by moving the J into the E character
space.

Press   [Copy Ch]
Press   J

The Command window displays the following message
briefly as the character is being changed.

```
+-------------------------------------------------------------+
| Copying ASCII 74                                            |
|                                                             |
+-------------------------------------------------------------+
```

The character that is being edited is still the E, but
at this time it appears as the letter J. Since you
already have a letter J lets clear the grid and start
with a new slate.

Press   [Clear Ch]

The entire grid clears. Try moving the cursor from
place to place, and use the Flip, Set Line, and Set Col
commands. See what sort of character you can create.

If you like the character save it.

Press   [Save Ch]

The new character and the cursor are now in the Char-
acter Set window where the letter E used to be. You
are now at the select level again.

If you want to save the file at this point,

Press   [SaveFile]

A prompt is displayed in the Command window asking for
the filename you wish to save the character set in.

```
+------------------------------------------------------------+
| Filename:   /CCUTIL/CSD.09.14.ALT                          |
|                                                            |
+------------------------------------------------------------+
```

The default file is the filename of the file being
edited. Usually this is the file to save to, but in
this case you do not want to, since the letter E has
been changed to some other figure.

Type   /VOL1/CSD.MYSET

The file has been created and the character set has
been saved.

The other useful key at this level is the Test key.
This key enters the test mode, so that characters can
be seen in combination with others.

Press   [Test]

The cursor moves to the test window, and a new set of
labels appears.

```
                           TEST
        F1        F2        F3        F4        F5
   +--------+--------+--------+--------+--------+
   |        |        |        |        |        |
   +--------+--------+--------+--------+--------+
   |Bold    |UndrLine|Dbl UndL|        |        |
   +--------+--------+--------+--------+--------+


        F6        F7        F8        F9        F10
   +--------+--------+--------+--------+--------+
   |        |        |        |        |        |
   +--------+--------+--------+--------+--------+
   |ClrWndow|RevBkGnd|        |        |Exit    |
   +--------+--------+--------+--------+--------+
```

[Bold]   makes all the characters typed
              appear in bold face. The second time
              it is hit turns off the bold face.

[ClrWndow]   clear the test window of all characters.

[Dbl UndL]   places a double-thick line under
              each character that follows.

[Exit]   leaves the test mode and return
              to the select mode.

[RevBkGnd]   reverses the background from white
              to black and vice versa.

[UndrLine]   places a line under each character
              typed. The second time it is pressed
              it is turned off.

To see how large the Test window really is,

Press   [RevBkGnd]

Now the Test window and the Character Set window are
clearly defined. Type any characters that you want.
If you type a capital E, the character you created
appears. Try some of the character enhancements
next.

Press   [Bold]
Type   This is in BOLD FACE. [RETURN]
Press   [Bold]

The Test window should look as follows:

This is in BOLD FACE.

Press   [UndrLine]
Type   This is underlined. [RETURN]
Press   [UndrLine]

The Test window should look as follows:

This is in BOLD FACE.
<u>This is underlined.</u>

Press   [Dbl UndL]
Type   This is double-underlined. [RETURN]
Press   [Dbl UndL]

The Test window should look as follows:

This is in BOLD FACE.
<u>This is underlined.</u>
<u>This is double-underlined.</u>

To leave the test mode

Press   [Exit]

This causes the Concept to return to the main menu.
To leave the character set editor

Press   [Exit]

This returns you to the System Utilities level, but
first the editor prompts you regarding the file:

```
+-------------------------------------------------------+
| Save character set file on disk? Y                    |
|                                                       |
+-------------------------------------------------------+
```

By typing N for No, the editor asks if you are sure.
Type Y and [RETURN]. Otherwise the editor prompts you
as it does below:

```
+-------------------------------------------------------+
| Filename? /CCUTIL/CSD.09.14.ALT                       |
|                                                       |
+-------------------------------------------------------+
```

Type in the new name for the character set, so that the
old one will not be affected.

Type   /VOL1/CSD.MYSET [RETURN]

The System Utilities labels appear and other areas of
the Concept can be used and explored.

```
                                        |
                          PERIPHERAL    |
                                        |  6
                          CONNECTIONS    |
                                        |
```

This chapter discusses peripheral connections for the
Concept and how to change the orientation of the video
display unit. This information is useful for setting
up a workstation with many different applications.

