



**Burroughs**

# **BTOS**

## Operations Training Guide

Relative to BTOS Release Level 7.0  
Priced Item  
February 1986

Distribution Code SA  
Printed in U S America  
5023237



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# Introduction

This guide contains training exercises for self-paced training on the Burroughs BTOS operating system. The procedures are easier to perform if you are familiar with computer terms. However, this guide contains the step-by-step information you need to train yourself how to operate any Burroughs B 20-Series workstation, even if you have never operated a computer before.

## How to Use This Guide

You do not have to read this guide cover-to-cover. Its sections cover a wide range of workstation features, and you may be interested in only some of them at this time.

If you are using a Burroughs workstation for the first time, you should perform the exercises in each section of the book in the order presented. Section 1 tells you how to load your software. Section 2 contain basic information you must know in order to use a workstation. The rest of the sections are arranged in their order of importance and difficulty (least difficult first).

If you are familiar with microcomputers, you can go through the sections in any order that you want. Each section and its exercises are self-contained units.

In any case, if you look over the table of contents before you start, you may find this guide easier to use.

To find the definition of a word that is unfamiliar to you, you should check the glossary in Appendix B.

To locate specific information, you should turn to the index at the back of this guide for an alphabetic list of subjects covered in this course.

## Computer-Assisted Instruction (CAI)

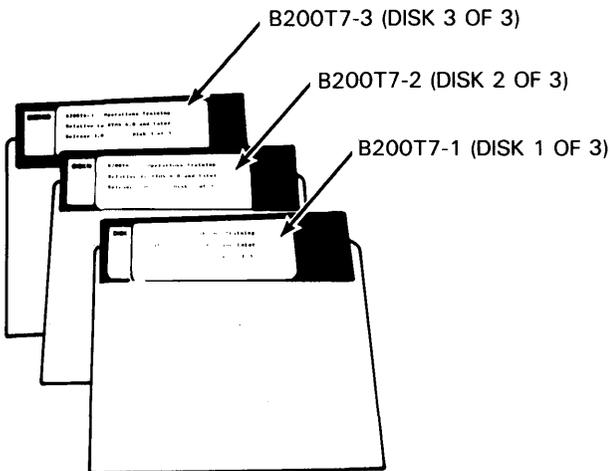
Computer-Assisted Instruction (CAI) helps you learn by doing. A program called Instructor teaches you how to operate the workstation and to understand how it works.

It is called **self-paced** because you can choose the subjects you want to learn and perform the lessons and exercises on your own schedule. If you want to work through an exercises in the current lesson again or jump ahead to look at a different topic, you control the process. The program and the information it contains are there to serve your needs.

## Training Items You Must Have

Besides an operating workstation and this guide, you need:

- Three diskettes labeled: B200T7 Instructor CAI
- *BTOS Operations Reference Card*
- *BTOS Standard Software Operations Guide*
- *Two blank floppy disks*



## Conventions Used in This Guide

The following conventions apply to all procedures:

**Note:** *Terms are defined in the glossary of this guide.*

- Words and numbers that you enter into the command displays are printed in italics.
- Keys that you press are named in boldface type.
- Workstation commands are printed in capital letters.
- The term *character* includes spaces (blanks) that you enter by pressing the **Spacebar**.

## Reference Materials

This guide includes an index and three appendixes with reference information:

- For error messages, an explanation of each, and recommended actions to resolve problems, you should refer to Appendix A.
- For definitions of key terms used in this guide or related to this software, you should refer to Appendix B.
- For a description of mass-storage (B 22) systems, you should refer to Appendix C.

## Related Documents

For a printed list of all entries needed during training exercises, you can refer to your *BTOS Operations Training Reference Card*.

For an explanation of all command options, you can refer to the *BTOS Standard Software Operations Guide*.

The following documents contain operating information about Burroughs workstations:

Installation Manuals	Contain descriptions of how to unpack and connect workstation hardware.
SSOG Quick Reference Guide	Describes fields of system commands.



## Getting Started

This section contains the information and procedures to help you get started using your workstation and to begin CAI self-paced training. It has four entry points, depending upon your workstation itself. If your workstation:

- Has just been cabled together and never used for data processing, begin at **New Installations**.
- Operates only from floppy disks, start at **Standalone Dual-Floppy Procedures**.
- Displays a SignOn screen (see Figure 1-10), begin at **SignOn to the BTOS Operating System**.

In all other cases, you would start at **Activating the CAI Program**.

The steps are as follows:

- 1 Select one of the four starting points.
- 2 Locate the page number of the selected section through the Table of Contents in this training guide.
- 3 Follow the directions at the appropriate entry point.

### New Installations

If you have just cabled your system together following the procedures in the hardware installation manual, you must perform some additional steps before you can begin to use your workstation, even for training.

These step-by-step procedures are written in language that can be understood by someone new to computer operations. In technical terms, you need to power-up your workstation, initialize its hard disk, and install its operating system software. Each procedure can be performed successfully by someone with a non-technical background.

In the CAI program itself, terms such as *initialization* and *software*, for example, are explained.

## Step One: Turning Your System On (and Off)

Figures 1-1 and 1-2 show the locations of the power switches for new workstations. Procedures describe how to turn each type of workstation on and off.

You must perform the procedure for your type of workstation.

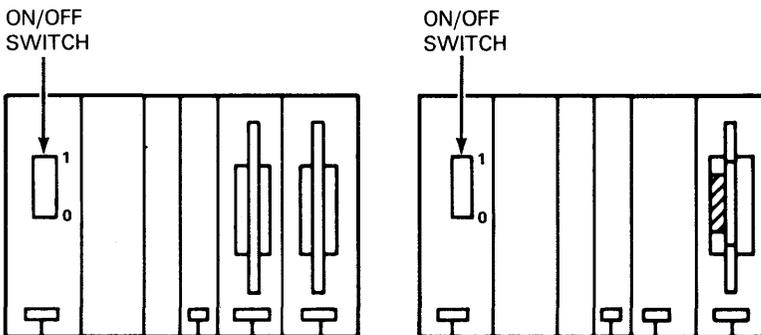
You can recognize your workstation from the outline drawing of it or check in the hardware installation manual for its exact designation.

### Turning a B 28 or B 26 Workstation On

If you have a B 28 or B 26 workstation with a tabletop processor and disk unit(s):

- Slide the power switch (located on the left of the processor unit) up to turn on your B 28 or B 26. This switch turns on the monitor, disk drive(s), and the processor. Two small red lights (for the processor and drive) remain on while your workstation is operating.
- To turn the workstation off, slide the switch down. **(Do not turn your workstation off at this time.)**

Figure 1-1 B 28 or B 26 Power Switch



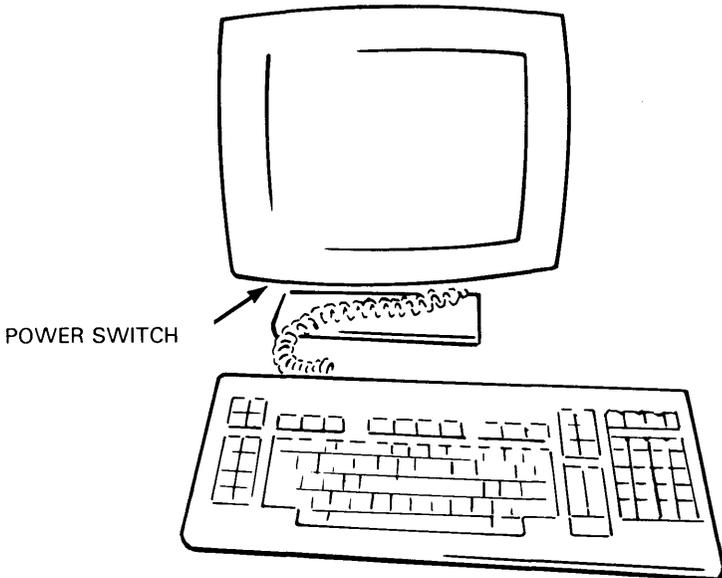
### Turning a B 27 Workstation On

If you have a B 27 workstation (monitor, CPU module, and disk drive(s):

- Press the front part of the toggle switch (found underneath the left side of your monitor unit) to turn your workstation on. This switch turns on the monitor, disk drive(s), and the processor. Two small red lights (for the processor and drive) remain on while your B 27 is operating.
- To turn your workstation off, press the back part of the toggle switch to turn your B 27 off. (**Do not turn your B 27 off at this time.**)

Your workstation now has electrical power and you are ready to install your first software diskette.

Figure 1-2 B 27 Power Switch



## Step Two: Installing a Floppy Disk

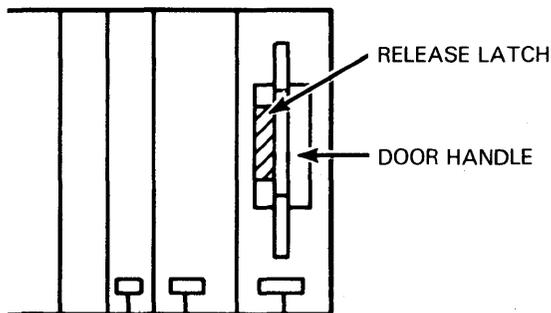
Installing a floppy disk is simple: four steps are required. Your task is to make sure that you have the right disk in the right order.

You should have two floppy disks that are labeled BTOS Operating System and four that are labeled BTOS Standalone Utilities. Each set is numbered and you will need all six for a proper software installation (described later).

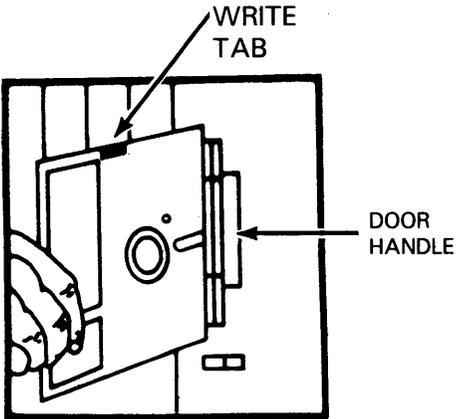
The first disk to install is floppy disk 1 of the BTOS Operating System. You should use the steps described in Inserting a Floppy Disk to install the first, and subsequent, disks.

### Inserting a Floppy Disk

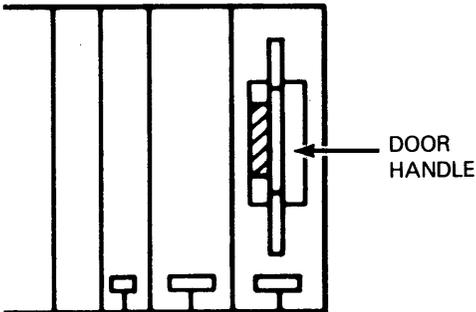
- 1 Remove the floppy disk from its jacket.
- 2 If the door of the floppy drive is not open, open it by pressing the release latch on the left side of the door area. The release latch is located to the left of the door handle. When you press it, the door handle springs to the right.



- 3 Position the floppy disk as illustrated, then slide the floppy disk into the drive until it stops. The floppy disk label must face the door handle and the write tab must face up. If you insert the floppy disk properly, it will not come out when you release it.



- 4 Close the floppy disk drive door by sliding the door handle to the left until you hear a click. (The door must remain closed for your BTOS workstation to use the floppy disk.)



Your floppy disk is inserted and ready for use on the system. The indicator light flashes on when the disk is in use (sending or receiving information). You are ready to install your BTOS software.

## Step Three: Installing BTOS Software

You install your software by following the steps listed in this subsection. You have to initialize your system disk so you should allow at least 30 minutes for this section.

### Before You Start

You should examine the floppy disk numbers and titles and locate the Test Summary (media defect) report that came with your workstation.

### Installing Operating System Disk 1

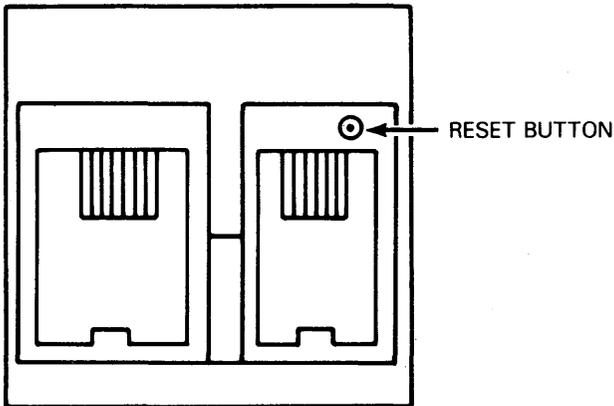
To load operating system software, you should proceed as follows:

1 Install BTOS Operating System disk 1 in the floppy disk drive.

You should locate the Reset button on the back of your B 28 or B 26 workstation (Figure 1-3). If you have a B 27 workstation, you should locate the power on/power off switch.

Figure 1-3 B 28 or B 26 Reset Button

TABLE-TOP UNIT: REAR VIEW



2 Press the Reset button or the power off/power on switch.

The Installation SignOn screen, shown in Figure 1-4, should appear on your workstation monitor. If the SignOn screen does not appear, repeat steps 1 and 2, making sure that the floppy disk is inserted properly in the floppy disk drive.

Figure 1-4 Software Installation SignOn Screen (Example)

SignOn 7.0.0

DAY/DATE/TIME NOT SET

---

BURROUGHS OPERATING SYSTEM BTOS 7.0.0

User Name	Enter INSTALL To install the software on a workstation or UPDATE To update the software on a workstation or XE500 To install/update the software on an XE500
Password	Do not enter a password at this time.
DATE/TIME	Enter the current day, date and time (if not already set).

Then press the GO key.

User Name *install*  
 Password  
 Day/Date/Time (e.g., Fri Sep 9, 1983 8:00 am) *fri 12/12/86 9:00 am*

**Caution:** Do not install BTOS software if another person has completed training on this workstation. Only the first person to complete training installs software. If software has been installed, you should go to SignOn to the BTOS Operating System in this section.

**3** Enter *install* on the User Name line.

You must enter *install*, *update* or *XE500* in the User Name field. If you enter another word or leave it blank, you get an error display which says:

The name given is not valid.

**4** Press **RETURN** twice.

Pressing **RETURN** moves the cursor to the Day/Date/Time line.

Either method for indicating the day/month/year, shown in Figure 1-4, is correct. If your day of the week does not match the calendar date, you get an error message. If you do not enter the time of day, you get an error message.

You enter the current day and time that you are performing the installation.

**5** Enter the current day of the week, date, and time of day.

**6** Press **GO**.

The IVOLUME command form displays with the cursor positioned in the field for [Bad Spots (See Documentation)].

Proceed to the next heading: **Entering Bad-Spot Information**.

### Entering Bad-Spot Information

Each hard disk drive comes with a report on any bad spots (areas that would not hold information successfully) that showed up in a final test of a hard disk drive. You must enter this information manually when you initialize a new hard disk for the first time.

You report media defects by entering groups of three numbers, separated by a slash (/) or pound sign (#), in the [Bad Spots] field of the IVOLUME command.

The correct format:

- Separates numbers in a group by slashes or a pound sign
- Separates groups by spaces
- Does not split a group (continue it on the next line)

Samples of incorrect and correct bad-spot entries are shown in Table 1-1.

Table 1-1 **Incorrect/Correct Bad Spot Entries**

	<b>Incorrect</b>	<b>Correct</b>
<b>Test Summary</b>	36/ 2/ 101/ 04 26/1/3/ 26/3/#1 38/2/ #144	36/2/#101 26/1/#3 23/3/#1 38/2/#144

A sample Bad Spot Report is shown in Figure 1-5 with the entries you would use highlighted in Figure 1-6. You now need to locate the Test Summary (Bad Spot) Report that was shipped with your hard disk drive.

The procedure you use to enter bad-spot reports is as follows:

- 1 Locate the Hard Error Map area of the Test Summary Report.
- 2 Enter the CYL/HD/SEC information in the correct format.
- 3 Separate each bad spot group with a space.
- 4 Perform steps 2 and 3 until all bad spots on the Hard Error Map have been entered.

Figure 1-5 **Sample Test Summary (Media Defect Report)**

```

MODEL NO. : 212          PASSED DRIVE      TEST DCU: 5
SERIAL NO. : 178111     SYS : 17/167      DATE : 2/ 3/ 85

TEST                RESULT      TEST                RESULT
-----
SELECTS AVAILABLE   1, 2, 3, 4    TRK ZERO           PASS
START TIME:
12V NOM             3.1 SEC        12V NOM            3600.6 RPM
12V LOW             3.8 SEC        12V LOW            3601.6 RPM
12V HIGH            4 SEC          12V HIGH           3600.9 RPM
STOP TIME           8 SEC          ST. TIME            4 SEC
3 MS STEP TEST:
12V NOM             PASS           SK. COMP. TIME     19.5 MS
12V LOW             PASS
12V HIGH            PASS
OUTSIDE WINDOW MARGIN:
LATE EDGE           34 NS          INSIDE WINDOW MARGIN:
EARLY EDGE          36 NS          LATE EDGE           24 NS
TOTAL               70 NS          EARLY EDGE          26 NS
LONG TERM R/W ERRORS
SOFT                4              TOTAL               50 NS
HARD                1
                                ST 212           S/N 178111
                                HARD ERROR MAP
                                CYL HD SEC BYTE
                                SOFT 85 1 31 186
                                SOFT 301 1 7 72
                                SOFT 90 2 3 133
                                SOFT 42 3 28 142

```



### Installing Standalone Utilities

To continue your installation of BTOS Operating System software, you should proceed as follows:

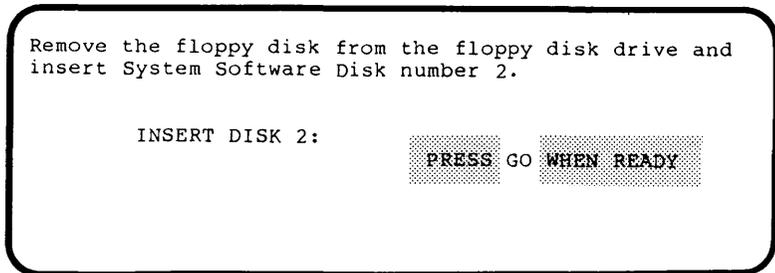
- 1 Install BTOS Standalone Utilities disk 1 in the floppy disk drive.
- 2 Press the Reset button or the power off/power on switch..  
The SignOn form, shown in Figure 1-10, displays.
- 3 Set the date and time, if they are not set.
- 4 Press the **GO** key.

A command line (highlighted area following the word Command) displays on your monitor screen.

- 5 Enter *software installation* on the Command line.
- 6 Press **GO**.

Screen displays inform you what software utilities are being installed. You are given instructions when to install another floppy disk into the floppy disk drive through screen displays. A typical display is shown in Figure 1-8.

Figure 1-8 **Standalone Utilities Display Message (Example)**



*Utilities to Install*

You must decide which of the optional utility programs you want installed on your workstation. You can install all, part, or none of them, depending on what you are going to use your workstation for. You can also install any of these BTOS utility programs at a later time, if you so desire.

If you are going to use your workstation for word processing (rather than programming development), you can install the BTOS utility programs italicized in Table 1-2.

**Table 1-2 BTOS Standalone Utility Programs**

<i>Backup Volume</i>	<i>Install Queue Manager</i>
<i>Bootstrap</i>	<i>Install Spooler</i>
<i>Change Volume Name</i>	Maintain File
<i>Command File Editor</i>	<i>Make Translation File</i>
<i>Create Configuration File</i>	<i>Merge</i>
Debug File	<i>Partition Status</i>
Dump	PLog
<i>Edit</i>	<i>Print</i>
<i>Floppy Copy</i>	<i>Read Hardware Id</i>
<i>Format</i>	Sort
<i>Install DataComm Server</i>	<i>Spooler Status</i>
<i>Install Hardware Id</i>	User File Editor
<i>Install Queue Manager</i>	<i>Write Hardware Id</i>

## Standalone Dual-Floppy Procedures

You have a standalone dual-floppy workstation only if your four BTOS Operating System software disks are labeled B26SF7 or B27SF7. If your operating system software does not have one of those two labels, you should begin at **Signon to the BTOS Operating System** or **Activating the CAI Program**, whichever is appropriate.

If you are operating a standalone dual-floppy workstation, you must use the procedures described in this section to load and run the disks of the training program.

### Copying Software Master Diskettes

Make copies of each operating system and BTOS Operations Training CAI diskette using the Floppy Copy command (described next).

***Note:** If you do not copy your disks for standalone dual-floppy operation, the CAI diskettes will not execute properly and you will only get error messages.*

### Making Copies with Dual-Floppy Systems

If you are using a dual-floppy standalone workstation, you must make copies of your four BTOS system software and three BTOS Operations Training CAI disks.

The following steps are required to copy floppy diskettes on standalone dual-floppy systems.

- 1 Insert BTOS Systems Software disk 1 (B26SF7-1 or B27SF7-1) in the left-hand floppy disk drive [f0].

You should locate the Reset button on a B 26 workstation. If you have a B 27 workstation, you should locate the power on/power off switch.

- 2 Press the Reset button on a B 26 workstation or turn power off, then on for a B 27 workstation.

Figure 1-9 Completed Executive SignOn Form (Example)

Executive 7.0.0  
Path: [Sys]<Sys> Fri Dec 12, 1986 9:00 AM

---

BURROUGHS OPERATING SYSTEM BTOS 7.0.0

User name	Enter an application name or leave this line blank to display a Command form.
Password	Enter your assigned password (optional).
Day/Date/Time	Enter the current day, date and time (if not already set).

Then press the GO key

User Name (e.g., Allen)  
Password  
Day/Date/Time  
(e.g., Fri Sep 9, 1983 8:00 am) *fri 12/12/86 9:00 am*

The Executive SignOn form displays on your monitor screen.

- 3 With the cursor positioned on the User Name line, press **RETURN**.
- 4 With the cursor positioned on the Password line, press **RETURN**.

Either method for indicating the day/month/year, shown in Figure 1-9, is correct. If your day of the week does not match the calendar date or you do not enter the time of day, you get an error message.

- 5 Enter the current day of the week, date, and time of day.
- 6 Press **GO**.

The BTOS Command line displays on your workstation monitor.

- 7 Enter *floppy copy* on the Command line.
- 8 Press **RETURN** twice.
- 9 Enter *y* on the [Dual floppy?] line.

- 10 Press **GO**.
- 11 Insert the diskette to be copied (called the Master) in drive [f0].
- 12 Insert a blank diskette in the right-hand [f1] floppy disk drive.
- 13 Press **GO**.
- 14 Repeat steps 11 through 13 until all master diskettes have been copied.
- 15 Press **FINISH** to exit Floppy Copy.

### **Loading and Running Instructor**

- 1 Insert a copy of BTOS Operations Training disk 1 (B200T7-1) in the left-hand floppy disk drive [f0].
- 2 Insert a copy of BTOS Operations Training disk 2 (B200T7-2) in the right-hand floppy disk drive [f1].
- 3 Enter *path* on the Command line.
- 4 Press **RETURN**.
- 5 Enter *f1* on the [Volume] line.
- 6 Press **RETURN**.
- 7 Enter *Training* on the [Directory] line
- 8 Press **GO**.
- 9 Enter *Run File* on the Command line.
- 10 Press **RETURN**.
- 11 Enter [*f0*]<*Training*>*Instructor* on the [Filename] line.
- 12 Press **GO**.

The first screen of the Instructor program displays on your workstation monitor. Proceed to **The CAI Course** in this section.

### **Dual-Floppy System Training**

- 1 Insert a copy of BTOS Operations Training disk 1 (B200T7-1) in the left-hand floppy disk drive [f0].
- 2 Insert a copy of Instructor CAI Operations Training disk 3 (B200T7-3) in the right-hand floppy disk drive [f1].

- 3 Enter *path* on the Command line.
- 4 Press **RETURN**.
- 5 Enter *f1* on the [Volume] line.
- 6 Press **RETURN**.
- 7 Enter *Training* on the [Directory] line.
- 8 Press **GO**.
- 9 Enter *Run File* on the Command line.
- 10 Press **RETURN**.
- 11 Enter [*f0*]*<Training>Instructor* on the [Filename] line.
- 12 Press **GO**.

The first screen of the Instructor program (Instruction Blocks 5 through 8) displays on your workstation monitor. Proceed to **The CAI Course** in this section.

### **Dual-Floppy Advanced Training**

If you have just loaded and run Operations Training disk 3, you may begin Advanced training (Instruction Blocks 9 through 12) with step 3 below. Otherwise, begin with step 1.

- 1 Insert a copy of BTOS Operations Training disk 1 (B200T7-1) in the left-hand floppy disk drive [*f0*].
- 2 Insert a copy of Instructor CAI Operations Training disk 3 (B200T7-3) in the right-hand floppy disk drive [*f1*].
- 3 Enter *path* on the Command line.
- 4 Press **RETURN**.
- 5 Enter *f1* on the [Volume] line.
- 6 Press **RETURN**.
- 7 Enter *TrainAdv* on the [Directory] line.
- 8 Press **GO**.
- 9 Enter *Run File* on the Command line.
- 10 Press **RETURN**.
- 11 Enter [*f0*]*<Training>Instructor* on the [Filename] line.

**12 Press GO.**

The first screen of the Instructor program (Instruction Blocks 9 through 12) displays on your workstation monitor. Proceed to Section 9 of this training guide.

Figure 1-10 **Executive SignOn Form (Example)**

Executive 7.0.0		DAY/DATE/TIME NOT SET
Path: [Sys]<Sys>		
<b>BURROUGHS OPERATING SYSTEM BTOS 7.0.0</b>		
User name	Enter an application name or leave this line blank to display a Command form.	
Password	Enter your assigned password (optional).	
Day/Date/Time	Enter the current day, date and time (if not already set).	
<b>Then press the GO key.</b>		
User Name (e.g., Allen)		
Password		
Day/Date/Time		
(e.g., Fri Sep 9, 1983 8:00 am)		<i>fri 12/12/86 9:00 am</i>

## SignOn to the BTOS Operating System

Worksessions on an operational workstation normally begin with the SignOn procedure.

**Note:** For an explanation of how to turn your workstation on or insert a floppy disk, refer to *New Installations* at the beginning of Section 1.

Signing on to the Executive may be as simple as pressing the **GO** key or it may require that you supply:

- A user name
- A password
- The correct day of the week, date, and time

### **Step One: Completing the SignOn Form**

The Executive SignOn form, shown in Figure 1-10, must display on your monitor screen before performing the steps in the SignOn procedure.

If the correct date and time are displayed in the upper right-hand corner, press **GO** to sign on to your workstation, assuming that a user name and password are not required. Otherwise:

- 1** With the cursor positioned on the User Name line, press **RETURN**.
- 2** With the cursor positioned on the Password line, press **RETURN**.

Either method for indicating the day/month/year, shown in Figure 1-10, is correct. If your day of the week does not match the calendar date, or you do not enter the time of day, you get an error message.

- 3** Enter the current day of the week, date, and time of day.
- 4** Press **GO**.

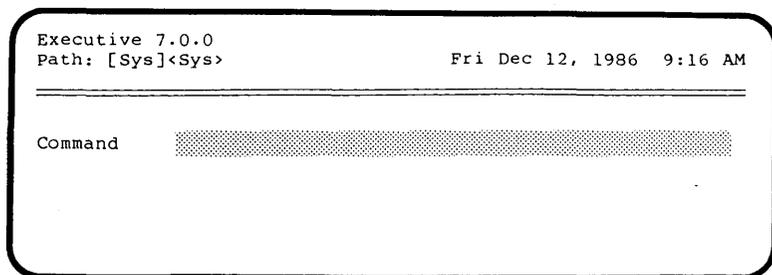
The BTOS Command Line displays on your workstation monitor.

## Step Two: Using the Command Line

When you complete the SignOn form, the BTOS Command line, shown in Figure 1-11, displays on the monitor screen. The Command line is a highlighted area of the screen that contains a blinking cursor. In the highlighted area you enter BTOS Executive commands that tell the workstation what you want to do.

When you enter a valid BTOS command, the Executive displays the command form that corresponds to that command. To install software, for example, you would use the command SOFTWARE INSTALLATION at the appropriate time.

Figure 1-11 **BTOS Command Line**



### Step Three: Using the HELP Key

You use the **HELP** key to find out what Executive commands are available on your workstation. By using the **HELP** key, for example, you can determine whether or not CAI has been loaded to your system.

**1 Press HELP.**

An alphabetical list of the Executive commands available on your workstation appears.

**2 Press NEXT PAGE** (if necessary).

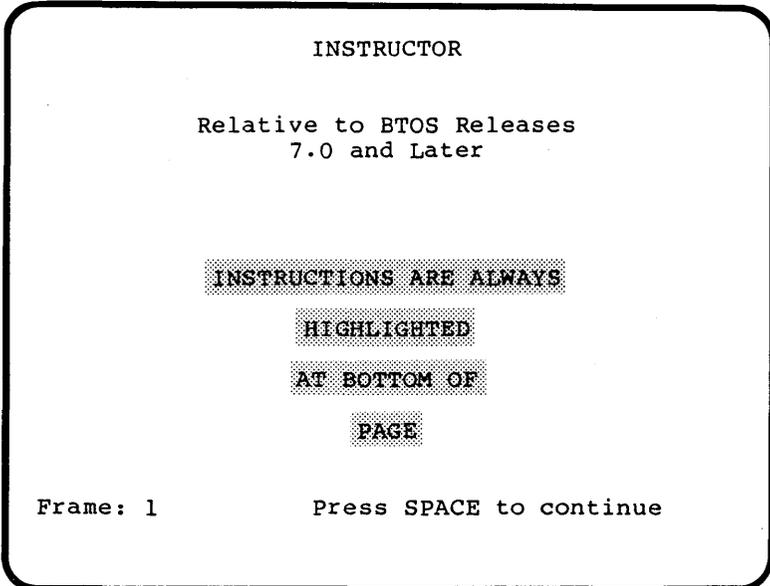
The list of your Executive commands may not fit on one screen. If they do not, you are prompted to press **NEXT PAGE**.

**3 Press HELP.**

Your workstation again displays commands in alphabetical order, but now each command is followed by a brief description.

**4 Press NEXT PAGE** repeatedly until the command line appears.

Figure 1-12 Instructor CAI Frame (Example)



## Activating the CAI Program

When BTOS CAI training is installed and operational on your workstation, the first screen (Figure 1-12) displays on your workstation monitor.

If you have that display on your monitor, you can begin using Instructor by pressing the **spacebar** to activate the CAI program. Before you press the **spacebar** to activate Instructor, it is suggested that you read the subsections called **The CAI Course**.

*Note: All instructions and information necessary to operate the first part of the course (Instruction Blocks 1 through 4) appear on the workstation monitor.*

Those of you who do not see the display in Figure 1-12 on your workstation monitors should proceed to the next heading.

## Installing Instructor on Hard Disk Workstations

Install BTOS Operations Training with the following steps:

- 1 Insert Operations Training Disk 1 (B200T7-1) in floppy disk drive zero [f0].
- 2 Enter *software installation* (can be abbreviated: *s i*) on the Command line.

*Note: If you are installing BTOS Operations Training on an XE 500 master, you would enter **XESOFTWARE INSTALLATION** on the Command line.*

### 3 Press **GO**.

The message **BTOS Operations Training Installation** displays on your monitor. You should read the instructions on the screen and turn off any cluster workstations (if necessary). Before performing the next step, you should read the following information.

The VOLUME STATUS command describes the contents of a hard or floppy disk. It helps you decide if there is enough room for additional information or software.

In the VOLUME STATUS (partial) display in Figure 1-13, the parts that determine whether or not you can continue with the software installation are highlighted in boldface type.

Figure 1-13 VOLUME STATUS Display (Example)

```

Executive 7.0.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986  9:16 AM
-----
Volume Status

Status of volume TRAINING

Initialized          Dec 12, 1986    8:19 AM
Last Modified       Dec 12, 1986    8:40 AM

Sectors             Unused          Total           Used
File Headers        14,492          19,584          26%
                   786             912             14%

```

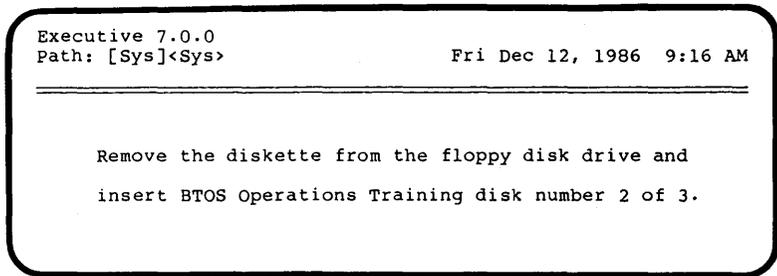
To continue with the installation, you must see a number in the **Unused** sectors column that is greater than 2,200. The number in Figure 1-13, for example, is 14,492. That number represents more than enough room for you to continue to install the Instructor CAI disks.

**3** Press **GO** to invoke VOLUME STATUS.

**4** Press **GO** if your hard disk has more than 2,200 unused sectors of space available.

Software installation proceeds under control of the Executive. You are instructed when to remove and insert new software disks as they are needed.

Figure 1-14 Training Installation Display (Example)



**5** Remove Disk 1 when the display shown in Figure 1-14 instructs you to do so.

**6** Insert Disk 2 (B200T7-2) as requested.

**7** Press **GO**.

Software installation proceeds automatically, with screen displays appearing under system control.

**8** Remove Disk 2 when as display similar to that shown in Figure 1-14 instructs you to do so.

**9** Insert Disk 3 (B200T7-3) as requested.

**10** Press **GO**.

Software installation proceeds automatically, with screen displays appearing under system control.

You see the message:

**\*\*\* INSTALLATION OF BTOS Operations Training COMPLETE \*\*\***

when the Instructor CAI software has been installed.

## The CAI Course

BTOS Operations Training is presented through a CAI program called Instructor that operates automatically when activated (executed) through the system commands INSTRUCTOR, SYSTRAIN, and ADVTRAIN.

Instructor displays the information you need to operate and to understand your workstation.

As you start each new block of instruction, you should refer to this training guide for an overview of the lessons, then follow the directions on the monitor screen. If you need to locate any of the subjects discussed in Instructor, you can use the index to this guide to find that information.

*Note: The section numbers of this training guide match the numbers of the instruction blocks in the Instructor CAI. This section, for example, corresponds to CAI Instruction Block 1, "Getting Started."*

### Overview of Instruction Block 1

Block 1 consists of the following lessons:

Lesson 1: Getting Started

- a What Is Instructor?
- b Keys You Use
- c Keys You Cannot Use

Lesson 2: Setting Your Own Pace

- a Reviewing Pages
- b Menu Options
- c Interrupting Training
- d Review

Options For Experienced Operators

**Objectives of Block 1**

When you complete Block 1, you will understand how to control the direction of your own computer-assisted training through:

- **PREV PAGE** and **NEXT PAGE** to review pages within the Instructor program.
- Menu options to select your own topics of instruction.
- The **GO** and **DELETE** keys to interrupt a screen display, menu, or exercise.

Intermediate and advanced operators are instructed how to select topics of training through full use of CAI options.

**Beginning Training**

To begin CAI training, you:

- 1 Enter *instructor* on the Command line.
- 2 Press **GO**.

Normally, you would check the overview in this guide before doing the next block of instruction.



---

# Non-Technical Definitions

## Overview

Block 2 introduces basic concepts that you need in order to understand further discussions of your workstation. The instructor program leads you through its presentation of terms, reviews that material with you, and questions you about what you have learned.

This section contains an overview of the topics covered in block 2 of the CAI. Lesson summaries present the important terms within a particular lesson. You should allow approximately one hour to complete this block of instruction.

Instructor takes you through the following lessons:

- Lesson 1: Hardware Concepts
- Lesson 2: Workstation Terms
- Lesson 3: Software Concepts
- Lesson 4: Workstation Software
- Review of Instruction Block 2

## Objectives of Block 2

When you complete these lessons, you will be able to identify:

- The major hardware parts of your workstation
- The functions of the different keypads on your keyboard
- The two types of disks available on workstations

Further, you will be able to recognize:

- The major terms used with software
- The importance of BTOS commands
- The elements of file names
- The purpose of security for a workstation

## Lesson 1: Hardware Concepts

After defining such basic concepts such as *input*, *hardware*, and *software*, Instructor points out similarities between your workstation and other electronic equipment. In an optional exercise on recording surfaces, the table shown in Figure 2-1 is discussed.

## Lesson 2: Hardware Terms

The terminology you use to describe the parts of your workstation is the focal point of this lesson. Instructor defines such terms as *monitor*, *cursor*, *floppy disk*, and *print wheel*. You need to know these terms in order to describe your workstation hardware accurately.

## Lesson 3: Software Concepts

Software that is associated with your workstation is described by discussing *operating systems*, *applications programs*, and *jobs*. Instructor presents these terms so that you can understand them as they are used in the documentation about your workstation.

## Lesson 4: Software Terms

The specific terms you need to work with your BTOS operating system are the modules in this lesson. Instructor discusses *commands*, *file names*, and *security* in detail. It also presents the various types of jobs that can be performed on a workstation.

Table 1 appears in block 2 of Instructor and is used to compare different recording surfaces. It is shown here for reference.

Figure 2-1 **Instructor Table 1: Recording Surfaces**

<b>Type</b>	<b>Record Speed/Method</b>	<b>Access/Display</b>	<b>Reuse?</b>	<b>Perm?</b>
Typewritten Page	Slow: mechanical and prone to human error	Slow: search in sequence	No	Yes
Phonograph Record	Slow: mechanical—sound on wax surface	Slow: search in sequence	No	Yes
Magnetic or Cassette Tape	Fast: data or sound on electromagnetic surface	Slow: search in sequence	Yes/No	Yes
Videotape	Fast: light on magnetic surface	Slow: search in sequence	Yes/No	Yes/No
CRT Screen & Keyboard	Slow: electro-mechanical, but prone to human error	Fast: realtime search	Yes	No
Disk	Fast: electromagnetic under machine control	Fast: random search and access	Yes/No	Yes/No



## Workstation Hardware

### Overview

Block 3 introduces the hardware on your system: its monitor, keyboard, disk module(s), and optional printer(s).

Workstation terms used in block 3 that are unfamiliar to you are defined in instruction block 2 of the Instructor CAI.

The hardware terminology in this section is based upon your workstation's hardware installation manual. The installation manual describes your hardware as well as telling you how to put your B 20 together.

You should allow approximately one hour to complete this block of instruction.

Block 3 is composed of the following lessons:

- Lesson 1: Workstation Models
- Lesson 2: Workstation Monitors
- Lesson 3: Workstation Keyboards
- Lesson 4: Workstation Disks
- Lesson 5: Printer (Option) Models
- Review of Introduction to Workstation Hardware

### Objectives of Instruction Block 3

When you complete these lessons, you should be able to identify:

- Your model of workstation and keyboard
- Its type(s) of disk(s)

You should recognize the differences between:

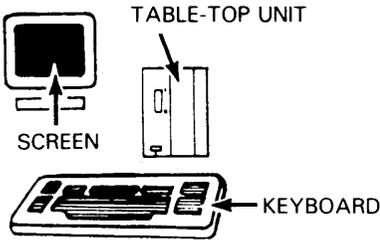
- Floppy and hard disks
- Serial and parallel printers

## Workstation Types

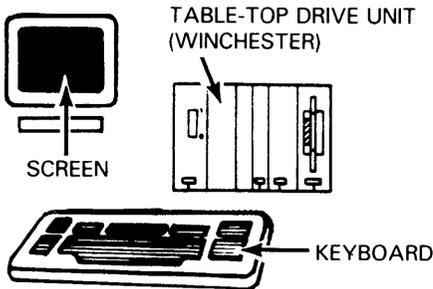
There are several models of workstations. You must compare your own model to those shown in Figure 3-1 in order to identify it correctly.

Figure 3-1 **Burroughs Workstations**

This unit (B 28 or B 26) is a clustered workstation with no disks (floppy disk or hard disk). The monitor is cabled to the table-top unit and a K2 keyboard.

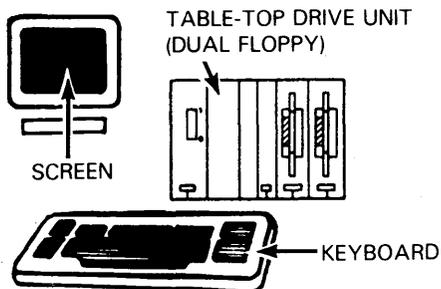


This unit (B 28 or B 26) contains both floppy and hard disk modules in its table-top unit. The workstation uses 5 1/4-inch floppy disks and has a K2 keyboard.

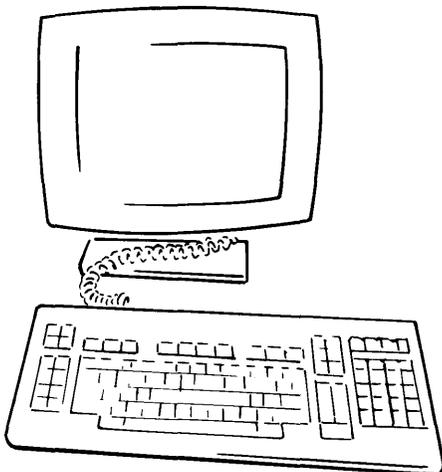


**Figure 3-1 Burroughs Workstations (Continued)**

This unit (B 26) has dual floppy-disk drives that use 5 1/4-inch floppy disks. Its processor and dual floppy drives are included in the table-top unit. A K1 keyboard is usually attached to this workstation.

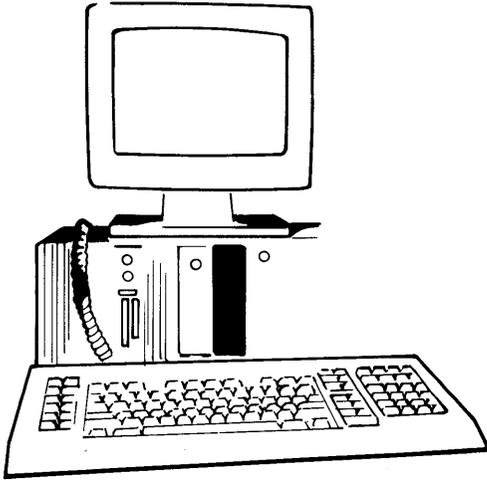


This unit (B 27) is a clustered workstation with no disks (floppy or hard disk.) Its monitor is shown cabled to the K3 keyboard and CPU module.

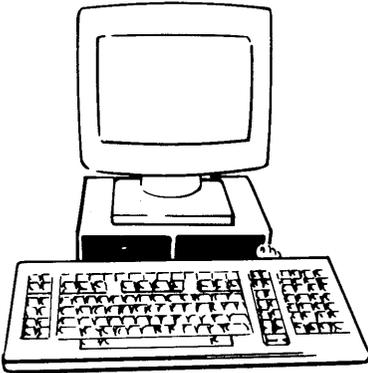


**Figure 3-1 Burroughs Workstations (Continued)**

This unit (B 27) shows a combo disk module (both floppy and hard disk), expansion disk module, and 15-inch monitor. The workstation uses 5 1/4-inch floppy disks and has a K3 keyboard.

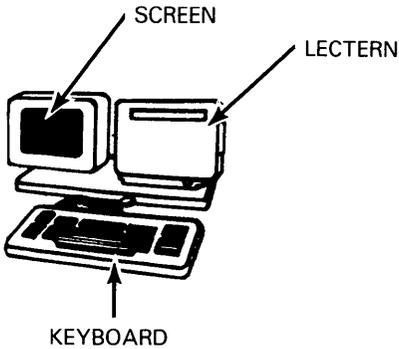


This unit (B 27) has a dual-floppy Disk-on-Desk drive that uses 5 1/4-inch floppy disks. Its 15-inch monitor is shown cabled to the disk drive and K3 keyboard.