The first sections explains peripherals and boot types.
The last section covers changing the video display unit
orientation.

TYPE OF BOOT

There are three different boot devices available on the
Corvus Concept: diskette boot, local disk drive boot,
and Omninet boot. The type of boot can be selected by
setting the microswitches (boot switches) in the
Concept drawer.

The peripheral device must be connected to the appro-
priate port on the Concept for each type of boot. Then
you must set the boot switches inside the pull-out
drawer on the back of the Concept to the appropriate
settings.
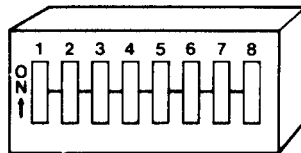
Switches 1 through 6 are used to set the Omninet address
for each workstation in a network. The Omninet address

number is displayed next to the word "Station:" above
the System window on your screen when the network tap
cable is connected. The proper settings for these
switches can be found in the booklet called "Corvus
Omninet Installation Guide."

Switches 7 and 8 are used to set the type of device
from which the Concept will boot. The following table
describes the available settings for these switches.

SWITCH 8	SWITCH 7	TYPE OF BOOT
Off	Off	Boot from diskette
On	On	Prompt for type of boot
Off	On	Boot from Omninet
On	Off	Boot from local disk

When the Concept is set to boot from diskette, Omninet,
or local disk, the Concept boots immediately when it is
powered on.

If you select the second type of boot mentioned in the
table above, the following displays in the System
window when you power-on the Concept.

    CORVUS CONCEPT INITIALIZATION (#.#)
    (C) COPYRIGHT 1982 CORVUS SYSTEMS, INC.
    ALL SYSTEM TESTS PASSED

    SELECT BOOT DEVICE (D,F,L,O):

You are offered a choice of which type of boot you want.
Press a key on your keyboard that corresponds to one of
the letters described below to select the boot device.

D - allows access to debugger, only if you have
    the MACSbug debugger ROMs in your Concept.

F - will allow you to boot from the floppy disk-
    ette drive.

L - will allow you to boot from a local Corvus
    disk drive.

O - will allow you to boot from an Omninet
    network.

DISKETTE CONNECTION

The Corvus diskette drive interface card can be plugged
into any of the four slots in the Concept pull-out
drawer.
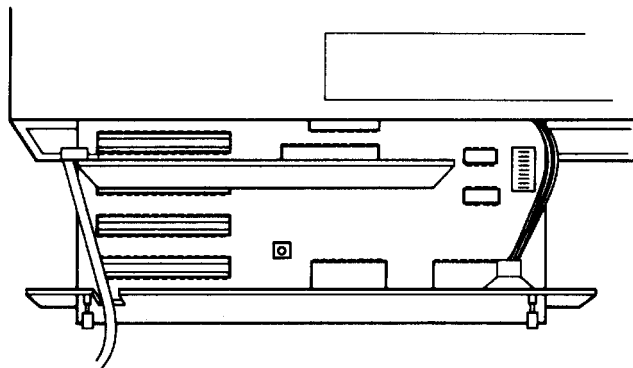
To boot from the diskette drive, set the boot switches
as described in the previous section.

LOCAL DISK DRIVE CONNECTION

The Corvus disk drive can be plugged into any of the
four slots in the Concept pull-out drawer.
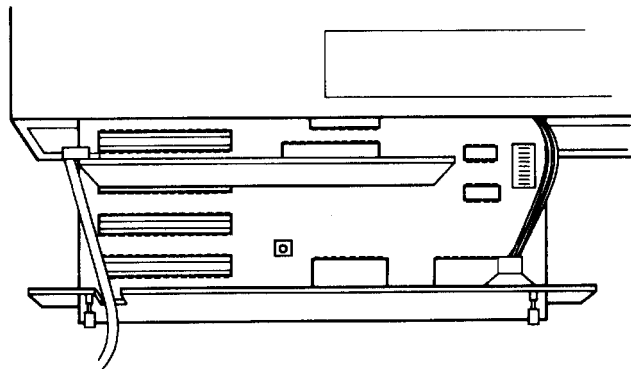
To boot from a disk drive, set the boot switches as
described in the first section of this chapter.