**Figure 3-1 Burroughs Workstations (Continued)**

This workstation (B 21) has a single floppy-disk drive that uses 5 1/4-inch floppy disks. The monitor and lectern are mounted on the same pedestal. A K1 keyboard is usually attached to this unit.



**Note:** If you have a workstation that uses 8-inch disks (B 22), you must refer to Appendix C of this guide for hardware information.

## Monitor

Basic terms associated with the monitor that are unfamiliar to you are defined in block 2 of the Instructor CAI. They can also be located through the index for this guide.

You can adjust your monitor in two ways:

- Location. You can tilt the monitor itself up, down, right, or left to move it to a comfortable viewing position.
- Screen brightness. You control the brightness of the screen through a control wheel. You may rotate the control wheel toward yourself to increase brightness, away to dim it.

For B 27 units the control wheel is located underneath the right side of the monitor (as you face the screen).

For other B 20-series units, the control wheel is located underneath the left side of the monitor (as you face the screen).

## Workstation Keyboards

You use your workstation keyboard to:

- Enter data
- Control operations

through commands and information entered along with the commands.

The keyboard is movable. You can place it anywhere that is comfortable and that does not overstretch the cable connecting it to the monitor.

Workstations can have four types of keyboards:

- K1: on all B 20-series workstations
- K2: expanded keyboard, especially for word-processing applications
- K3: expanded keyboard, especially for word-processing applications
- K4: for special applications

Each keyboard has a distinctive layout or additional keys that define its expanded functions. In this guide and in block 3 of the CAI, you should select the keyboard type that matches the keyboard of your workstation.

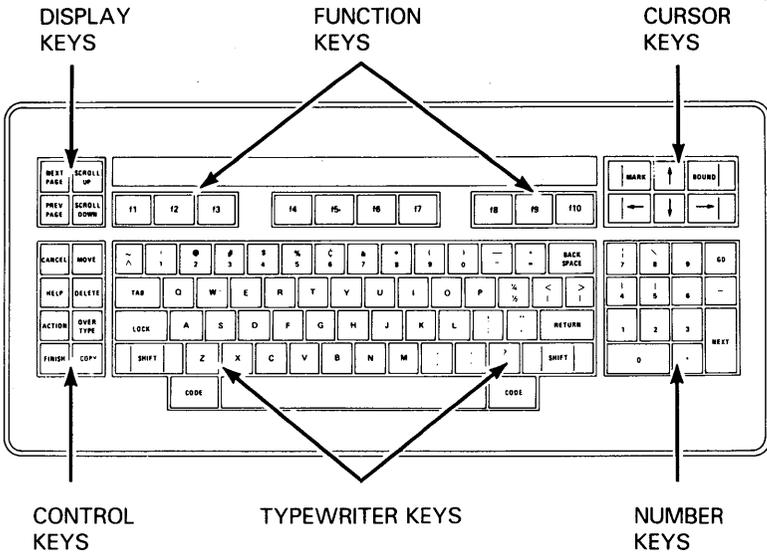
**Note:** *The text that follows presents the K1 keyboard (illustrated in Figure 3-2). If your keyboard does not look like the one in Figure 3-2, refer to the K2, K3, or K4 keyboards shown later in this section.*

### K1 Keyboard

The 98 keys on this keyboard are located in six groups (keypads), as shown in Figure 3-2. Each key on the keypad is described in this section and in block 3 of the CAI.

Basic workstation terms related to keyboards, applications software, and operating systems that are unfamiliar to you are defined in block 2 of the Instructor CAI.

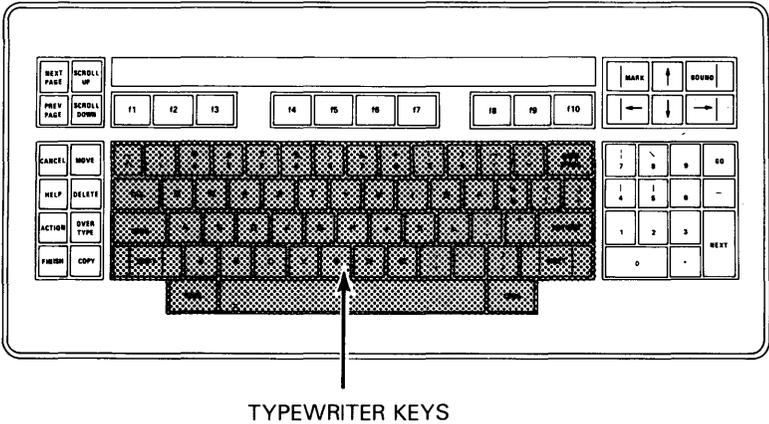
Figure 3-2 The K1 Keyboard



### Typewriter Keys

The K1 keyboard includes a standard set of typewriter keys as shown in Figure 3-3.

Figure 3-3 Typewriter Keys

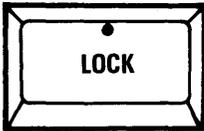


These keys allow you to enter characters (letters, numbers, punctuation marks, and symbols). Other keys that you would expect in this keypad, some with special functions for a workstation, are:



**SHIFT** works just as it does on a typewriter.

**LOCK** causes letters to become uppercase. The red light on the



**LOCK** key illuminates when the keyboard is locked into uppercase. To unlock the keyboard, press **LOCK** again. The red light goes out.

**LOCK** affects only letters, not numbers. You must use the **SHIFT** key to enter the symbols above the numbers.



**TAB** moves the cursor to a tab stop that has been set within an applications program. Within the BTOS command line (shown in Section 1), it moves the cursor to the next line on the screen.



**BACK SPACE** allows you to delete the previously entered letter. If you hold the **BACK SPACE** key down, it deletes letters continuously. With **OVERTYPE** on (see Control Keys), this key does not delete letters but moves the cursor one horizontal position to the left.



**RETURN** moves the cursor to the next line on the monitor screen, putting it in the left-most position available.

Locate the following special symbols on the keyboard:

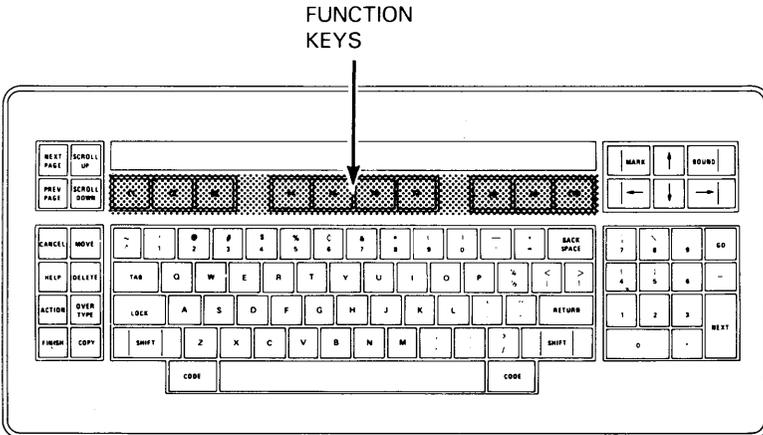
< and >	Angle brackets
[ and ]	Square brackets
~	Tilde
^	Exponent (or circumflex)

**Function Keys**

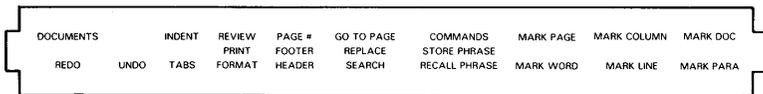
The K1 keyboard has ten function keys, shown in Figure 3-4, labeled f1 through f10. These keys can be placed under the direct control of applications software. Figure 3-5 below presents a sample of function keys under control of a word-processing application. By pressing the f1 function key, for example, you can see a list of all the documents you have created.

With the exception of the f1 key (explained in Disk 1 of your CAI as the "recall" key), you use these keys only with applications software. Reference manuals supplied with that software explain how to use the function keys to process information.

**Figure 3-4 Function Keys**



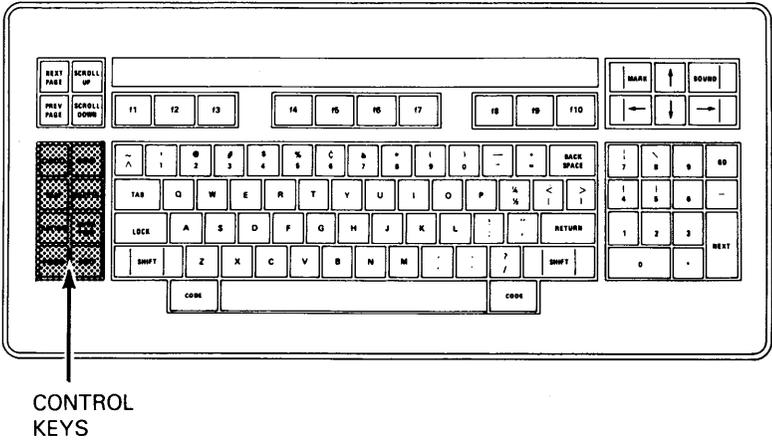
**Figure 3-5 Function Key Strip (Example)**



**Control Keys**

The control keys, highlighted in Figure 3-6, help you respond quickly to options available during normal operator activities. For example, when you have finished copying a diskette, the following message appears on the screen:

**Figure 3-6 Control Keys**



Press **GO** to continue, **CANCEL** to use another master, or **FINISH** to quit.

You respond to the options displayed by pressing one of the designated keys.

Keys in the control keypad are **CANCEL**, **HELP**, **ACTION**, **FINISH**, **MOVE**, **DELETE**, **OVER TYPE**, and **COPY**. **MOVE** and **COPY**, which are not used with BTOS operations, are defined in Disk 3 of Instructor when the word-processing functions of the BTOS Editor are explained.



**CANCEL** allows you to reconsider some information that you have entered on the screen or to choose another course of action, as in the example used with copying a diskette.



**HELP** requests the display of information.

When you have a command line on your screen (shown in Section 1), you can press **HELP** to see an alphabetized list of commands available on your workstation. Pressing **HELP** twice in succession tells the system to display a description of each command available to you.



**ACTION** is always used in conjunction with another key. For example, pressing **ACTION** and **OVERTYPE** simultaneously clears the screen of your monitor. Pressing any key restores the screen to its full display.



**FINISH** ends a command operation or an applications program. In the BTOS command line you would use **FINISH** to stop further operation of a command. In many applications programs, **FINISH** signals your request to stop the current work session.



**MOVE** is not used during operations within the BTOS command line. It functions within word-processing programs such as the BTOS Editor.



**DELETE** erases a single letter or a series of letters (in repeat mode). In shifted mode, it erases all letters in the current command line.



**OVERTYPE** causes the letter at the cursor position to be replaced by the one just entered. Normally, the keyboard is in "insert" mode, where new letters cause existing letters to shift to the right at the cursor position.

Pressing **OVERTYPE** locks the keyboard into overtype mode and causes the red light inside the keycap to come on. To return to insert mode, you must press **OVERTYPE** again. The red light goes out.

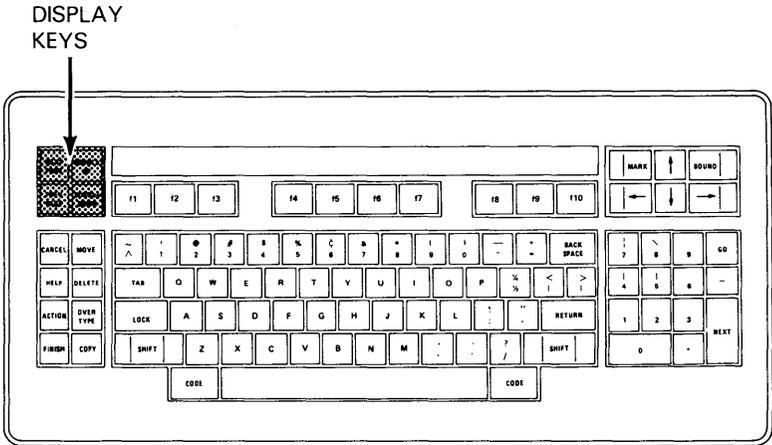


**COPY** is not used for operations in the BTOS command line. It functions within word-processing programs such as the BTOS Editor.

### Display Keys

The four display keys, highlighted in Figure 3-7, are: **NEXT PAGE**, **PREV PAGE**, **SCROLL UP**, and **SCROLL DOWN**. These keys control the amount of new information you want added to the screen: a line or a page (a group of 28 to 32 lines).

Figure 3-7 Display Keys

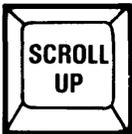




**NEXT PAGE** causes a full screen (28 to 32 lines) of information to be displayed on your monitor screen.



**PREV PAGE** selects the previous full screen (page) of text. **PREV PAGE** does not function in the BTOS command line, but is very important for many applications programs, such as word processing.



**SCROLL UP** causes a line of new information to be added to the bottom of the screen. As each line shifts upward, the top line is scrolled off the screen.

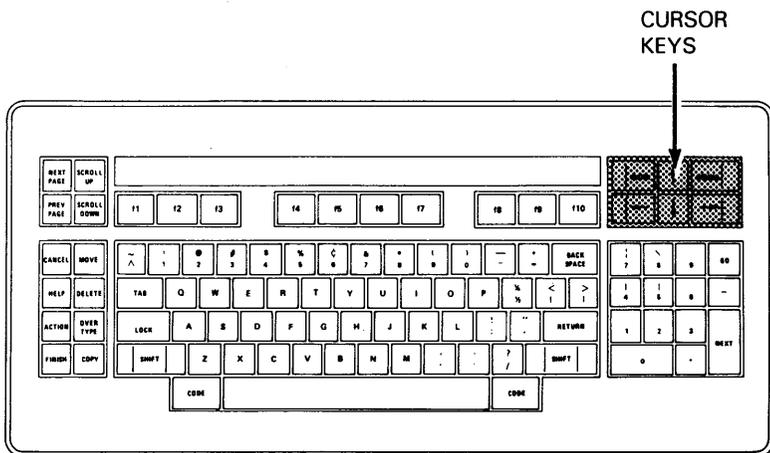


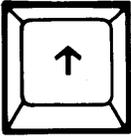
**SCROLL DOWN** causes a line of new information to be added to the top of the screen. It does not function within the BTOS command line, but is very important for many applications programs, such as word processing.

### Cursor Keys

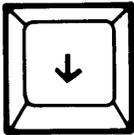
The six cursor keys, shown in Figure 3-8, move the cursor to a new position.

Figure 3-8 Cursor Keys

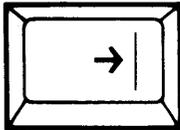




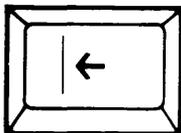
The **Up Arrow** moves the cursor upward, one line at a time. The cursor does not shift to the right or left. If you hold the key down, it repeats the upward motion until you release it or it comes to the first line of the first page of your display.



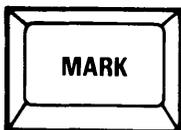
The **Down Arrow** moves the cursor downward, one line at a time. The cursor does not shift to the right or left. If you hold the key down, it repeats the downward motion until you release it or it comes to the last line of the last page of your display.



The **Right Arrow** moves the cursor one space to the right along the current screen line each time you press it. If you hold the key down, it moves the cursor right continuously until it reaches the last position on the line. To move to a new line requires an up or a down arrow.



The **Left Arrow** moves the cursor one space to the left along the current line each time you press it. If you hold the key down, it moves the cursor left continuously until it reaches the first position on the line. To move to a new line requires an up or a down arrow.



**MARK** is not used within the BTOS command line. It is used extensively, however, within word-processing applications.

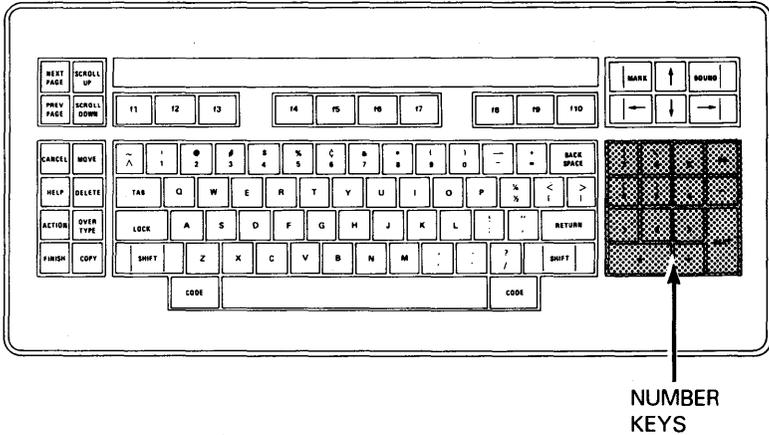


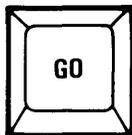
**BOUND** is not used within the BTOS command line. It is used extensively, however, within word-processing applications.

### Number Keypad

The ten number keys, highlighted in Figure 3-9, are set up like those on a calculator. The numbers function like the typewriter number keys, but are located on a separate keypad to make entry easier. **GO** and **NEXT** are included in the keypad.

Figure 3-9 Number Keys





You press **GO** to execute a command (Section 4 explains BTOS commands).



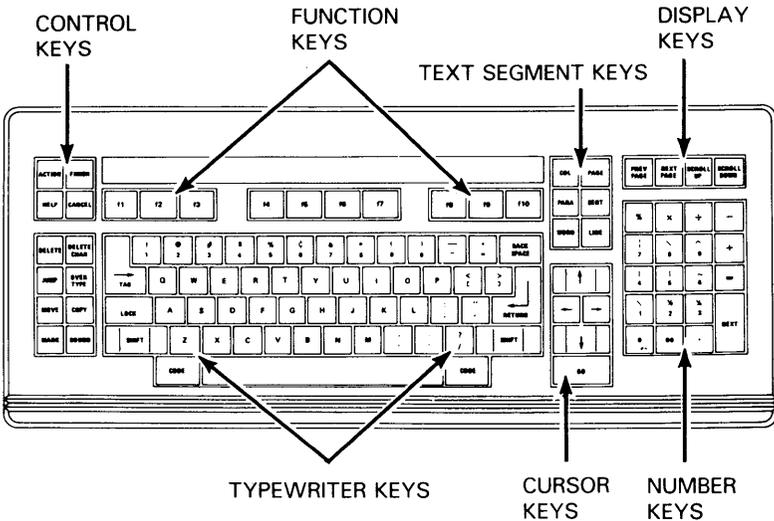
**NEXT** re-positions the cursor at the beginning of the next line on the screen. It is located with the number keys for ease of use when you are entering numbers.

## K2 Keyboard

The K2 keyboard consists of seven groups (keypads) as shown in Figure 3-10.

Some keys (for example, the function keys) are defined by the particular applications software that is currently running on the system. Reference manuals supplied with those applications programs contain instructions on how to use those keys within that application.

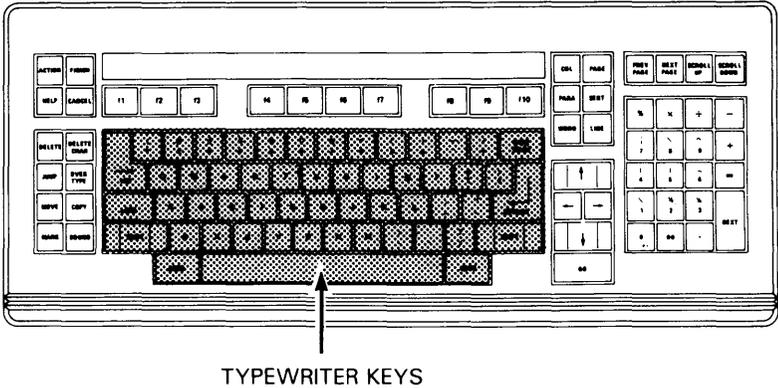
Figure 3-10 The K2 Keyboard



## Typewriter Keys

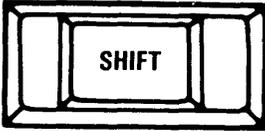
Your K2 keyboard includes a standard set of typewriter keys as shown in Figure 3-11.

Figure 3-11 Typewriter Keys

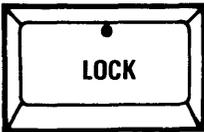


TYPEWRITER KEYS

These keys allow you to enter characters (letters, numbers, punctuation marks, and symbols). Other keys that you would expect in this keypad, some with special functions for a workstation, are:

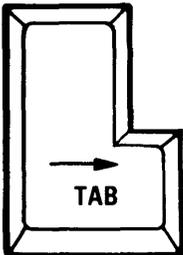


**SHIFT** works just as it does on a typewriter. However:



**LOCK** causes letters to become uppercase. The red light on the **LOCK** key illuminates when the keyboard is locked in uppercase. To unlock the keyboard, press **LOCK** again. The red light goes out.

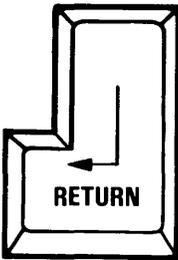
The **LOCK** key affects only letters, not numbers. You must use the **SHIFT** key to enter a symbol above a number.



**TAB** moves the cursor to a tab stop that has been set within an applications program. Within the BTOS command line (described in Section 1), it moves the cursor to the next line on the screen.



**BACK SPACE** allows you to delete the previously entered letter. If you hold the **BACK SPACE** key down, it deletes letters continuously. With **OVERTYPE** on (see Control Keys), this key does not delete letters but moves the cursor one horizontal position to the left.