More than one disk drive can be connected to the
Concept at the same time. When the boot switches are
set to boot from a local disk drive and there are two
or more local disk interface cards connected to your
Concept, the Concept boots from the drive with an
interface card in the lowest numbered slot.

For example, if you have a disk drive interface card in
slot one and a second in slot two, the Concept will
boot from the disk drive with the interface card in
slot one. Likewise, if you have a drive interface card
in slot two and a drive interface card in slot four,
the Concept will boot from the drive with the interface
card in slot two.

OMNINET CONNECTION

The Omninet tap cable connects to the Omninet port on
the back of the Concept base unit. The Omninet port is
recognized as slot 5 by the Concept.
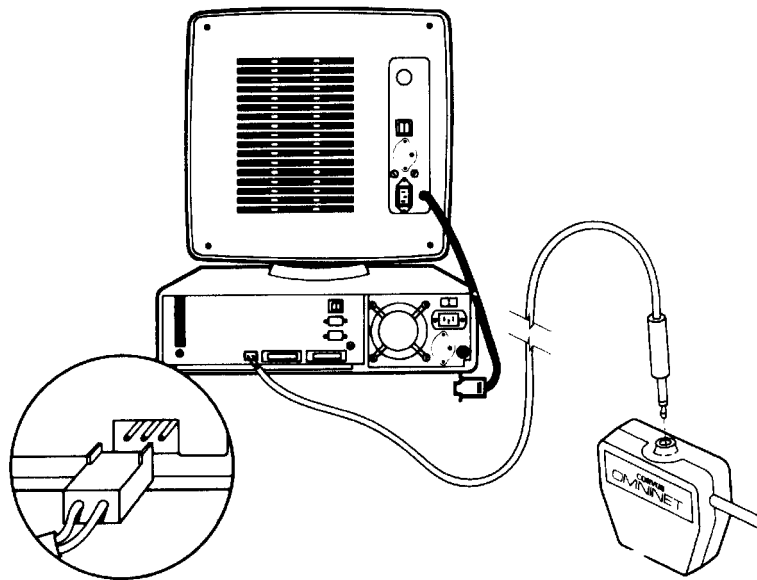
To boot from Omninet, set the boot switches as
described in the fi st se t o o this chapter.

RS-232 PORTS

The Concept has two RS-232 ports on the back of the
base unit.

These two ports can be used for printers, modems, etc.

Connecting a Local Printer

This section details the equipment and procedures
needed to connect a printer, which uses an RS-232C
serial communications interface, to the Corvus Concept.

It does not furnish the instructions for setting up any
specific printer. It furnishes only those instructions
needed to make a physical connection between your
printer and the Concept.

It is your responsibility to consult the reference
manuals or your specific printer for information such
as switch settings, operational specifications,
cautions and warnings.

You need the following equipment:

  o A printer with and RS-232C serial asynchronous
     communications interface.

  o A Modem Eliminator Cable, which is also called
     a Null Modem.

The Null Modem cable connects to the end of the
RS-232C cable from the printer and then to the back of
the Concept.