**RETURN** moves the cursor to the next line on the monitor screen, putting it in the left-most position available.

Locate the following special symbols on the keyboard:

- |         |                          |
|---------|--------------------------|
| < and > | Angle brackets           |
| [ and ] | Square brackets          |
| ~       | Tilde                    |
| ^       | Exponent (or circumflex) |

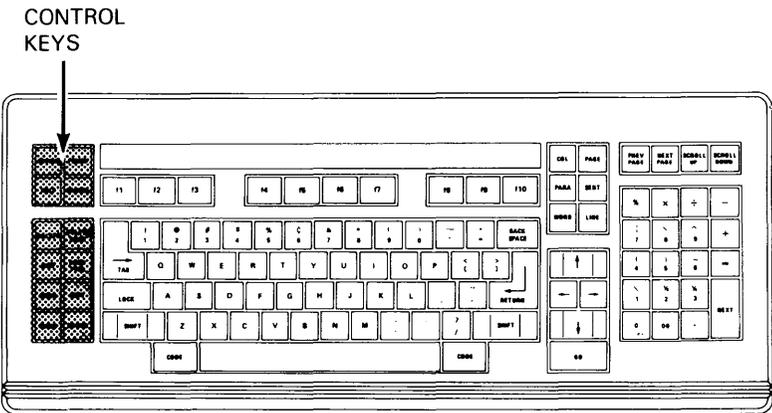


## Control Keys

The control keys, highlighted in Figure 3-14, are: **ACTION**, **FINISH**, **HELP**, **CANCEL**, **DELETE**, **DELETE CHAR**, **JUMP**, **OVERTYPE**, **MOVE**, **COPY**, **MARK**, and **BOUND**. These keys help you respond quickly to options available during normal operator activities. For example, when you have finished copying a diskette, the following message appears on the screen:

Press **GO** to continue, **CANCEL** to use another master, or **FINISH** to quit.

Figure 3-14 Control Keys



You respond to the options displayed by pressing one of the designated keys.



**ACTION** is always used in conjunction with another key. For example, pressing **ACTION** and **OVERTYPE** simultaneously clears the screen of your monitor. Pressing any key restores the screen to its full display.



**FINISH** ends a command operation or an applications program. In the BTOS command line you would use **FINISH** to stop further operation of a command. In many applications programs, **FINISH** signals your request to stop the current work session.



**HELP** requests the display of information.

When you have a command line on your screen (described in Section 1), you can press **HELP** to see an alphabetized list of commands available on your workstation. Pressing **HELP** twice in succession tells the system to display a description of each command available to you.

In some cases, you may be instructed to use **HELP** in conjunction with some other key. Those cases are explained in the applicable reference manual.



**CANCEL** allows you to reconsider some information that you have entered on the command line or to choose another course of action. The options in a particular case display on your monitor screen.



**DELETE** erases a single letter or a series of letters (in repeat mode). In shifted mode, it erases all letters in the current command line.



**DELETE CHAR** erases one character at a time.



You press **JUMP** to move the cursor to a new position. The new position is defined by a Text Segment Key (for example, **LINE** or **PAGE**).



You press **OVERTYPE** to strike over an incorrect character or symbol with the correct character or symbol. The light on the **OVERTYPE** key illuminates when **OVERTYPE** is in effect.



**MOVE** is not used for operations in the BTOS command line. It functions within word-processing programs such as the BTOS Editor or the Professional Word Processor program.



**COPY** is not used for operations in the BTOS command line. It functions within word-processing programs such as the BTOS Editor.



**MARK** is not used for operations in the BTOS command line. It specifies the beginning of a word or group of characters to be changed (moved, deleted, copied, and so on) within a word processed document.



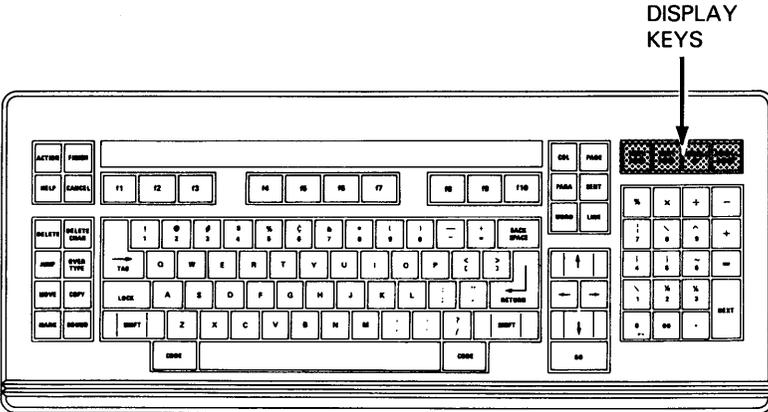
**BOUND** is not used for operations in the BTOS command line. It specifies the beginning of a word or group of characters to be changed (moved, deleted, copied, and so on) within a word processed document.



### Display Keys

The four display keys, shown in Figure 3-16, are: **NEXT PAGE**, **PREV PAGE**, **SCROLL UP**, and **SCROLL DOWN**. These keys control the amount of new information you want added to the screen: a line or a page (a group of 28 to 32 lines).

Figure 3-16 **Display Keys**



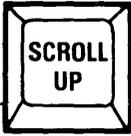
Press the display keys to move information displayed on the screen:



**NEXT PAGE** causes a full screen (28 to 32 lines) of information to be displayed on your monitor screen.



**PREV PAGE** selects the previous full screen (page) of text. **PREV PAGE** does not function in the BTOS command line, but is very important for many applications programs, such as word processing.



**SCROLL UP** causes a line of new information to be added to the bottom of the screen. As each line shifts upward, the top line is scrolled off the screen.

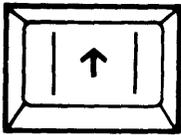
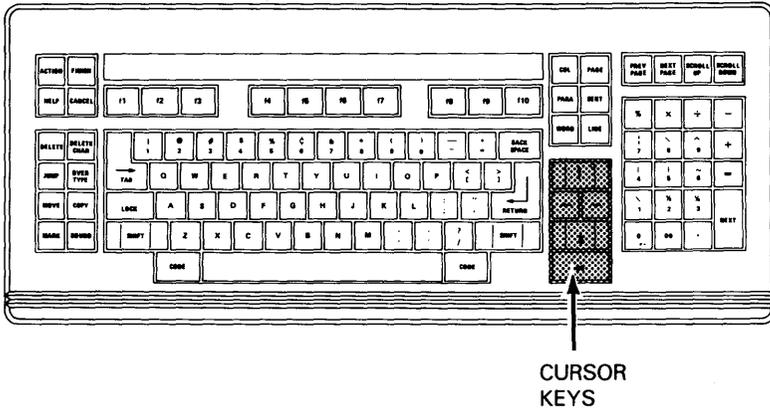


**SCROLL DOWN** causes a line of new information to be added to the top of the screen. It does not function within the BTOS command line, but is very important for many applications programs, such as word processing.

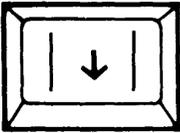
## Cursor Keys

The four cursor keys, shown in Figure 3-17, move the cursor to a new position. The **GO** key is also found on this portion of the keyboard.

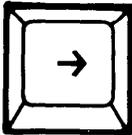
Figure 3-17 **Cursor Keys**



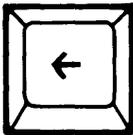
The **Up Arrow** moves the cursor upward, one line at a time. The cursor does not shift to the right or left. If you hold the key down, it repeats the upward motion until you release it or it comes to the first line of the first page of your display.



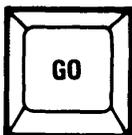
The **Down Arrow** moves the cursor downward, one line at a time. The cursor does not shift to the right or left. If you hold the key down, it repeats the downward motion until you release it or it comes to the last line of the last page of your display.



The **Right Arrow** moves the cursor one space to the right along the current screen line each time you press it. If you hold the key down, it moves the cursor right continuously until it reaches the last position on the line. To move to a new line requires an up or a down arrow.



The **Left Arrow** moves the cursor one space to the left along the current line each time you press it. If you hold the key down, it moves the cursor left continuously until it reaches the first position on the line. To move to a new line requires an up or a down arrow.



You press **GO** to execute an Executive command (Refer to Section 4 for more information on BTOS commands).

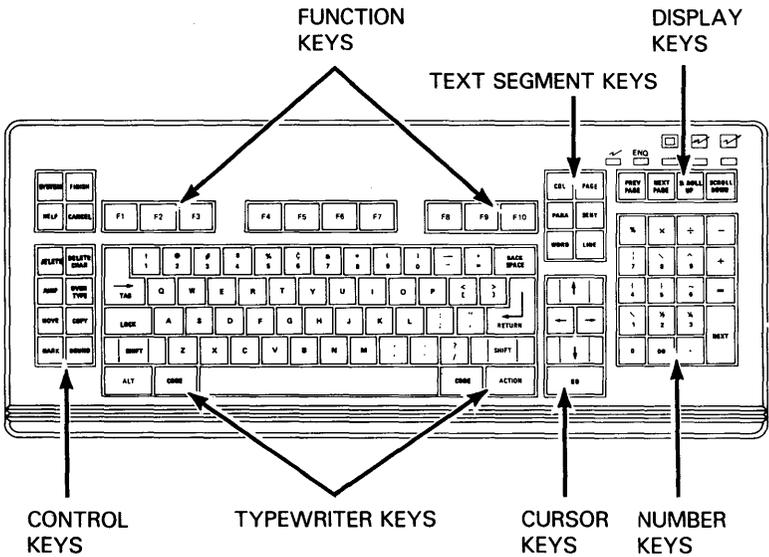


### K3 Keyboard

The K3 keyboard consists of seven groups (keypads) as shown in Figure 3-19. Each key within these groups is defined in the section on the K2 keyboard since the K2 and the K3 keyboards are functionally the same.

Some keys (particularly function keys) operate differently under program control. The **SYSTEM** and **ALT** keys, for example, are reserved for functions within special applications programs. They are not used with either BTOS commands or the Instructor CAI program.

Figure 3-19 K3 Keyboard

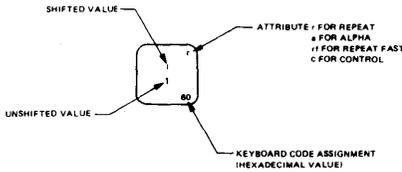
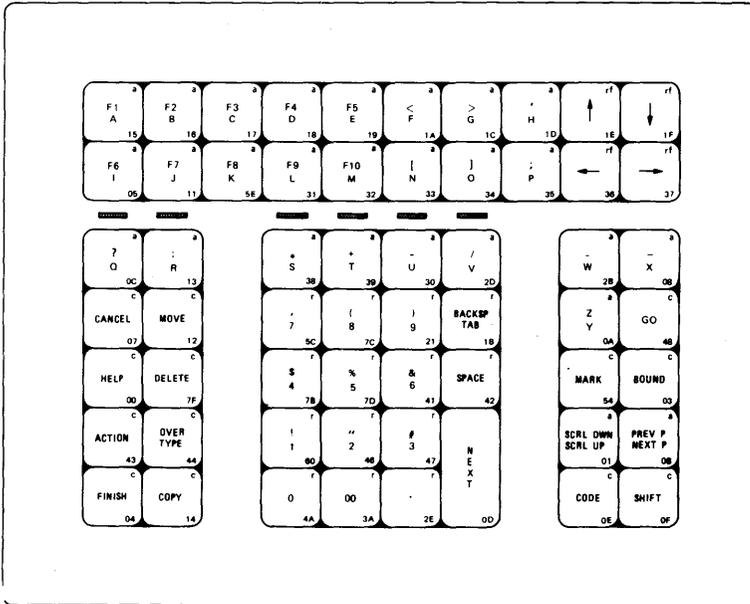


### K4 Keyboard

The K4 Keyboard is a numeric and function key keyboard that can be customized for use with financial applications software. It is composed of 12 numeric and 47 function keys that can be put under control of the user's applications software.

If you are going to use this keyboard, you will be told how to use it by your supervisor. Some of the potential uses of this keyboard are described as follows.

Figure 3-20 K4 Keyboard



### **Magnetic Card Operations**

Two types of magnetic card readers (MCRs) can be attached to the rear of the keyboard. Magnetic card operations use the five light-emitting diodes (LEDs) that report the status of information entered through the magnetic card reader.

When the LEDs are on, for example, you can pass a card through the reader. Blinking LEDs signal an error in the information read from the card.

### **Numeric Keypad**

The numeric keypad in the center of the K4 keyboard is designed for calculator-type operation. Mathematical functions, located on the top row, are available through **SHIFT** plus the selected math function.

### **Control Keys**

To the left and the right of the numeric keypad are located the control keypads that contains system functions such as **CANCEL, HELP, FINISH**, and cursor control. Text-processing functions are divided between the two control keypads.

# Workstation Disks and Disk Drives

Workstations with floppy disk drives use 5 1/4-inch floppy disks. Insertion and removal instructions differ by unit.

All of the drives that use 5 1/4-inch floppy disks are illustrated in Figure 3-21.

The 8-inch floppy-disk drive, used on the B 22 mass-storage units, is illustrated in Appendix C. Mass-storage disks are sealed, Winchester-type hard disks.

Figure 3-21 Workstation Disk Drives

### TABLE-TOP DRIVES

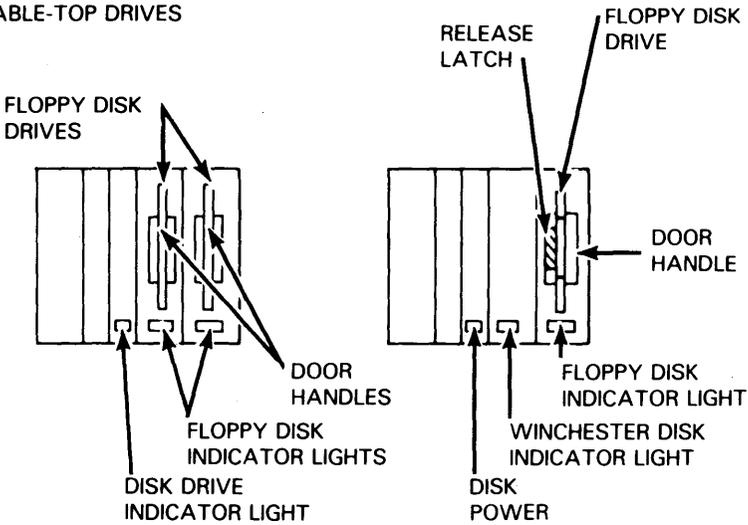
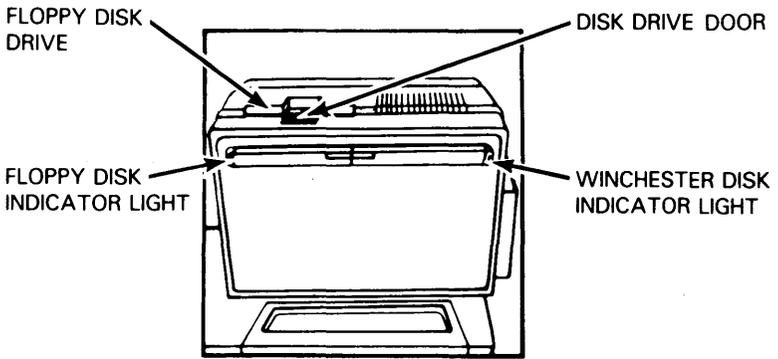
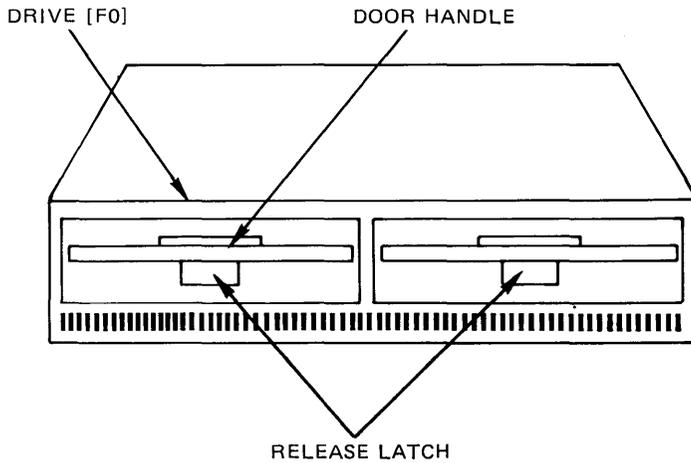


Figure 3-21 Workstation Disk Drives (continued)

B 21



B 27 DUAL FLOPPY



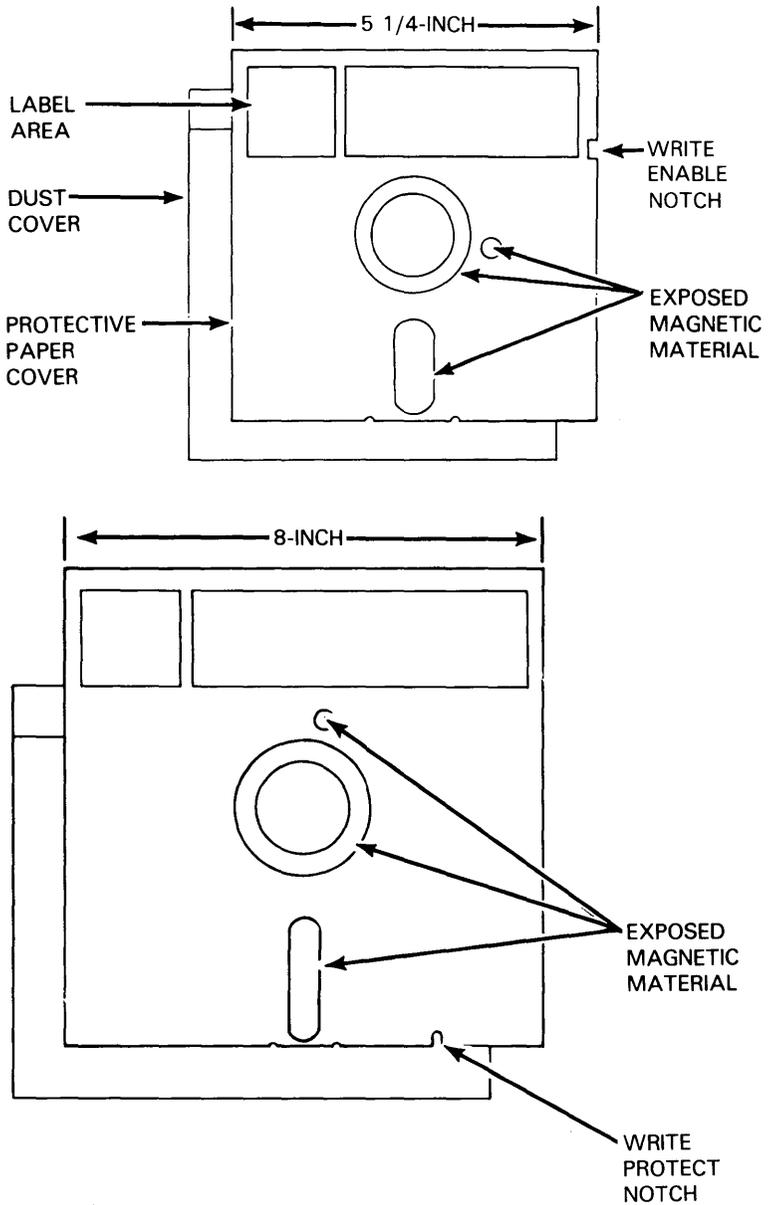
## Handling Floppy Disks

Figure 3-22 illustrates the two types of floppy disks (5 1/4-inch and 8-inch).

When handling floppy disks:

- Grasp only the label area. Do not touch exposed magnetic material. (See Figure 3-22.)
- Store floppy disks upright in jackets. Keep them out of direct sunlight, away from magnetic material, and in a dry area at normal room temperature.
- Do not use floppy disks that have recently been in a hot or cold environment. Wait for them to adjust to room temperature.
- Write on floppy disk labels before attaching them to the floppy disks. Writing directly on a floppy disk can damage the magnetic material (and your data).
- Do not fasten paper clips to floppy disks.

Figure 3-22 Floppy Disks

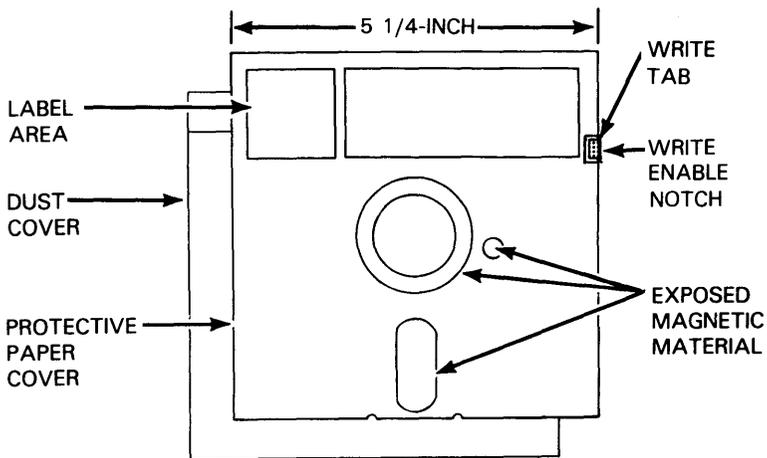


### The Write Enable Notch

The 5 1/4 inch floppy disks used on workstations have a notch on them that shows whether or not information can be changed. When the notch is visible, as illustrated in Figure 3-22, you can add, delete, or modify information on the disk. The floppy disk is "write enabled."

When the notch is covered with a write tab (as shown in Figure 3-23), you cannot change any information on the floppy disk. The contents of the floppy disk are therefore "write protected."

Figure 3-23 Write Tab Applied Over Notch



---

**Caution:** *Never open a drive door when the disk indicator light for that drive is on. Damage to the disk or drive could result.*

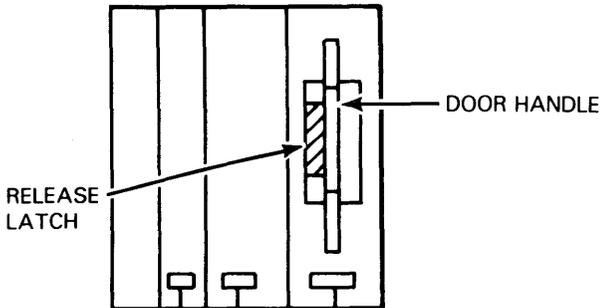
---

To insert a floppy disk, you should refer to the following sections:

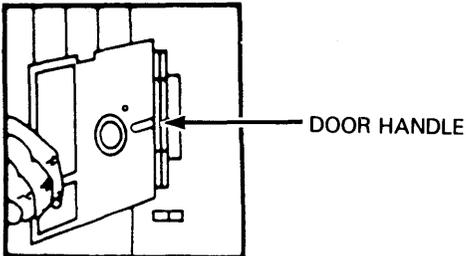
- B 28 or B 27 or B 26 procedures are described in Inserting a Floppy Disk and shown in Figure 3-24.
- B 27 Dual-Floppy procedures are described in Inserting a Floppy Disk (B 27 Dual-Floppy Drives) and shown in Figure 3-25.
- B 21 procedures are described in Inserting Floppy Disks (B 21) and shown in Figure 3-26.
- B 22 procedures are described in Appendix C.

### Inserting a Floppy Disk

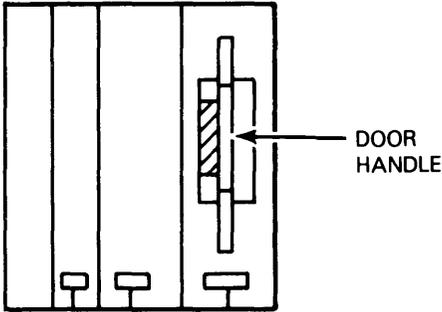
- 1 Remove the floppy disk from its jacket.
- 2 If the door of the floppy drive is not open, open it by pressing the release latch on the left side of the door area. The release latch is located to the left of the door handle. When you press it, the door handle springs to the right.



- 3 Position the floppy disk as illustrated, then slide the floppy disk into the drive until it stops. The floppy disk label must face the door handle and the write enable notch must face up. If you insert the floppy disk properly, it will not come out when you release it.



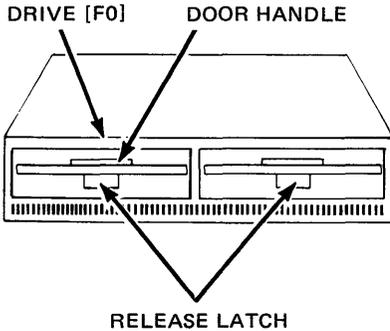
- 4 Close the floppy disk drive door by sliding the door handle to the left until you hear a click. (The door must remain closed for your B 28 or B 26 to use the floppy disk.)



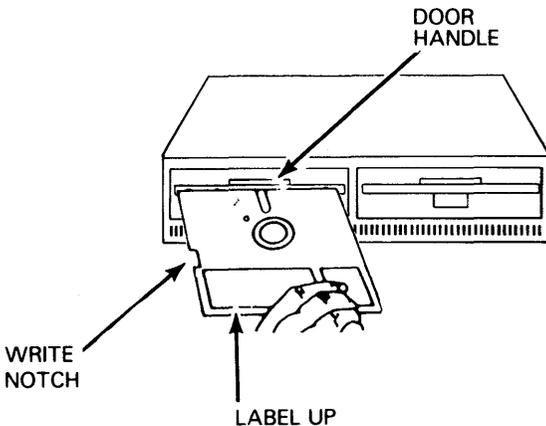
Your floppy disk is inserted and ready for use on the system. The indicator light flashes on when the disk is in use (sending or receiving information).

**Inserting a Floppy Disk (B 27 Dual-Floppy)**

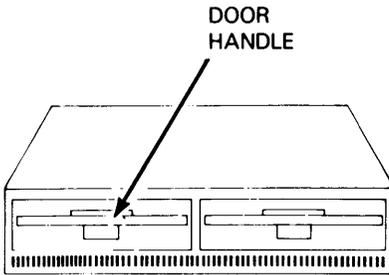
- 1 Remove the floppy disk from its jacket.
- 2 If the door of the floppy drive is not open, open it by pressing the release latch on the bottom side of the door area.



- 3 Position the floppy disk as illustrated, then slide it into the drive until it stops. The floppy disk label must face up and the write enable notch must be on the left. If the floppy disk is inserted properly, it will not come out when you release it.



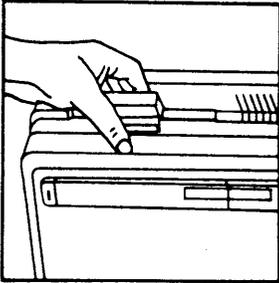
- 4 Close the floppy disk drive door by lowering the door handle until you hear it click shut. (The door must remain closed for your B 27 to use the floppy disk.)



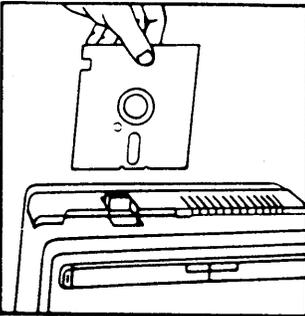
Your floppy disk is inserted and ready for use on the system. The indicator light flashes on when the disk is in use (sending or receiving information).

**Inserting a Floppy Disk (B 21)**

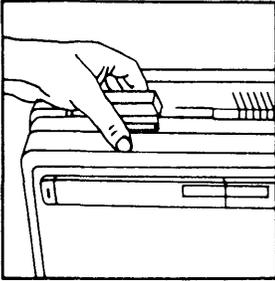
- 1 Remove the floppy disk from its jacket.
- 2 If the door of the floppy drive is not open, open it by pressing down on the back part of the door.



- 3 Position the floppy disk as illustrated, then slide the disk into the drive until it stops. The floppy disk label must face away from you and the write enable notch must face to the left.



- 4 Close the floppy disk drive door by pulling the door forward. (The door must be closed for your B 21 to use the floppy disk.) If you have inserted the floppy disk properly, the door closes easily.



Your floppy disk is inserted and ready for use on the system. The indicator light flashes on when the disk is in use (sending or receiving information).

### Removing a Floppy Disk

---

**Caution:** *Never open a disk drive door when an indicator light is on. Wait until activity stops (the light goes out).*

---

To remove a floppy disk, you should proceed as follows:

*If you have a B 28 or B 27 or B 26 workstation:*

1 Open the door of the floppy disk drive.

The floppy disk comes partially out when you open the door.

2 Grasp the floppy disk and slide it out of the floppy disk drive.

3 Close the drive door.

4 Store the floppy disk in its jacket.

*If you have a B 27 Dual-Floppy:*

1 Open the floppy disk drive door.

The floppy disk comes partially out when you open the door.

2 Grasp the floppy disk and slide it out of the floppy disk drive.

3 Close the drive door.

4 Store the floppy disk in its jacket.

*If you have a B 21 workstation:*

1 Open the door of the floppy disk drive.

2 Grasp the floppy disk and slide it out of the floppy disk drive.

3 Leave the door open.

4 Store the floppy disk in its jacket.

**Note:** *The doors of floppy disk drives on B 21 workstations should normally be left open when not in use.*

## Printer (Option) Models

Burroughs printers that can be attached to a workstation or a cluster of workstations are classified by type (parallel or serial) in Table 3-1. Those printers are further described in their respective installation manuals.

Table 3-1 **Burroughs Printers**

<b>Burroughs Printer</b>	<b>Type</b>	<b>Default Device Name</b>	<b>Default Queue Name</b>
B 9251-1	Parallel	[Lpt]	[Spl]
B 9252	Parallel	[Lpt]	[Spl]
B 9253	Parallel	[Lpt]	[Spl]
AP 1302	Serial	[PtrB]	[SpIB]
AP 1303	Serial	[PtrB]	[SpIB]
AP 1305	Serial	[PtrB]	[SpIB]
AP 1311	Serial	[PtrB]	[SpIB]
AP 1320	Serial	[PtrB]	[SpIB]
AP 1351	Serial	[PtrB]	[SpIB]

## Section 6

---

# Managing Volumes and Files

### Overview

Block 6 teaches you how to use BTOS commands that display information on disk volumes. Disk-status command report on the contents of the volume and on space available for new data. With the file-maintenance commands in this section, you can duplicate, list (show the contents of), or remove any file on the volume.

You should allow approximately 45 minutes to complete this block of instruction.

There are four lessons in this block:

- Lesson 1: Listing Directories and Files
- Lesson 2: Viewing the Contents of Files
- Lesson 3: Copying Files and Volumes
- Lesson 4: Changing Names and Deleting Files

### Objectives of Instruction Block 6

After completing the exercises in this section, you can:

- Determine the status and contents of any disk volume
- View any data file on the monitor
- Copy files, groups of files, or diskettes
- Rename and delete files

## Workstation Software

---

### Overview

Block 4 introduces the BTOS operating system. It explains how you:

- Use BTOS commands
- Prepare a disk for your use
- Establish security on your workstation

It also discusses how file names help to organize information stored on disks.

The Instructor program leads you through its presentation of software terms, reviews that material with you, and questions you about concepts you have learned.

Any software terms used in block 4 that are unfamiliar to you are defined in Instruction Block 2 of the Instructor CAI and listed in the glossary of this guide.

Section 4 of this guide presents materials not for reading (as a training exercise), but for reference. After an overview of the topics covered in block 4 of the CAI, it lists the commands available on hard- and floppy-disk workstations and summarizes the formats used for file names.

Instruction Block 4 consists of the following lessons:

- Lesson 1: BTOS Operating System
- Lesson 2: The Executive
- Lesson 3: Commands
- Lesson 4: Initializing Disks
- Lesson 5: File Handling
- Lesson 6: Security

## Objectives of Instruction Block 4

When you complete this block, you will be familiar with the following software terms:

- BTOS
- System commands
  - default values
  - variable fields
- File names
- Disk initialization and archive
- System security

### Lesson 1: BTOS Operating System

This lesson introduces you to the workstation operating system called BTOS. It describes the major functions of BTOS and classifies the types of software you can find on your workstation.

### Lesson 2: The Executive

When you use your workstation, you control activities through the Executive. Instructor describes the important features of the Executive, such as the *SignOn screen* and the *command line*.

### Lesson 3: Commands

This lesson tells you how to use BTOS commands. After discussing their functions and types, Instructor describes command *parameters* and *defaults*.

### Lesson 4: Initializing Disks

In lesson 4, Instructor tells you how to prepare a blank disk for use on your workstation. The discussion covers both the *IVOLUME* and *IVARCHIVE* commands.

## Lesson 5: File Handling

Instructor discusses the three elements of BTOS file names and presents the rules for creating and naming files. A full screen of sample names is an optional feature of this lesson.

## Lesson 6: Security

In this lesson Instructor describes the levels of security available on Burroughs workstations.

## Tables of Commands

Although each workstation can have a unique set of system commands, there are basic sets of commands that can be found on all systems. The tables in this section list the standard commands available on both the hard-disk and the standalone dual-floppy types of workstation.

As Instructor explains, your operating system Executive displays the full list of commands available on your workstation when you press the **HELP** key. Tables 4-1 and 4-2 are samples of **HELP** displays.

Table 4-1 **Commands for Hard Disk Systems**

Append	Path
Backup Volume	Plog
Change Volume Name	Record
Copy	Remove Command
Create Configuration File	Remove Directory
Create Directory	Rename
Create File	Replay
Debug File	Restore
Delete	Run
Dump	Run File
Edit	Screen Setup
Files	Selective Backup
Floppy Copy	Set Directory Protection
Format	Set File Prefix
lvarchive	Set Protection
lvolume	Set Time
Login	Software Installation
Logout	Stop Record
Maintain File	Submit
Make Translation File	Type
New Command	Volume Status

Table 4-2 **Commands for Dual-Floppy Systems**

*Note: Commands that are unique to a particular floppy disk are italicized.*

**Disk 1 (B20SF7-1)**

Append	Remove Directory
Copy	Rename
<i>Command File Editor</i>	Run
Create Directory	Run File
Delete	Screen Setup
List	Set File Prefix
Login	Set Protection
<i>Logout</i>	Stop Record
Path	Type
Playback	<i>User File Editor</i>
Record	Video

**Disk 2 (B20SF7-2)**

Append	Record
<i>Change Volume Name</i>	<i>Remove Command</i>
Copy	Remove Directory
Create Directory	Rename
Create File	Run
Delete	Run File
<i>Files</i>	Screen Setup
<i>Floppy Copy</i>	Set File Prefix
<i>Format</i>	Set Protection
<i>Ivolume</i>	Stop Record
List	<i>Submit</i>
Login	Type
New Command	Video
Path	<i>Volume Status</i>
Playback	

Table 4-2 **Commands for Dual-Floppy Systems (continued)****Disk 3 (B20SF7-3)**

Append	<i>Plog</i>
Copy	Playback
<i>Create Configuration File</i>	Record
Create Directory	Remove Directory
Create File	Rename
<i>Debug File</i>	Run
Delete	Run File
<i>Dump</i>	Screen Setup
Login	Set File Prefix
List	Set Protection
<i>Maintain File</i>	Stop Record
<i>Make Translation File</i>	Type
Path	Video

**Disk 4 (B20SF7-4)**

Append	Record
Copy	Remove Directory
Create Directory	Rename
Create File	Record
Delete	Run
<i>Edit</i>	Run File
<i>Files</i>	Screen Setup
List	Set File Prefix
Login	Set Protection
Path	Stop Record
Playback	Video

## Format of Names

You must create names for volumes, directories, and files according to the format and length shown in Table 4-3. BTOS does not accept names that do not follow the formats shown.

Table 4-3 Volume, Directory and File Names

Level	Format	Description
VOLUME	[volname]	You should enclose volume names in square brackets. The maximum length of a name is 12 letters.
DIRECTORY	<dirname>	You should enclose directory names in angle brackets. The maximum length of a name is 12 letters.
FILE	file.name	You can enter up to 50 letters, including some marks of punctuation (such as a period) to run words together. You should not leave blank spaces in filenames.

Examples of correct filenames are shown below:

[Win]<accounting>Nov:payroll	The November payroll file in the Accounting directory on the hard (Winchester) system disk.
[Sys]<reports>May85-budget	The May 1985 budget file in the Reports directory on the system disk.
[Contracts]<active>ABC.Corp	The ABC Corporation file in the Active directory on the Contracts disk.
[f0]<learning>section.1	Section 1 of a document in the Learning directory on floppy diskette.

## System Training: Basic Operations

### Overview of System Training

Instruction Blocks five through eight of the BTOS Operations Training course train you to use the BTOS commands needed to operate the workstation. The command fields you enter to complete the exercises in CAI blocks five through eight are printed in italics in the corresponding sections of this training guide and your BTOS Operations Training Reference Card.

### Guided Operations

You activate system training by entering *SYSTRAIN* on the BTOS command line. Instructor responds to every command field you enter and suggests how to correct your entry, if you type in a command or a field incorrectly.

Each exercise displays a valid BTOS command. If you exit from Instructor, you can enter the command and its parameters, italicized in each figure, on the BTOS command line in a "live" (as opposed to practice) environment.

### Entering Command Fields

The BTOS Executive allows you to abbreviate commands and type them in either uppercase or lowercase letters. The Instructor program, however, is not that flexible. It requires all entries in lowercase letters or with the capitalization shown in the examples printed in this guide.

When you exit to the BTOS Executive, you can use whatever abbreviations and capitalization that the Executive accepts.

### Standalone Dual-Floppy Restrictions

Exercises in blocks five through eight presume you are using, or are clustered to, a workstation with a hard disk. The command parameters shown, then, apply to all configurations except standalone dual-floppy workstations.

If you are operating a standalone dual-floppy workstation, you should perform the Instructor exercises as described in the training guide but must *always* modify your input on the BTOS command line as follows:

[Sys] = [f0] and is the left-hand "system" drive

[f0] = [f1] and is the right-hand "work" drive

## **Materials Required for System Training**

You cannot perform the exercises in blocks five through eight without this guide or the *BTOS Operations Training Reference Card* and, in some lessons, disk 2 (B200T7-2) itself.

You need two blank floppy disks if you want to perform IVOLUME and IVARCHIVE exercises on your workstation. You would use a separate blank disk for each command. Copy routines and printing exercises are based upon files stored on disk B200T7-2. You must insert B200T7-2 in the appropriate disk drive when instructed to do so.

## **Overview of Instruction Block 5**

After an introduction to system training, Instructor describes the organization of the lessons in system training and reviews the SignOn process for those who did not install their own software.

You should allow approximately one hour to complete this block of instruction.

Block 5 presents the following lessons:

Lesson 1: Initializing Standard Volumes

- a. Exercise on IVOLUME
- b. Notes on Initialization

Lesson 2: Initializing Archive Volumes

- a. Exercise on IVARCHIVE
- b. Notes on Archiving

Lesson 3: Creating Directories

- a. Exercises on CREATE DIRECTORY
- b. Setting Your PATH
- c. Additional Exercises

Lesson 4: Creating Files

- a. Exercises on CREATE FILE
- b. Filename Shortcuts

---

## Objectives of Instruction Block 5

After you complete the exercises in block 5, you will be able to:

- Initialize floppy diskettes
- Create directories on any disk volume
- Create file names

## Introduction to System Training

Every work session on a workstation begins with the SignOn procedure. The complete procedure can be as simple as pressing the **GO** key or it can require that you supply:

- A user name
- A password
- The correct date and time

Figure 5-1 shows a completed BTOS SignOn form. The date and time have been set (shown in the upper right-hand corner of the figure) and the user has been properly logged on. Lesson 3 of the Introduction to System Training takes you through this procedure step by step.

Figure 5-1 Completed System SignOn Form (Example)

```

Executive 7.0.0
Path: [Sys]<Sys>
Fri Dec 12, 1986 9:00 AM

```

---

BURROUGHS OPERATING SYSTEM BTOS 7.0.0

User name	Enter an application name or leave this line blank to display a Command form.
Password	Enter your assigned password (optional).
Day/Date/Time	Enter the current day, date and time (if not already set).

Then press the GO key.

```

User Name (e.g., Allen)
Password
Day/Date/Time
(e.g., Fri Sep 9, 1983 8:00 am)

```

##  
fri 12/12/86 9:00 am

### SignOn Exercise

The SignOn exercise in Instructor asks you to supply the entries italicized in Figure 5-1, a properly completed SignOn form. The steps are:

- 1 Enter a user name or leave the line blank.
- 2 Press RETURN.
- 3 Enter a password of ##.

**Note:** The password entry ## simulates the display of any two-letter password, such as AA or A0. Each character in a password is displayed on the monitor as a pound sign (#) to safeguard the privacy of the entry.

- 4 Press RETURN.
- 5 Enter the date and time: *Fri Dec 12, 1986 9:00 am*
- 6 Press RETURN.

## HELP Process

In this training exercise, you press the **HELP** key to list the commands on your workstation. You must exit from Instructor before performing this exercise.

**1** Press **HELP**.

An alphabetized list commands appears.

**2** Press **NEXT PAGE** (if necessary).

If your list of commands is longer than one screen (called a page), you are prompted to press **NEXT PAGE**.

**3** Press **HELP** again.

Your workstation displays its commands in alphabetical order, with each command followed by a brief description.

**4** Press **NEXT PAGE** until the command line appears.

**5** Enter *SysTrain* to return to system training.

**6** Press **GO**.

Frame 1 of the Instructor program should appear on the screen of your monitor.

## Lesson 1: Initializing Standard Volumes

### Exercise on IVOLUME

Perform the IVOLUME exercise in Instruction Block 5 of Instructor by entering the command fields as shown in Figure 5-2.

Figure 5-2 Completed IVOLUME Form (Example)

```
Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 9:14 AM
-----

Command ivolume
Ivolum e
Device name                                     /D
[Device password]                               Contracts
Volume name
[Volume password]
[System Image (default = 0)]
[Log file (default = 0)]
[Crash file (default = 0)]
[Max. directories]
[Max. files on volume]
[Primary file headers only?]
[Max. files in Sys Directory]
[Sys Directory password]
[Write protect Sys Directory?]
[Suppress format of medium?]
[Surface tests]
[Debug?]
[Log file]
[Extended floppy tracks?]
[Single-sided mini floppy?]
[Hard disk type code (default = A)]
```

When entering that information, you must type the command field information with the capitalization shown in the example or in lowercase letters only.

After you enter the last field of IVOLUME correctly, Instructor simulates the initialization of a diskette. The displays that appear on the monitor during initialization are shown in Figure 5-3.

## Using Your Workstation

You can enter the IVOLUME command fields shown in Figure 5-2 on the BTOS command line to initialize a floppy disk for use on your workstation.

*Note: If you have a standalone dual-floppy workstation, insert BTOS software disk 2 in your left-hand floppy disk drive [f0] before inserting your blank floppy disk in the right-hand drive [f1].*

On your workstation you should be aware that:

- Standalone dual-floppy workstation operators must enter **f1** in the Device name field.
- All other operators can enter **f0** or **f1**, depending upon the drive ([f0] or [f1]) in which they have the blank floppy mounted.

## Labeling Initialized Diskettes

You should label initialized diskettes. An initialized diskette is normally labeled with the name of the volume, the program you used to initialize (IVOLUME) it, and the date the work was done.

### Figure 5-3 Ivolume Display Messages

```
Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 9:17 am
-----

Initialize Volume 7.0

Please insert diskette to be initialized.
(Press GO to confirm, CANCEL to deny, or FINISH to return to
the Executive)

Maximum number of directories on volume: 15
Maximum number of files on volume: 63 to 95
Maximum number of files on directory SYS: 42

Initializing the disk on f0 ... all data on the disk is
lost!

Formatting Disk ... done.
Surface test - Pass: 1
Writing volume structures on disk.

Disk contains 0 bad sectors.

Volume initialization complete.

Initialize another volume?
(Press GO to confirm, CANCEL to deny, or FINISH to return
to Executive)
```

## Lesson 2: Initializing Archive Volumes

### Exercise on IVARCHIVE

You perform the IVARCHIVE command by entering the name of the command only. The BTOS Executive supplies all the command fields shown Figure 5-4.