1. The printer should be close enough to the Concept
    so that the interface cable leading from the
    printer is slack.
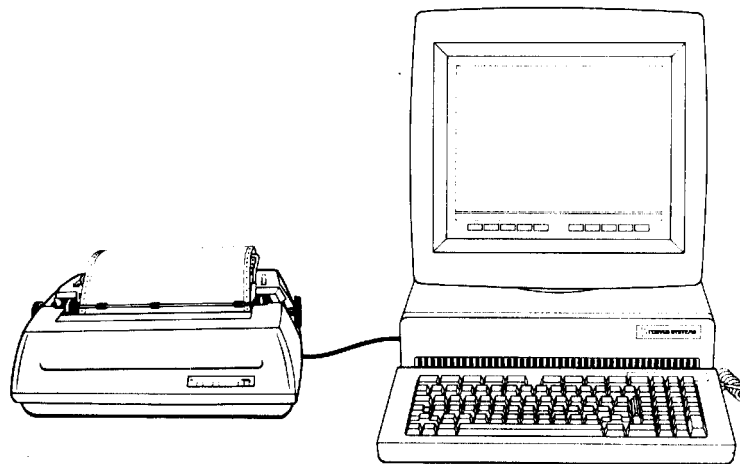
2. Connect the Modem Eliminator Cable to the end of
    the printer interface cable.
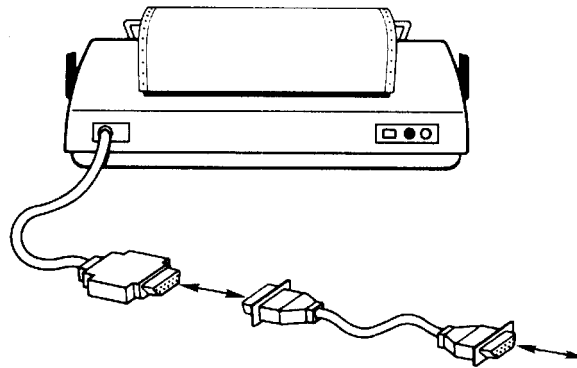
3. Plug the opposite end of the Modem Eliminator cable
    into one of the RS-232C serial ports on the back
    of the Concept.
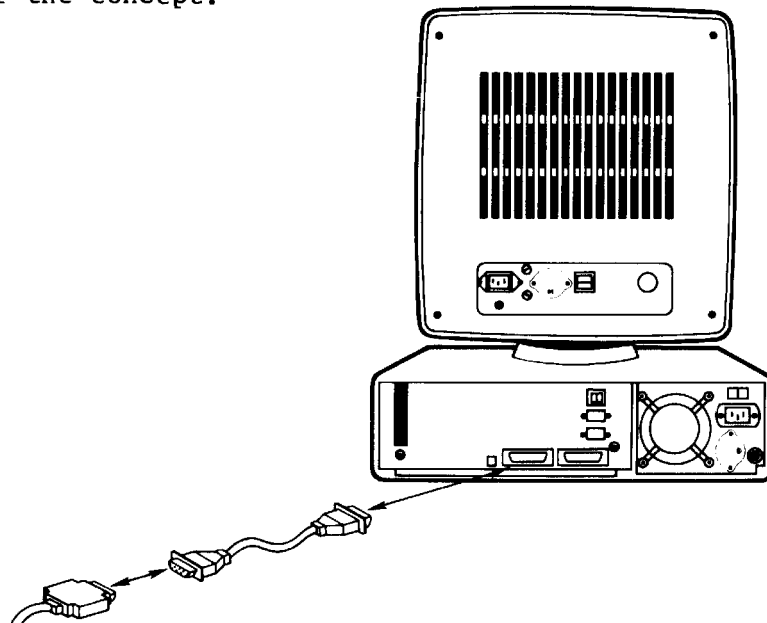
The serial port closest to the power switch on the

Concept is port 1. The switch furthest from the power
switch is port 2.

Once you have connected your printer to the Concept,
you should prepare your printer for use. This means
that you check the communication and operational
settings of your printer. The items you must examine
are the following:

   o   Baud rate

   o   Parity

   o   Character transmission size

   o   Communication handshake protocol

Once you have the appropriate information, you should
write it down. Next, consult the section titled "Set
Printer Parameters" in Chapter Four of this guide,
which explains how to setup a compatible communication
link between your printer and Concept.

If you are planning to use EdWord to print your docu-
ments, you must first set up your printer and Concept.
Printing with EdWord is explained in "The Corvus
Concept EdWord User Guide."

VIDEO DISPLAY UNIT

Your Corvus Concept display unit can be arranged in
different ways to suit your needs. You can change the
orientation of your screen from vertical to horizontal,
and vice versa. In either position, you can tilt and
swivel the display unit to your liking.
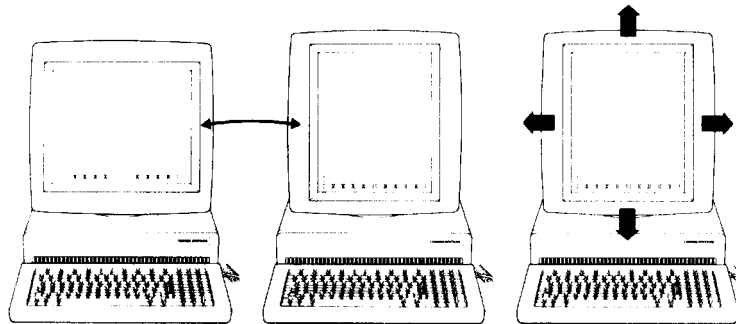
Changing Screen Orientation