*Note: If you have a standalone dual-floppy workstation, you would use the FLOPPY COPY command, discussed later, to make copies of your program and data disks. However, all operators need to be familiar with the process of archiving disks and should perform the Instructor section on IVARCHIVE.*

### Using Your Workstation

You should enter *ivarchive* and observe that the command fields are displayed as shown in Figure 5-4. Respond to the prompts as directed.

### Restrictions

You need a hard-disk (Winchester) workstation to perform the IVARCHIVE exercises. The command and software are not available on dual-floppy standalone systems.

## Labeling Archive Diskettes

You should label initialized archive diskettes. An initialized diskette should be labeled with the name of the volume, the program used (IVARCHIVE), and the date the work was done.

Figure 5-4 Completed IVOLUME Form for IVARCHIVE (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986  9:47 AM
-----
Command      ivarchive
Ivarchive
  Ivolume
    Device name                                f0
    [Device password]                          ##
    Volume name                                Archive
    [Volume password]
    [System Image (default = 0)]                0
    [Log file (default = 0)]
    [Crash file (default = 0)]
    [Max. directories]                          2
    [Max. files on volume]
    [Primary file headers only?]
    [Max. files in Sys Directory]              9
    [Sys Directory password]
    [Write protect Sys Directory?]
    [Suppress format of medium?]
    [Surface tests]
    [Debug?]
    [Log file]
    [Extended floppy tracks?]
    [Single-sided mini floppy?]
    [Bad spots (See Documentation)]

```

## Lesson 3: Creating Directories

### Exercise on CREATE DIRECTORY

You perform the CREATE DIRECTORY exercises in block 5 of Instructor by typing in the command fields as shown in Figures 5-5 through 5-8.

When entering that information, you must type command-field information as with the capitalization shown in the examples or in lowercase letters only.

### Using Your Workstation

You need to insert the floppy disk initialized as the [Contracts] diskette in your floppy disk drive.

*Note: If you have a standalone dual-floppy workstation, insert any of the BTOS system software disks into your left-hand disk drive [f0] before inserting your Contracts floppy disk in drive [f1].*

You should complete the CREATE DIRECTORY command as shown in Figures 5-5 through 5-8, with the following restrictions:

- If you have a standalone dual-floppy workstation you must enter **Contracts** or **f1** in the [Volume] field.
- Otherwise, you can enter either **f0** or **f1** (as well as **Contracts**), depending upon the drive in which the floppy is inserted.

Figure 5-5 **Completed CREATE DIRECTORY Form (Example)**

```
Command  create directory
Create Directory
New directory name                [Contracts]-<Pending>
[Protection level (default 15)]
[Maximum number of files (default 45)]
[Password for new directory]
[Volume password]
```

## Changing Your Path

The best way to create several more directories on any disk volume is to change your path to that volume. For these exercises you should enter the information in the sample PATH command form (Figure 5-6).

Figure 5-6 **Completed PATH Form (Example)**

```

Command  path
Path
  [Volume]                               Contracts
  [Directory]                             Pending
  [Default file prefix]
  [Password]
  [Node]

```

Figure 5-7 **Completed CREATE DIRECTORY Form (Example)**

```

Command  create directory
Create Directory
  New directory name                       Active
  [Protection level (default 15)]
  [Maximum number of files (default 45)]
  [Password for new directory]
  [Volume password]

```

Figure 5-8 **Completed CREATE DIRECTORY Form (Example)**

```

Command  create directory
Create Directory
  New directory name                       Closed
  [Protection level (default 15)]
  [Maximum number of files (default 45)]
  [Password for new directory]
  [Volume password]

```

## Lesson 4: Creating Files

### Exercises on CREATE FILE

You should perform the CREATE FILES exercises in Instruction Block 5 of Instructor by typing in the command fields as shown in Figures 5-9 and 5-10.

When entering command-field data, you must type it:

- With the capitalization shown in the command example, or
- In all lowercase letters.

### Using Your Workstation

You need to insert the floppy disk initialized as the [Contracts] diskette in your floppy disk drive. You should make sure that your Path is set to [Contracts]<Pending.>

*Note: If you have a standalone dual-floppy workstation, you can insert any of the BTOS system software disks into your left-hand disk drive before inserting your Contracts floppy disk in drive [f1].*

You should complete the CREATE FILE command exercises as shown in Figures 5-9 and 5-10.

Figure 5-9 **Completed CREATE FILE Form (Example)**

```
Command create file
Create File
  File name RST.Corp
  [Volume or Directory password]
  [File password]
  [File protection level (default = 15)]
  [Size in sectors (default = 0)]
  [Overwrite OK?]
```

Figure 5-10 **Completed CREATE FILE Form (Example)**

```
Command create file
Create File
  File name Active>Sales.leads
  [Volume or Directory password]
  [File password]
  [File protection level (default = 15)]
  [Size in sectors (default = 0)]
  [Overwrite OK?]
```





## Lesson 1: Listing Directories and Files

When you need to confirm what directories and files that are contained on a particular disk volume, you use the commands taught in this lesson. For a listing of the contents of any disk volume you would use **VOLUME STATUS**. For a listing of the files in a directory you would use **FILES**.

### Listing the Contents of Volumes

You can perform the **VOLUME STATUS** exercises in Block 6 of Instructor by entering the commands and fields italicized in Figures 6-1 and 6-2.

Figure 6-1 **Completed VOLUME STATUS Form (Example)**

```
Executive 7.0
Path: [Sys]<Sys>          Fri Dec 12, 1986 10:14 AM
-----
Command volume status
Volume Status
  [Volume or Device name]           Contracts
  [Details?]
  [Print File]
  [Directory spec (default = *0)]
  [Include temporary directories?]
```

### Exercise on VOLUME STATUS

When entering that information, you must type the parameters in lowercase letters only or with the capitalization shown in the example. On the BTOS command line, you can leave the [Volume or device name] field blank. Instructor, however, requires that you enter the field as shown.

### Using Your Workstation

You can enter the VOLUME STATUS command fields shown in Figures 6-1 and 6-2 on the BTOS command line to get a display of the current directories and available space on the disk.

**Note:** *If you have a standalone dual-floppy workstation, insert BTOS software disk 2 into your left-hand disk drive [f0] before inserting the Contracts floppy disk in drive [f1].*

You can complete the VOLUME STATUS command as shown in Figure 6-1, after you:

- Insert the Contracts diskette in the appropriate floppy disk drive before performing the exercise.
- Enter *Contracts* in the Device name field. If you have a standalone dual-floppy workstation, you must enter *f1* for information about the Contracts diskette.

Figure 6-2 Completed VOLUME STATUS Form (Example)

```

Executive 7.0
Path: [Sys]<Sys>          Fri Dec 12, 1986  10:15 AM
-----
Command  volume status
Volume Status
  [Volume or Device name]           Sys
  [Details?]
  [Print File]
  [Directory spec (default = *0)]
  [Include temporary directories?]

```

## Listing the Names of Files

### Exercises on FILES and LIST

You can perform the FILES exercise in Instruction Block 6 of Instructor by entering the command field(s) displayed in Figures 6-3 and 6-4.

You can use the FILES command to list the file names of a specified directory or all directories. By default, the [File list] is the volume and directory of the current path.

### Using Your Workstation

On the BTOS command line, you can enter the command fields italicized in Figures 6-3 and 6-4 to list the files of the Contracts diskette.

**Note:** *If you have a standalone dual-floppy workstation, insert any of the BTOS system software disks into your left-hand disk drive [f0] before inserting a specified floppy disk in drive [f1].*

Figure 6-3 Completed Form for FILES (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 10:24 AM
-----
Command  Files
Files    [File list]                            /Contracts<Active>
         [Details]
         [Print File]

```

Figure 6-4 Completed Command Form for LIST (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 10:25 AM
-----
Command  list
List     [File list]                            /f0<*>*

```

On your workstation, you can complete the FILES command as shown in Figure 6-3, after the following preparations:

- Insert the Contracts diskette in the appropriate floppy disk drive before performing the exercise.
- Standalone dual-floppy workstation operators must enter *f1* in the Device name field.

On your workstation, you can complete the FILES command as shown in Figure 6-4, after the following preparations:

- Insert the Instructor disk 2 (B200T7-2) in the right-hand floppy disk drive [*f1*] before performing the exercise.
- Standalone dual-floppy workstation LIST operators must enter *f1* in the Device name field.

## Lesson 2: Viewing the Contents of a File

### Exercise on TYPE

You can perform the TYPE exercises in Block 6 of Instructor by entering the command fields as shown in Figure 6-5.

When entering that information, you must type the command field information in lowercase letters only or with the capitalization shown in the command sample.

### Using Your Workstation

You need to confirm that Instructor disk 2 (B200T7-2) is inserted in your floppy disk drive. Use VOLUME STATUS.

*Note: If you have a standalone dual-floppy workstation, insert any of the BTOS system software disks into your left-hand disk drive [f0] before inserting the requested floppy disk in drive [f1].*

Figure 6-5 Completed TYPE Form (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 10:28 AM
-----
Command Type
Type
File list                                     [f0]<OTSamples>printB
[Confirm each?]

```

---

Then you should complete the TYPE command as shown in Figure 6-6, with the following restrictions:

- Standalone dual-floppy workstation operators must enter *f1* in the [Device name] portion of the filename.
- All other operators can enter *f0* or *f1*, depending upon the drive in which they have inserted the B200T7-2 disk.

## Lesson 3: Copying Files and Volumes

You use the COPY command to duplicate a file or group of files in one volume or directory in another (on the same volume).

FLOPPY COPY is used to copy the whole volume: the volume name, the system directory, all directories, and all files.

### Exercise on COPY

You can perform the COPY and FLOPPY COPY exercises in Block 6 of Instructor by entering the command fields as shown in the sample command displays in this section.

When entering that information, you must type the command information for the fields in lowercase letters or with the capitalization shown in the examples.

If you have a hard-disk system, you must use the field information supplied in Figures 6-6 and 6-8.

If you have a dual-floppy standalone workstation, you must use the information in Figures 6-7 and 6-9.

Figure 6-6 **Command Form for COPY (Hard-Disk Example)**

```

Command Copy
Copy
File from                               [/f0]<OTSamples>print*
File to                                  [/Sys]<Sys>print*
[Overwrite OK?]
[Confirm each?]

```

Figure 6-7 **Command Form for COPY (Dual-Floppy Example)**

```

Command Copy
Copy
File from                               [f1]<OTSamples>print*
File to                                  [f0]<Sys>print*
[Overwrite OK?]
[Confirm each?]

```

## Using Your Workstation

You should confirm that Instructor disk 2 (B200T7-2) is inserted in the floppy disk drive zero [f0]. (VOLUME STATUS reports what floppy disk is inserted in [f0].)

You should complete the fields of the COPY command as shown in Figures 6-6 or 6-7, with the following restrictions:

- Insert the B200T7-2 diskette in the appropriate floppy disk drive before performing the exercise.
- Standalone dual-floppy workstation operators must enter *f1* in the Device name field.

## Copying a Diskette

### Exercise on FLOPPY COPY

You can perform the FLOPPY COPY exercises in Instruction Block 6 of Instructor by entering the fields displayed in Figures 6-8 and 6-9.

*Note:* To indicate a blank field in Instructor, you should press the **spacebar**, then the **RETURN** key. Pressing only the **RETURN** key is not the proper format.

There are no required entries for the hard-disk version of FLOPPY COPY. You should press the **spacebar** and the **RETURN** key to simulate the entry of a blank field. Optionally, you can enter a number in the [Number of copies] field for multiple copies of the disk.

If you have a standalone dual-floppy version, you must enter a *y* in the third field: [Dual floppy?].

For more about the options of this command, refer to your *BTOS Standard Software Operations Guide*.

## Using Your Workstation

If you have a dual-floppy workstation clustered to a hard-disk master, you must insert the master disk to be copied in the left-hand [f0] drive, remove it when prompted to do so, and insert a blank disk in drive zero [f0]. Do not attempt to use both [f0] and [f1] with FLOPPY COPY.

If your workstation is configured for standalone dual-floppy operation, you must first insert the B20SF6 system software disk in the left-hand drive [f0] in order to execute the command. When FLOPPY COPY executes, you are prompted to insert the master disk in drive [f0], the left-hand drive, and a blank disk in the right-hand drive [f1]. You should follow the prompts of the BTOS Executive.

Figure 6-8 FLOPPY COPY Form (Hard-Disk Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 10:43 AM
-----
Command Floppy Copy
Floppy Copy
[Number of copies]
[Overwrite OK?]
[Dual floppy?]
[Suppress verify?]
[Device name(s)]
[Device password(s)]

```

Figure 6-9 FLOPPY COPY Form (Dual-Floppy Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 10:43 AM
-----
Command Floppy Copy
Floppy Copy
[Number of copies]
[Overwrite OK?]
[Dual floppy?]
[Suppress verify?]
[Device name(s)]
[Device password(s)]

```

**Note:** If you have a standalone dual-floppy workstation, insert any of the BTOS system software disks into your left-hand disk drive [f0] before inserting Instructor disk 2 (B200T7-2) in drive [f1].

---

## Lesson 4: Changing Names and Deleting Files

### Exercises on RENAME and DELETE

You can perform the various exercises in Lesson 4 of this block of instruction by entering the command fields as shown in Figure 6-10 through 6-12.

You must enter that information in lowercase letters only or with the capitalization shown in the examples.

After Rename has been performed, the file called RST.Corp will be located in the <Active> directory, instead of the <Pending> directory. Rename, in effect, moves the file to another directory.

After Change Volume Name is performed, the floppy disk volume called [Contracts] has been renamed as [1986]. The volume no longer exists as Contracts.

After Delete has been performed, the file called RST.Corp no longer exists. It has been:

- Relocated on the Contracts diskette from the Pending to the Active directories
- Had its name changed to [1986]<Active>RST.Corp when the volume name changed to 1986
- Deleted as [1986]<Active>RST.Corp.

Figure 6-10 Completed RENAME Form (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986  11:07 AM
-----
Command      rename
Rename
  Old file name           [/0]<Pending>RST.Corp
  New file name           [/0]<Active>RST.Corp
  [Overwrite O.K.?]
  [Confirm each?]

```

Figure 6-11 Completed CHANGE VOLUME NAME Form (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986  11:08 AM
-----
Command      change volume name
Change Volume Name
  Device name              /0
  [Device password]
  [Old volume password]
  New volume name         1986
  [New volume password]

```

Figure 6-12 Command Form for DELETE (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986  11:09 AM
-----
Command      delete
Delete
  File list                [/1986]<Active>RST.Corp
  [Confirm each]

```

## Using Your Workstation

You must insert the Contracts diskette in your floppy disk drive to perform the exercises in this section.

**Note:** *If you have a standalone dual-floppy workstation, you must insert any of the system software disks into your left disk drive before inserting your Contracts floppy disk in drive f1.*

You should complete the Rename command as illustrated in Figure 6-10, with the following restrictions:

- Standalone dual-floppy workstation operators must enter *f1* in the [volname] portion of the filename.
- All other operators can enter *f0* or *f1*, depending upon the drive in which they have inserted the Contracts floppy diskette.

You should complete the Change Volume Name command as shown in Figure 6-11, with the following restrictions:

- Standalone dual-floppy workstation operators must enter *f1* in the Device name field.
- All other operators can enter *f0* or *f1*, depending upon the drive in which they have inserted the [Contracts] floppy diskette.

After this procedure is completed, the Contracts volume will be named: 1986.

You should complete the Delete command as illustrated in Figure 6-12, with the following restrictions:

- Standalone dual-floppy workstation operators must enter *[f1]* or *[1986]* in the [volname] portion of the filename entered in the File list field.
- All other operators can enter *[f0]*, *[f1]*, or *[1986]*, depending upon the drive in which they have inserted the [1986] floppy diskette.



## Printing Files

### Overview

Block 7 discusses how to print out information stored on disk, either floppy or hard disk. You can apply the print-command skills learned in this section to all commands that allow printing as an option.

For example, in the FILES command, you can print disk-file information, as well as having it display on the screen, by entering the appropriate printer device name in the print-option field.

Instructor teaches you to use both direct and spooled printing. You choose the appropriate method, depending upon your hardware, to print out prepared samples available on the Disk 2 (B200T7-2) of Instructor.

Terms used in this section are defined, with illustrations and samples, in Block 4 of Instructor. You should allow approximately 45 minutes for this block of instruction.

There are three lessons in this block:

- Lesson 1: Spooler Status
- Lesson 2: Direct Printing
- Lesson 3: Spooled Printing

### Objectives of Instruction Block 7

After completing the exercises in this section, you can:

- Determine whether or not your workstation has spooled printing
- Locate the queue names that you must use for spooled printing
- Use direct printing commands
- Use spooled printing commands from a workstation where the print spooler is active

Figure 7-1 SPOOLER STATUS Main Display (Example)

```
Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 2:11 PM
```

---

Printer Name	Queue Name	Status
Parallel	Spl	Idle
Serial	SplB	Idle

---

```
Commands      <To invoke a command, enter the character
                shown.  To exit the program, press FINISH.>

N - New Printer      Q - Select Queue S - Select Printer
```

---

## Lesson 1: Spooler Status

### Exercise on SPOOLER STATUS

Instructor teaches you how to use the BTOS spooler in Lesson 1 of Block 7, after a brief introduction to the SPOOLER STATUS command. You should press the **spacebar** until the spooler's status display shown in Figure 7-1 appears.

You can see the following information about printers:

Printer Name	Each printer is given a name. The default names for the two types of printers used on workstations are: <b>parallel</b> and <b>serial</b> .								
Queue Name	Each type of printer has a print queue associated with it. The default names of queues for the two types of printers are: <b>Spl</b> and <b>SplB</b> .								
Status	The current status of each printer can be: <table><tr><td>Printing</td><td>Printer is active</td></tr><tr><td>Idle</td><td>Print queue is empty</td></tr><tr><td>Offline</td><td>Printer is not ready</td></tr><tr><td>Paused</td><td>Printer has been stopped during printing (HALT)</td></tr></table>	Printing	Printer is active	Idle	Print queue is empty	Offline	Printer is not ready	Paused	Printer has been stopped during printing (HALT)
Printing	Printer is active								
Idle	Print queue is empty								
Offline	Printer is not ready								
Paused	Printer has been stopped during printing (HALT)								

## Using Your Workstation

On the BTOS command line, you would enter the SPOOLER STATUS command to receive information about the progress of any print requests and the availability of the printer(s). SPOOLER STATUS does not require any parameters.

***Note:** If you have a standalone dual-floppy workstation, you do not have spooled printing (or SPOOLER STATUS) available to you. You do have direct printing available, however. Refer to the next lesson, Direct Printing, for procedures used on your workstation.*

When you enter the SPOOLER STATUS command, you see the main status display, as presented in Figure 7-1.

***Note:** If either the printer or queue names vary from those displayed in Figure 7-1, you must write them down for entry in the appropriate command fields for both the direct- and spooled-printing exercises.*

## Lesson 2: Direct Printing

### Exercise on FORMAT

You can perform the FORMAT command exercise in Lesson 2 of the instruction block by entering the command fields italicized in Figure 7-2. The exercise assumes you have a hard-disk (or cluster) workstation and are attached to a parallel-type printer. Entries are based upon that hardware configuration.

When entering that information, you must type the command field information in lowercase letters only or with the capitalization shown in the sample.

Figure 7-2 **Completed Command Form for Format (Example)**

```
Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986   1:34 PM
-----
Command Format
Format
  File list                                     [f]<OTSamples>PrintB
  Print to                                       [Lp]
  [Confirm each?]
  [First page to format]
  [Last page to format]
  .
  .
  [Suppress page ejects between files]
```

## Using Your Workstation

You can enter the FORMAT parameters shown in Figure 7-2 on any hard-disk workstation attached (or clustered) to a parallel printer. The printer must be ready to print. If your printer and workstation disk are different than those described, you must look up your entries in the FORMAT command fields in Table 7-1.

***Note:** If you have a standalone dual-floppy workstation, insert a system software disk in your left [f0] disk drive. (System software disks 1, 2, 3, and 4 all contain direct printing capabilities.)*

You must choose one of the three combinations of the File-list and Print-to command fields shown in Table 7-1. These options are based upon the possible combinations of: hard disk or standalone dual-floppy disk, parallel or serial printer, and with or without an active spooler.

## Printing: With and Without a Spooler

Before you can successfully complete the Format command as shown in Figure 7-2, you must:

- Insert Operator Training Disk 2 (B200T7-2) in the appropriate floppy disk drive ([f0] for hard-disk types and [f1] for standalone dual-floppy types).
- Determine what type of printer you have from Table 7-2. If your printer is not listed, you must refer to the manual packed with your printer.
- Find out whether a spooler is active in your cluster or on your workstation. SPOOLER STATUS will show you what printers are available and list them by type.

Table 7-1 **FORMAT Entries: by Type**

<b>Disk Types Printer Types</b>	<b>Command Fields</b>	<b>Command Field Entries</b>
Standalone Floppy Disk with parallel printer with serial printer	File List	[f1]<OTSamples>printB
	File to	[Lpt]
	File to	[Ptr]
Hard Disk (No Spooler) with parallel printer with serial printer	File list	[f0]<OTSamples>printB
	File to	[Lpt]
	File to	[Ptr]
Hard Disk (with Spooler) with parallel printer with serial printer	File list	[f0]<OTSamples>printB
	File to	[Spl]
	File to	[SplB]

Table 7-2 **Printer Default Names**

<b>Printer</b>	<b>Type</b>	<b>Device Name</b>	<b>Queue Name</b>
B 9251-1	Parallel	[Lpt]	[Spl]
B 9252	Parallel	[Lpt]	[Spl]
AP 1302	Serial	[PtrB]	[SplB]
AP 1305	Serial	[PtrB]	[SplB]
AP 1320	Serial	[PtrB]	[SplB]
AP 1350	Serial	[PtrB]	[SplB]

## Lesson 3: Spooled Printing

### Exercise on PRINT

Instructor simulates the PRINT command in Lesson 3 of Instruction Block 7. You must use the following steps when Figure 7-3 appears on the screen:

1 Enter *S* to choose the Select Printer option.

2 Press **RETURN**.

The Select Printer form, shown in Figure 7-4, appears on the screen.

3 Enter *parallel* or *serial* to identify the printer you want.

4 Press **RETURN**.

The Queue Display form, shown in Figure 7-5, appears on the screen.

Figure 7-3 Spooler Status Main Display (Example)

```

Spooler 6.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 2:17 PM
-----
Printer Name      Queue Name      Status
Parallel          Spl             Idle
Serial            SplB           Idle
-----
Commands          <To invoke a command, enter the character
                  shown. To exit the program, press FINISH.>
N - New Printer   Q - Select Queue S - Select Printer
  
```

Figure 7-4 Spooler Status Printer Selection (Example)

```

Spooler 6.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 2:18 PM
-----
Select Printer
Printer Name      parallel
  
```

**5** Enter *P* to select the Print file option.

**6** Press **RETURN**.

The PRINT form, shown in Figure 7-6, appears on the screen.

**7** Execute the PRINT file command by entering the command fields italicized in Figure 7-6.

### **Using Your Workstation**

You can enter the PRINT command fields shown in Figures 7-3 through 7-6 on the BTOS command line to print out the OTSample files on Disk 2 (B200T7-2).

You can perform the Print procedures used in Instructor on any workstation that contains (or is clustered to a master workstation with) an active spooler.

***Note:** If you have a standalone dual-floppy workstation, spooled printing is not available.*

Figure 7-5 Parallel Queue Command Form (Example)

```

Spooler 6.0
Path: [Sys]<sys>                               Fri Dec 12, 1986  2:20 PM
-----
Printer:           Parallel
Status:            Idle
Printer Description: Parallel, Standard print wheel, Standard forms
Configuration File: [Sys]<Sys>SPLConfig.Sys
Location:          Local at Master workstation

Queue:             SPL
Served by:         Parallel

Files Queued                               Priority
-----
Commands:      <To invoke a command, enter the character shown.
                To exit the program, press FINISH.>

A - Align form      F - Free printer      N - New printer
C - cancel print    channel                P - Print file
D - Delete print    H - Halt printer      Q - Select queue
request            M - Main status      R - Restart printer
E - Enter password display            S - Select printer

```

Figure 7-6 Completed Spooler Print File Form (Example)

```

Print
File list                               [/0]<OTSamples>Print*
[Number of copies]
[Delete after printing?]
[Special forms name]
[Printwheel name]
[Printing mode]
[Align form?]
[After date time]
[Security mode?]
[Priority]
[Confirm each?]

```

## Printing Exercise

The exercise on Spooler Subcommands in this section cannot be performed unless a spooler is active on your workstation or in your cluster.

Depending upon your type of workstation, you select either PRINT or FORMAT to start printing out the files in the <OTSamples> directory on the B200T7-2 disk.

Each spooler subcommand is defined in Table 7-3.

### From a Master Workstation

When the PRINT exercise in Lesson 3 has been executed, you can enter the commands in the exercise on Spooler subcommands in this section.

### From a Cluster Workstation

After the FORMAT command shown in Figure 7-7 has been executed, you can enter *spooler status*, select either a printer name (**parallel** or **serial**) or queue name (**spl** or **splB**), and enter the Spooler subcommands shown in the Exercise on Spooler Subcommands.

Figure 7-7 Completed Command Form for FORMAT (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986   1:34   PM
-----
Command  Format
Format
File list                                     [[0]<OTSamples>*
Print to                                     [spl]
[Confirm each?]
[First page to format]
[Last page to format]
.
[Suppress page ejects between files]

```

## Exercise on Spooler Subcommands

	<b>Action</b>	<b>Result</b>
1	Type: <i>H</i>	Printing stops. The status of the printer displays as <b>Paused</b> .
2	Press <b>GO</b>	
3	Type: <i>R</i>	Printing resumes.
4	Press <b>GO</b>	
5	Type: <i>C</i>	The printer stops printing the current file and begins printing the next file in the queue.
6	Press <b>GO</b>	
7	Type: <i>H</i>	Printing stops. You must first stop the printer to delete a file from the print queue.
8	Type: <i>D</i>	The Delete Print Request form appears (shown in Figure 7-5).
9	Type: <i>{(Q)}&lt;otsamples&gt;printD</i>	This removes the file printD from the the print queue. The <b>SPOOLER</b> command form, similar to Figure 7-4, appears.
10	Press <b>GO</b>	
11	Type: <i>R</i>	The remaining files print.
12	Press <b>GO</b>	
13	Press <b>FINISH</b>	The BTOS command line appears.

Table 7-3 Spooler Subcommands

Command	Abbreviation and Use
Align Form	<b>A:</b> causes only the first page of a document to be printed to allow the paper to be aligned. You use restart (see below) to print the document.
Cancel Print	<b>C:</b> stops a printout in progress and deletes the file from the list of files scheduled for printing. For queued files you use Delete (see below).
Delete Print Request	<b>D:</b> removes a file scheduled for printing but not yet actively printing. After the printout has started, use Cancel (see above).
Enter Password	<b>E:</b> allows a password-protected file to be printed (if the correct password is supplied).
Free Printer	<b>F:</b> removes a printer from the control of an assigned print queue (for systems with more than one printer). You use New Printer (below) to assign the printer to another queue.
Halt Printer	<b>H:</b> stops printing in progress.
Main Status	<b>M:</b> displays the main Spooler Status menu.
New Printer	<b>N:</b> places a printer under a print queue's control (for systems with more than one printer).
Print Files	<b>P:</b> schedules files for printing (for master workstations only).
Select Queue	<b>Q:</b> displays a list of files in a print queue.

- Restart Printer    **R:** starts the printer after a halt command has stopped it.
- Select Printer    **S:** displays a printer's print queue.

## Archiving Files

### Overview

Block 8 covers the operator procedures you would use to back up and restore a hard (Winchester) disk with archived data files.

You should allow approximately 30 minutes to complete this block of instruction.

Archiving files consists of the following lessons:

- Lesson 1: Backing up Disks
- Lesson 2: Restoring Files

### Objectives of Instruction Block 8

When you complete this block of instruction, you can:

- Archive any hard disk
- Restore selected files

### Lesson 1: Backing up Disks

#### Exercise on SELECTIVE BACKUP

You can perform the SELECTIVE BACKUP exercise in Block 8 by entering the command fields as shown in Figure 8-1.

During the exercises you must type the command field information in lowercase letters only or with the capitalization shown in the sample.

Figure 8-1 Completed Selective Backup Form (Example)

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986   3:44 PM
-----
Command      selective backup
Selective Backup
File list
[Incremental from (e.g.,
  Mon Jun 1, 1981 8:00 pm)]
[Confirm each?]
[Archive file]
[Delete existing archive file?]
[Log file]

```

## Using Your Workstation

You can enter the SELECTIVE BACKUP command fields shown in Figure 8-1 to archive any hard disk on your system. By default, SELECTIVE BACKUP archives the disk shown as the [volume] of your current path.

*Note: If you have a standalone dual-floppy workstation, you would not use archive procedures on your type of workstation. You should perform the Instructor exercises to learn how to back up a hard disk, however.*

On your workstation, you can perform the SELECTIVE BACKUP command with the command entries shown in Figure 8-1 after inserting a diskette initialized with IVARCHIVE in floppy disk drive zero [f0].

## Lesson 2: Restoring Files

### Exercise on RESTORE

You can perform the RESTORE exercise in block 8 by entering the command fields shown in Figure 8-2.

During the exercise you need to type the field information in lowercase letters only or as shown in the command sample.

Figure 8-2 Completed RESTORE Form (Example)

```
Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986   4:03 PM
-----
Command  restore
Restore
  [Archive file]
  [File list]                                     <sys>printB
  [File list to]
  [Overwrite OK?]
  [Confirm each?]
  [Sequence number]
  [Merge with existing file]
  [List files only]
  [Log file]
```

## Using Your Workstation

You can use the RESTORE procedures performed in Instructor on any hard disk active on your workstation. By default, RESTORE loads file(s) to the disk shown as the volume of your current path.

***Note:** If you have a standalone dual-floppy workstation, these procedures are not appropriate for your type of workstation. You may perform the Instructor exercises to learn how to restore files to a hard disk, however.*

On your workstation, you can complete the RESTORE command as shown in Figure 8-2, after the following preparations:

- Insert a diskette created with SELECTIVE BACKUP in floppy disk drive zero.
- Enter *RESTORE* on the Executive command line. Enter the command fields as shown and perform any Executive prompts that appear on your workstation screen.

The following options apply to the RESTORE command:

- Leaving all fields blank loads all files on the archive diskette.
- [Archive file] can be specified as *[Archive]<Sys>.01* or left blank (assuming *[Archive]<Sys>.01*).
- [File list to] can be specified as *[Sys]<Sys>PrintB* or *<Sys>printB* (since your path is set to *[Sys]*).
- [File list to] could be any directory and filename if you wanted to load the file to another directory under another name.
- [Overwrite OK?] could contain *y* or *yes* if you do not want RESTORE to ask you if it is OK to overwrite an existing *[Sys]<Sys>printB* file.

---

## Run-Time Features

### Overview of Advanced Operations

Advanced operations training covers the procedures and commands you use to streamline everyday activities on your workstation. You execute CAI for instruction blocks nine through twelve with the ADVTRAIN command.

Instructor responds to every line you enter and suggests how to correct your parameter, if you enter it incorrectly.

Exercises display valid BTOS commands. If you exit from Instructor, you can type in the commands and their parameters, italicized in each figure, in a system (as opposed to practice) environment.

### Conventions Used in Advanced-Training Exercises

Exercises in blocks nine through twelve will have fewer directions and present only the essential keystrokes necessary to complete the exercise. The command or field entry is shown in italics and followed by the control key (**RETURN** or **GO**) you would use to complete the entry.

### Entering Parameters

The BTOS Executive allows you to abbreviate commands and type them in either uppercase or lowercase letters. Instructor, however, is not that flexible.

You should make all entries either in lowercase letters or exactly as shown (the same capitalization) in this guide. When you exit to the BTOS Executive, you may use whatever abbreviations and capitalization the Executive will accept.

When you enter a command field, you usually press the RETURN or the GO key following your entry. In blocks nine through twelve, the key that follows an entry is indicated in parentheses (**RETURN**, **GO**, **FINISH**, and so on).

## Disk Configurations

Exercises in blocks nine through twelve presume you are using, or are clustered to, a workstation with a hard disk. The command parameters shown, then, apply to all configurations except standalone dual-floppy workstations.

Operators using standalone dual-floppy workstations should perform the Instructor exercises as described in the training guide but must *always* modify their inputs to the standalone dual-floppy Executive as follows:

[Sys] = [f0] and is the system (left-hand) drive

[f0] = [f1] and is the work area (right-hand) drive

## Overview

You should allow approximately one hour to complete this block of instruction.

Instruction Block 9 consists of the following lessons:

- Lesson 1: User Files
- Lesson 2: Record and Submit Files
- Lesson 3: Creating New Commands
- Lesson 4: Parameter Lists

## Objectives of Instruction Block 9

When you complete these lessons, you will be able to:

- Modify .user files
- Use the RECORD and SUBMIT commands
- Enter a new command into the command file
- Understand the function of parameter lists

## Lesson 1: User Files

### Elements of .User Files

Lesson 1 describes the entries in user files, identifying required entries first and then discussing the optional elements of this feature.

User files must contain the following identifiers:

- ExecCmdFile
- SignOnVolume
- SignOnDirectory
- SignOnExitFile

Optional identifiers are:

- SignOnPassword
- SignOnChainFile

### Displaying User Files

On the BTOS command line, you can enter the command fields italicized in Figure 9-1 to display all of the user files on your workstation. If there are no user files on your system except the user file loaded with your operating system, you can refer to Chain File Options in instruction block 9 for examples.

Figure 9-1 **Completed Type Form (Sample)**

```
Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 10:28 am

Command type
Type
  File list                                     [Sys]<Sys>*user
  [Confirm each?]
```

## Lesson 2: Record and Submit Files

A series of screens introduce the Record and Submit functions, pointing out how the two are used together.

You use the Record function through RECORD and STOP RECORD by entering:

- 1 RECORD with a name in the filename field
- 2 One or more BTOS commands with the appropriate parameters
- 3 STOP RECORD.

Optionally, you can edit the file you have created or you can execute it with SUBMIT.

The Submit function is based upon Submit files which contain:

- Commands
- Simple parameters
- Conditional parameters

After a submit file is created, it is executed through the SUBMIT command.

## Exercise on RECORD and STOP RECORD

Exercise 2 familiarizes you with the Record function. With disk 2 (B200T7-2) mounted in floppy disk drive zero [f0] and your path set to [Sys]<Sys>, you enter *record* on *learn.sub* on the BTOS Command line.

Before you use the STOP RECORD command to terminate the recording function, you type on the Command line:

- 1 *Create Directory (RETURN)*
- 2 *Learning (GO)*
- 3 *Path (RETURN)*
- 4 *Sys (RETURN)*
- 5 *Learning (GO)*
- 6 *Copy (RETURN)*
- 7 *[f0]<OTSamples>\*(RETURN)*
- 8 *[d0]<Learning>\*(RETURN).*
- 9 *y (GO).*
- 10 *stop record (GO).*

## Exercise on SUBMIT

The Learn.sub file just created may be submitted with the SUBMIT command syntax shown in Figure 9-2.

Figure 9-2 **Completed Submit Form (Example)**

```
Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12 1986   1:38 pm

Command Submit
Submit
File list                                       learn.sub
[Parameters]
[Force expansion?]
[Show expansion?]
```

## Lesson 3: New Command

You add, delete, or modify a system command with **NEW COMMAND** or **COMMAND FILE EDITOR**. The command-file Editor gives you online editing of your command file in displays that are based upon the syntax of **NEW COMMAND**.

### Syntax of **NEW COMMAND**

To use **NEW COMMAND**, you must enter the following parameters:

Name Field  
Run file field

Optional fields associated with commands are:

[Field names]  
[Description]  
[Overwrite?]  
[Case]  
[Command file]

### Description of the **COMMAND FILE EDITOR**

*Note: **COMMAND FILE EDITOR** is available on Disk 1 of the **BTOS Dual-Floppy Standalone Operating System (B26SF7-1 or B27SF7-1)**.*

You access the functions of **COMMAND FILE EDITOR** through the function keys. Key assignments for this system utility are shown in Table 9-1.

Table 9-1 **Command File Editor Function Key**

F1:	Edit	F4:	Insert	F8:	Input
F2:	Add	F5:	Delete	F9:	Output
F3:	Remove	F6:	Blank	F10:	Save
		F7:	Return		

You select functions in the Command File Editor through the function keys. Key assignments for this system utility are shown in Table 9-1.

The initial display generated by the Command File Editor is shown in Figure 9-3.

Figure 9-3 Command File Editor Display (Example)

```

Command File Editor 7.0.0
-----Command File: [Sys]<Sys>Sys.Cmds
Command name  Learn
Copy from command

-----

Append
Assemble
Backup Volume
Change Volume Name
Command File Editor
Copy
Create Configuration File
Create Directory
Create File
Delete
Edit
Files
Floppy Copy
Format
Install Queue Manager
Install Spooler

Maintain File
Make Translation File
Merge
New Command
Path
Playback
Plog
Print
Record
Remove Command
Remove Directory
Rename
Replay
Restore
Screen Setup
Volume Status

-----

EDIT  ADD  REMOVE  INSERT  DELETE  SAVE

```

## Using Your Workstation

In Exercise 3, you use the Command File Editor to add a new command called LEARN to the system. After executing the Command File Editor, you must enter the parameters italicized in the example, Figure 9-4, Sample Command File Editor Add Display (Completed).

**Note:** The LEARN command is based upon a submit file called "learn.sub". You must RECORD that file as shown in exercise 2 or create it using the BTOS Editor (next instruction block). The command does not function if the learn.sub file is not present in the <Sys> directory.

The steps in Exercise 3 are:

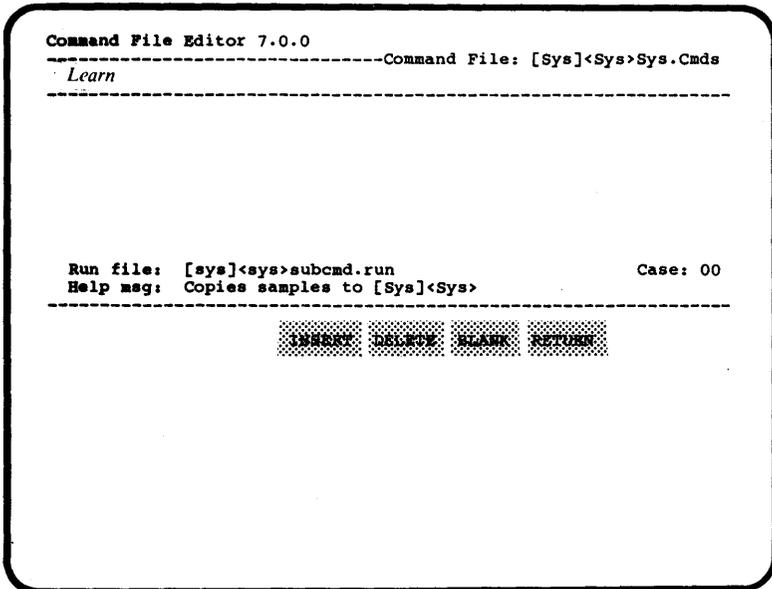
- 1 Enter *Command File Editor* on the command line (**GO**).
- 2 Press **F2** to select the Add function.
- 3 Enter *learn* when the Add form displays on the monitor.

You can use RETURN, NEXT, and the Arrow keys to move the cursor to the proper position in the display.

- 4 Complete the command fields as shown in Figure 9-4.
- 5 Press **FINISH** when the command fields have been entered.
- 6 Enter Y (**GO**) to save your new command.

You return to the BTOS command line. The command you have created will copy files from disk 2 (B200T7-2) to the <Learning> directory on your hard disk.

Figure 9-4 **Command File Editor Add Display (Completed)**



## Lesson 4: Parameter Files

### Identifying Parameter Files

You can use the BTOS Executive to substitute actual data for command parameters. The actual parameters reside in a data file identified at run-time with an at-sign (@).

A parameter file (also called "at-sign file") is created with a standard file name (For more on file names, you can refer to "Filenames" in Section 4 of this guide). It is referenced in a command parameter by preceding the name with an at-sign.

### Using the Workstation

You can exit to the Executive and TYPE the file <Trainadv>P to see the list of actual filenames that are substituted when the parameter name @P is entered in the [File list] field of the FILES command. You should enter the TYPE command as shown in Figure 9-5.

Figure 9-5 Completed Form (Example)

```
Executive 7.0
Path: [Sys]<Trainadv>                               Fri Dec 12, 1986  2:18
p#

Command  type
Type
File list                                     <trainadv>p
[Confirm each?]
```

To see how parameter-file file substitution works, you should enter the FILES command on the BTOS command line as shown in Figure 9-6.

Figure 9-6 Completed Files Form (Example)

```
Executive 7.0
Path: [Sys]<Trainadv>                               Fri Dec 12, 1986  2:19 pm

Command Files

Files
  [File list]           @p
  [Details]             y
```

## Using the Editor

### Overview

Block 10 explains how to use the BTOS Editor program. When you know how to begin a work session, you can load the files in the <OT Samples> Directory on disk 2 (B200T7-2) for some practical exercises with the Editor.

Lessons three and four use the Editor to create user and submit files (discussed in block 9).

You should allow approximately one hour to complete this block of instruction.

Instruction Block 10 contains the following lessons:

- Lesson 1: Running the Editor
- Lesson 2: Samples for Editing
- Lesson 3: Modifying User Files
- Lesson 4: Creating Submit Files

### Objectives of Instruction Block 10

When you complete these lessons, you will be able to:

- Load text files into the Editor
- Use its editing functions
- Modify a .user file
- Create and modify Submit files

## Lesson 1: Running the Editor

### Commands and Functions

The Editor program that is part of the standard BTOS software is simple to use, for anyone with word-processing experience.

Even those who have no word-processing experience can use the Editor. Editor commands are either codeword commands (**CODE** key plus a letter or number) or keyboard functions (as embossed on the keycap). To see what Editor commands are available, you press the **HELP** key after executing the BTOS Editor.

For more information on this program, you should refer to the *BTOS Editor Operations Guide*.

Instructor teaches you how to:

- Start and end an editing session
- Move the cursor
- Delete strings and lines
- Move and copy text

### Using Your Workstation

In block 10 you can perform exercises designed to familiarize you with the workstation's Editor program. Disk 2 (B200T7-2) contains files in the OTSamples directory that describe the workstation's hardware and software. These files contain information on workstations as well as providing the basis for certain Editor exercises.

In lessons three and four you will edit samples of the submit and user files discussed in blocks 9. You must use the Editor to create the samples presented in the exercises of blocks 11 and 12.

## Lesson 2: Sample Editing Session

### Notes on the Editor

The sample work session in this lesson presumes you want to know how to:

- Cancel an edit
- Bail out (discard all edits)
- Move the cursor in large increments (jumps)
- Mark text to delete, copy, or move it

### Exercises on EDIT

Exercise 4 uses three files on Disk 2 (B200T7-2) that can be loaded for viewing or printing. You can load a file into the Editor with EDIT command displayed in Figure 10-1. You can print the file with the entries in Figure 10-2.

When you have loaded [f0]<OTSamples>PrintB, the suggested editing activities in Exercise 4 are:

- **CODE** + f: searches for a character string of your choice. Press **f1** to continue. Enter a string such as 'application' or 'work' or 'manage' to search through the <OTSamples>printB file for that word.
- **CODE** + j: jumps to a new position in the file relative to its total length. Numbers 0 through 9 correspond to 00 to 99 percent of the current file.
- **CODE** + v shows all editing characters (returns, tab settings, and so on). A second **CODE** + v: toggles that function to off.

*Note: Hexadecimal values are presented with the notation (xxh) where xx is the hexadecimal string and h shows that it is hexadecimal. You can presume that all integer values shown, unless noted, are decimal.*

- **CODE** + i inserts a hexadecimal value. Insert GO (1Bh) at the end of a line. Erase it with a **BACKSPACE**.
- **MARK** and **BOUND**: marks a word or paragraph to be deleted (**CODE** + **DELETE**). Press **CANCEL** to undo your last edit.

*Note: You should set your path to [Sys]<Sys>; as displayed in Figure 10-1, before entering the EDIT command on the command line.*

Figure 10-1 **Completed Edit Form (Example)**