Vertical to Horizontal. To change the Concept screen
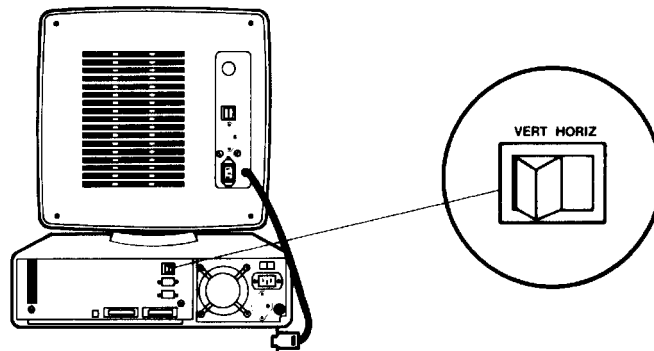from vertical to horizontal, do the following:

1.   Stand in front of the Concept. Push the lock
     latch back, lift the front of the display slightly
     and slide it back about an inch.

LOCK LATCH
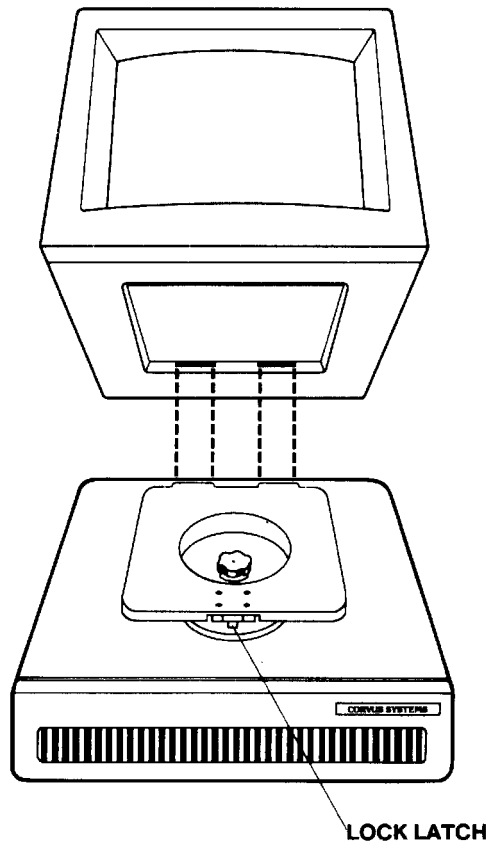
2. Place your left hand on the back lower left corner,
    and place your right hand on the front upper right
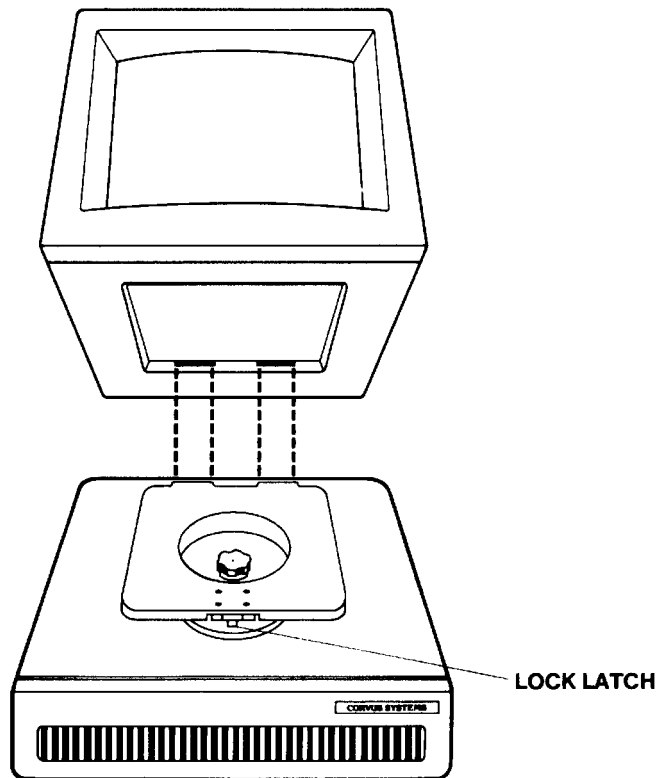   corner. Lift the display unit and turn it
    clockwise.
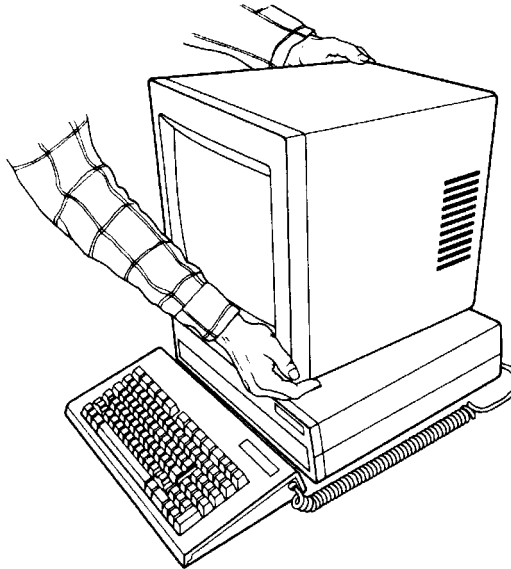
3. Lower the back end first and slide it forward to
    catch the two projections on the back of the
    display platform, then lower the front end. Pull
    the lock latch shut. Check to make sure the display
    unit is secure.

4. Press the right side of the screen orientation
    switch located above the video connecttor on the
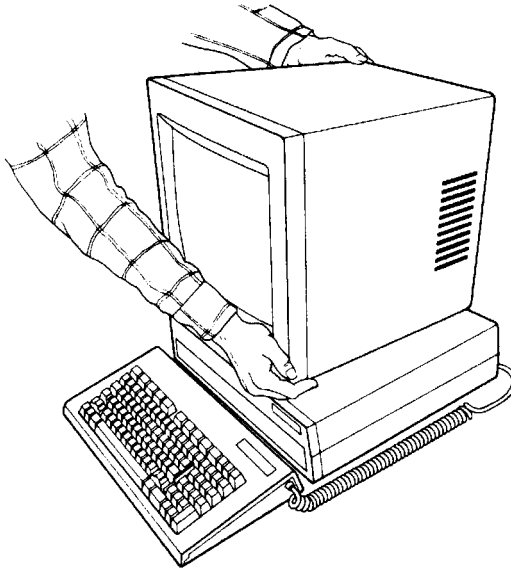   back of the base unit.

5.   Hold down [CTRL] and Press [BREAK] to reboot.

Horizontal to Vertical. To change the Concept screen
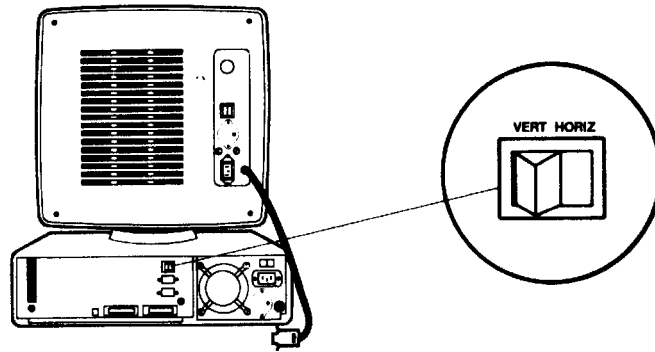from horizontal to vertical, do the following:

1.   Stand in front of the Concept. Push the lock
      latch back, lift the front of the display slightly
      and slide it back about an inch.

LOCK LATCH

2. Place your left hand on the back upper left corner, and place your right hand on the front lower right corner. Lift the display unit and turn it counter-clockwise.

3. Lower the back end first and slide it forward to catch the two projections on the back of the display platform, then lower the front end. Pull the lock latch shut. Check to make sure the display unit is secure.

4. Press the left side of the screen orientation switch located above the video connector on the back of the base unit.

5.   Hold down [CTRL] and press [BREAK] to reboot.