```

Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 10:14 am

Command Edit
Edit
Filename                                       [f0]<OTSamples>printB
[Your name]

```

*Note: The [Print to] field in Figure 10-2 expects a device name for a printer or the name of a print queue if the spooler is active on your system. The sample uses the queue name [spl] but the entry in that field will vary, depending upon the configuration of your workstation.*

For more information about printing, you should refer to Section 7 of this guide.

Figure 10-2 Completed Format Form (Sample)

```
Executive 7.0
Path: [Sys]<Sys>                               Fri Dec 12, 1986 10:43 am

Command Format
Format
File list                                       [f0]<OTSamples>printB
[Print to]                                     [sp1]
[Confirm each?]
.
.
.
[Suppress page ejects between files]
```

## Lesson 3: Modifying a User File

### Options in User Files

You can establish user files to sign yourself on to a specific volume and directory. Further, you can set up the user file to execute (chain to) a specified applications program.

In this lesson you use the Editor to modify a user file appropriate for training.

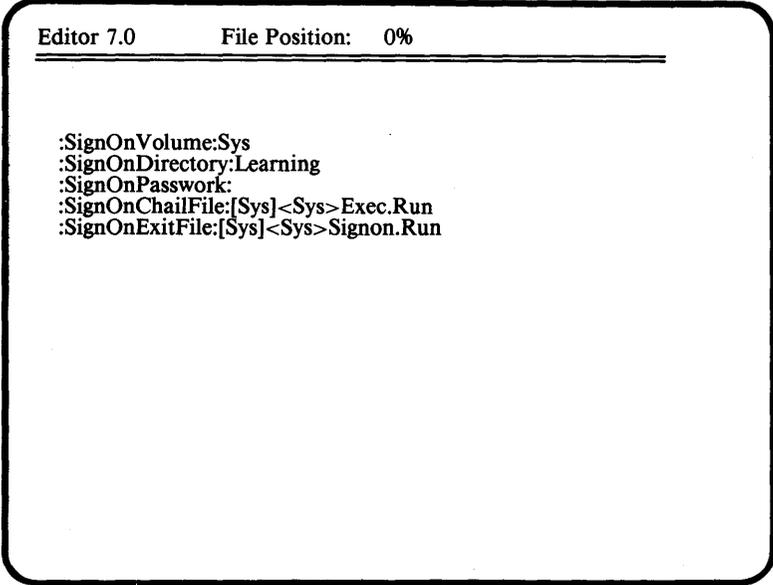
## Using Your Workstation

You can modify the standard .user file to reflect the signon pattern for a user called "Optrn". Someone signing on with the Optrn user code would be taking operator training on a workstation.

Creating and modifying the user file requires the following steps:

- 1 Copy the [Sys]<Sys>.user file to [Sys]<Sys>Optrn.user.
- 2 Make sure that your Path is set to [Sys]<Sys>.
- 3 Enter *edit* on the command line (**RETURN**).
- 4 Enter *optrn.user* into the Filename field (**GO**).
- 5 Edit the file so that the text of optrn.user matches the text of Figure 10-3.

Figure 10-3 User File (Example)



The image shows a screenshot of an editor window titled "Editor 7.0". The status bar at the top indicates "File Position: 0%". The main content area displays the following text:

```
:SignOnVolume:Sys  
:SignOnDirectory:Learning  
:SignOnPassword:  
:SignOnChailFile:[Sys]<Sys>Exec.Run  
:SignOnExitFile:[Sys]<Sys>Signon.Run
```

---

## Lesson 4: Editing a Submit File

### Creating a Submit File

The simplest way to set up a submit file is to create it with RECORD, then modify it with the Editor. You can also create a submit file using the Editor only.

### Using Your Workstation

In this exercise you create a submit file that you can edit. If you did Exercise 2 in block 9 on RECORD, you have already created the submit file to be edited in this exercise and can skip to Part 2.

### Editing the Learn.sub File

Editing the Learn.sub file requires Instructor disk 2. Before doing the steps in this exercise, you must insert Disk 2 (B200T7-2) in your floppy disk drive.

#### *Exercise 6, Part 1*

To record a submit file, you enter:

- 1 *Path* (RETURN)
- 2 *Sys* (RETURN)
- 3 *Sys* (GO)
- 4 *Record* (RETURN)
- 5 *Learn.sub* (GO)
- 6 *Create Directory* (RETURN)
- 7 *Learning* (GO)
- 8 *Path* (RETURN)
- 9 *Sys* (RETURN)
- 10 *Learning* (GO)
- 11 *Copy* (RETURN)
- 12 *[fO]<OTSamples>\** (RETURN)

13 *[dO]*<Learning>\* (RETURN)

14 *y* (GO)

15 *stop record* (GO)

#### *Exercise 6, Part 2*

You edit the Learn.sub file by removing:

- Unnecessary keystrokes
- The STOP RECORD command which is not needed in SUBMIT files

#### **Editing the Myeditor.sub File**

Exercise 7 demonstrates how keystrokes can be saved by combining commands into a submit file. The submit file you are about to create establishes a work path (volume and directory) before it executes the applications program of your choice (the Editor). You can use this technique with other applications program on your system.

#### *Exercise 7, Part 1*

In an Editor file called *myeditor.sub*, you enter the command and field displayed in Figure 10-4 to create a submit file that will become the basis of a new system command for your own use.

Steps in this procedure are:

1 Set your Path to [Sys]<Sys>.

You want the Myeditor.sub file to reside in the system directory. Setting your path to the <Sys> directory ensures that the file will be created there.

2 Enter EDIT on the command line (RETURN).

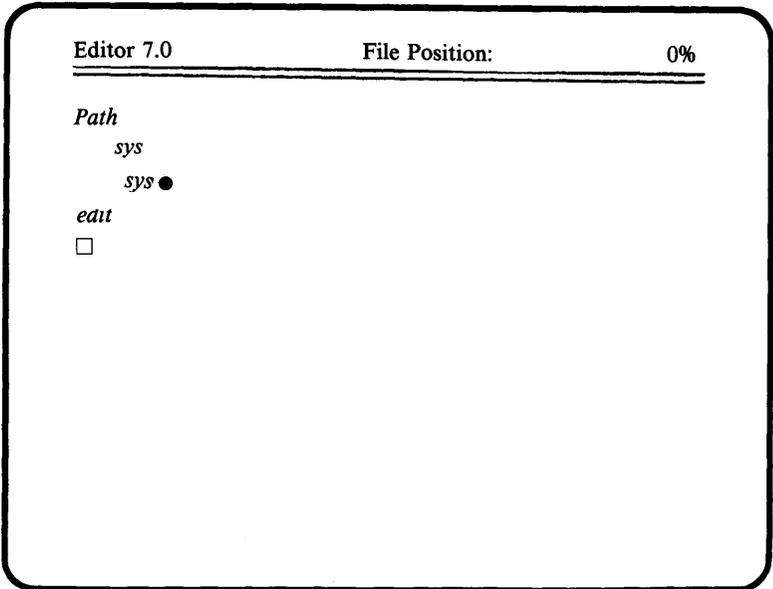
3 Enter *myeditor.sub* in the [Filename] field (GO).

4 Enter the italicized data in Figure 10-4.

5 Save *myeditor.sub* (FINISH).

**Note:** The GO character (1Bh) is printed in this guide as a bullet. Use the CODE+i command in the Editor to insert the hexadecimal value 1Bh.

Figure 10-4 Sample Editor File



### Exercise 7, Part 2

You now have three options in the use of this file:

- You execute it with SUBMIT (for testing or general use)
- You can create a command called Myeditor with NEW COMMAND (as shown in Figure 10-5)
- You can add a command called Myeditor to your command file with COMMAND FILE EDITOR

If you add Myeditor to your workstation's command file with NEW COMMAND, the parameters you need are italicized in Figure 10-5.

If you use the COMMAND FILE EDITOR command, you would enter the Run File, [Field names], and [Description] in the command editing area of the screen. For procedures on running the Command File Editor program, you should refer to block 9.

Figure 10-5 Completed New Command Form (Example)

Command	<i>New Command</i>
New Command	
Command Name	<i>Myeditor</i>
Run File	<i>[Sys]&lt;Sys&gt;SubCmd.Run</i>
[Field names]	
[Description]	<i>executes Editor in [Sys]&lt;Sys&gt;</i>

## Conditional Routines

### Overview

Block 11 covers the structure of commands, expansion of conditional parameters, and escape sequences. When you know how commands are structured and how to test and pass parameters, you can write conditional submit routines that allow actual parameters to be keyed in at run-time.

Block 11 consists of the following lessons:

- Lesson 1: Command Parameters
- Lesson 2: Escape Sequences
- Lesson 3: Conditional Parameters
- Lesson 4: Complex Submit Routines

### Objectives of Instruction Block 11

When you complete this block of instruction, you can understand:

- How commands are structured
- How parameters are passed

With that knowledge, you can write conditional submit routines that read run-time data from the keyboard.

### Lesson 1: Command Parameters

#### Definitions of Terms

You must understand three concepts to write conditional parameters for BTOS Submit files: numbering of parameters, expansion of Submit files, and escape sequences.

#### Submit File Processing

Lesson 1 defines each of these concepts and discusses how Submit files are processed by the operating system.

## Lesson 2: Escape Sequences

### Syntax and Terms

Lesson 2 defines the syntax and the types of escape sequences that are presented in the CAI.

### Three Types Presented

Instructor describes the types of escape sequences most often used in conditional submit files: character, keyboard, and parameter. You can enter and run samples of these escape sequences in lessons 3 and 4 of this instruction block.

## Lesson 3: Conditional Parameters

### Syntax and Terms

Conditional escape sequences consists of condition parts and replacement parameters. The various condition identifiers are listed and replacement parameters are defined.

### Conditional Submit Files

You can create submit files that test whether or not a parameter has been entered at run-time. The exercises shown in this section take you through the development and testing of such a submit file.

#### Exercise: Conditional Parameter

There are three parts to Exercise 8, Conditional Submit File.

##### *Exercise 8, Part 1*

You create a submit file with the name of your choice from the sample given in Figure 11-1.

Figure 11-1 Sample Conditional Submit File

```

%!After checking for a filename at runtime, this
%!routine puts the user in the [Sys]<Sys> directory for
%!Edit. The syntax of Edit is:
%!   Edit
%!       Filename
%!       [Your name]
%#0;Filename is required. Please re-do with filename;
%?0;Path
      sys
      sys● edit
          %0;●

```

*Exercise 8, Part 2*

You use the SUBMIT command to test that the file runs properly. During testing, the Submit process should not continue (executing the Editor) when it finds that you forgot to put a filename in the [Parameters] field of the Submit display.

*Exercise 8, Part 3*

You enter the command as a system command through the procedures shown below and the information italicized in Figure 11-2.

- 1 Enter *command file editor* on the command line.
- 2 Enter *Myeditor* in the command area at the top of the screen.
- 3 Press **f2 (Add)** to create the new command.
- 4 Complete the command fields as shown in figure 11-2.
- 5 Press **f7 (Return)** after you have entered the command field information shown in Figure 11-2.
- 6 Press **FINISH** to terminate the command-entry process.
- 7 Enter *y* to save this command in your command file.

Figure 11-2 Adding the Myedit Command (Completed)

```

Command File Editor 7.0.0
-----Command File:
[Sys]<Sys>Sys.Cmds
Myedit
-----
Filename
[Your name]

Run file: [sys]<sys>subcmd.run           Case: 00
Help msg: Sets path to [Sys]<Sys>, then runs Editor.
-----
INSERT  DELETE  BLANK  RETURN

```

**Exercise: Conditional Display**

You can display (echo) all characters in the workstation's character set, both printable and non-printable characters, through the Submit file shown in Figure 11-3.

When you enter the italicized text in Figure 11-3, you should substitute hexadecimal values shown in Table 11-1 for the following printed letters in this guide. (Instructor, in exercise 9, shows the correct visual representation of these hexadecimal characters.)

Table 11-1 Hexadecimal Entries in Exercise

Printed	Hexadecimal Entry
●	1B
\$	FF
&	04

Figure 11-3 Sample Submit: Keyboard Demo

```

$'This Submit file can display (echo) all characters
$' (printing and non-printing) for demonstration purposes.
$'
Copy
  [kbd]
  [vid]●

      Press any key except CANCEL or FINISH when ready.

                $AEPRESS CANCEL or FINISH to exit.$AA

c1&
●

```

*Note: Only display this file on your workstation monitor. You should not print it out. The hexadecimal values are interpreted by the printer as control sequences and normal operation of the printer is disrupted. If you do happen to print it, you can clear your printer by turning it off and on, then bringing it back on-line.*

## Lesson 4: Complex Submit Routines

### Uses of Such Routines

You can set up Submit files to perform repetitive tasks, such as building lists or combining parts of a monthly report. A conditional Submit file could, for example, assemble and print a large document.

### Exercise: Assembling a Document

You can use the Submit file shown in Figure 11-4 to assemble and print a large document. The exercise presumes that you have entered the filenames of the various chapters as shown: Chapters 1 through 8 and A through C.

When entering the sample in Figure 11-4, you must substitute hexadecimal values shown in Table 11-2 for the printed letters listed.

Table 11-2 Hexadecimal Entries in Exercise

Printed	Hexadecimal Entry
●	1B
&	04

Figure 11-4 Complex Conditional Submit

```

Editor 7.0      File Position:  0%
-----
Copy
[kbd]
<S>Temp.Fls
y
●Chapter.1 Chapter.2 Chapter.3 Chapter.4 Chapter.5
Chapter.6 Chapter.7 Chapter.8 Chapter.A Chapter.B
Chapter.C
& Delete
  Chapter.Doc
●Create File
  Chapter.Doc
●Append
  @<S>Temp.Fls
  Chapter.Doc
●Format
  Chapter.Doc
  [Spbl]

'Chapters:All'

6
70

3
5
●Delete
<S>*
●
□

```

## Cluster Operations

### Overview

Block 12 gives you an overview of cluster operations and presents some practical options where software installation and system disks are concerned.

For more information on configuration files, you should refer to the *BTOS Systems Software Operations Guide*.

You should allow approximately one hour to complete this block of instruction.

Block 12 consists of the following lessons:

- Lesson 1: Creating a Cluster
- Lesson 2: Configuration Files
- Lesson 3: Installing Software
- Lesson 4: Maximizing Disk Space

### Objectives of Instruction Block 12

When you complete these lessons, you will be able to:

- Understand how clusters are put together
- Know which system files are needed for cluster operations
- Know which file controls software installation
- Know how to write an Install.Sub file that will load data or code files to a workstation or cluster
- Understand what files can be removed from a system in order to maximize its use of disk space.

### Lesson 1: Creating a Cluster

#### Overview of Cluster Hardware and Software

This lesson is a generalized introduction to the minimum hardware and operating system (BTOS) software necessary to cluster a group of workstations.

## Lesson 2: Configuration Files

The configuration files needed by cluster software are briefly described in this section. The classes of files described in this section are:

- Command files
- Printer and datacomm configuration files
- Queue files
- Spooler files
- Sys.Printer files

## Lesson 3: Installing Software

### Requirements and Options

You install software on a workstation through the SOFTWARE INSTALLATION command. Lesson 3 describes the fields and options available with this command. It also explains the elements of installation submit (Install.Sub) files.

### Exercise on SOFTWARE INSTALLATION

You must exit to the Executive to create a subroutine file ([f0]<sys>install.sub) file that can be tested on the system. Sample installation submit files can be found on Instructor disk B2OOT7-1.

Through the BTOS Editor you can load and view any installation submit files or you can TYPE it with the syntax shown in Figure 12-1.

Figure 12-1 **Completed TYPE Form (Example)**

```

Executive 7.0
Path: [f0]<Sys>                               Fri Dec 12, 1986   3:49 PM
-----
Command  type
Type
File list                               [f0]<sys>install.sub
[Confirm each?]

```

---

## Lesson 4: Maximimizing Disk Space

### Removing Files: Standard Procedures

There are certain files on workstations that need to be removed after a system has been in continuous usage for an extended period of time. For example, when you reopen a file for editing, the Executive automatically designates the previous version as <filename>-Old and keeps that copy for recovery purposes.

Old (-Old) files guarantee that you can recover the previous version of a file. However, with normal usage of your workstation, <filename>-Old files tend to clutter up disk volumes. Therefore, you should remove \*-Old files, plus some others such as \*.tmp (temporary) files, on a regular basis.

You can also increase the useable storage capacity of disk volumes by archiving code files for functions not used by a particular operator and then removing those files.

Programming applications such as DEBUG and DUMP, for example, can be removed from systems that are only used for word processing. The combined storage area for the DEBUG and DUMP run and support files is 500 sectors. Removing them to an archive disk adds 250,000 bytes of useable disk area for storing information.

## Exercise on Removing Files

System files can safely be removed to archive disks when the following procedures are followed:

- 1 Print out the directory of the volume, with a FILES command that asks for details. The FILES command for a system with spooled serial printing is:

```
Files
[File list]          [Sys]<*>*
[Details?]          y
[Print to]          [splb]
```

- 2 After you check with a senior-level technician or systems analyst, you should archive with SELECTIVE BACKUP the system files not required for the operation of your workstation.
- 3 Set your path to the directory from which you wish to delete files.

*Note: The next step is the most important one of this exercise. If you do not set [Confirm each?] to y, you cannot control the process and must reload your system software.*

- 4 DELETE archived or unwanted files with the [Confirm each?] option set.

The proper syntax is:

```
Delete
[File list]          *
[Confirm each?]     y
```

When you execute DELETE with the [Confirm each?] option set, you see the message:

(Press **GO** to confirm, **CANCEL** to deny, or **FINISH** to stop the command)

on your monitor screen before the Executive takes any action to remove a file. You press **GO** only for those files you want removed.

---

## Error Messages

When you enter a command parameter that is incorrect or illegal, your workstation displays a brief error message on the screen of your monitor.

If you press the **CANCEL** or **FINISH** keys during a CAI program, for example, you see one of the error messages shown in **Instructor Error Messages**. The description of each error also contains the steps you must take in order to fix the problem.

If your system displays an error message that does not appear in the list for Instructor, you must look at the *BTOS Status Codes Reference Manual* for descriptions of those errors and the steps to correct them. However, system error messages are usually written for experienced data processing personnel. Consequently, many of the error messages in the *BTOS Status Codes* manual are either extremely brief or have no suggestions how to correct the problem.

The **Responses to System Errors** part of this appendix suggests steps to help you fix errors that you could cause or occur on your workstation.

## Instructor Error Messages

Message	Description
<b>Fatal error: Input past end in line 23040. (Press CANCEL or FINISH to exit program)</b>	Fatal means: the program cannot proceed any further at this point. You have pressed the CANCEL or FINISH key and must now exit the Instructor program. <b>Corrective steps:</b> press CANCEL or FINISH to complete your exit from Instructor. Then, re-enter the proper Instructor system command, as shown in the CAI courses.
<b>Fatal error: Record does not exist in line 340. Press CANCEL or FINISH.</b>	Fatal means: the program cannot proceed any further at this point. You are attempting to run Instructor with a write-protected floppy disk in drive f0 or f1. <b>Corrective steps:</b> press CANCEL or FINISH, ensure that the diskette is write enabled, and re-mount the diskette properly in the floppy-disk drive.
<b>Fatal error: Record does not exist in line 410. Press CANCEL or FINISH.</b>	Fatal means: the program cannot proceed further from lack of data. <b>Corrective steps:</b> press CANCEL or FINISH, set your Path to the appropriate directory, and re-execute Instructor. Installation and Path instructions are described in Section 1 of this manual.

## Responses to System Errors

Error Number and Message Displayed	Corrective Steps
<b>4 Operator Intervention</b>	Not really an error. However, the system is telling you that you pressed ACTION/FINISH to stop some software activity. It is acknowledging your keyboard action.
<b>5 Device name must specified</b>	You have forgotten to specify a device name (such as [f0] or [d0]) when it is required, or you have misspelled it. A device name must be enclosed in brackets when it occurs on the same line with a directory name: such as [f1]<pending>
<b>203 No such file</b>	The format of your entry is incorrect. You should type file names with brackets and without spaces. For example, you would reference the Sales.leads file in the <Pending> directory on the [Contracts] volume as: [contracts]<pending>sales.leads
<b>204 No such directory</b>	You have misspelled the directory name or referenced the wrong volume name ([volname]). If you are referencing a floppy disk, you must make sure that it is inserted in the disk drive properly. Use VOLUME STATUS to check what directories are on the volume you want to use.
<b>205 Bad file specification</b>	The format of your entry is incorrect. Type full filenames with the proper brackets and without extra spaces. For example: [contracts]<pending>sales.leads

<b>Error Number and Message Displayed</b>	<b>Corrective Steps</b>
<b>215 No such volume or device</b>	You have entered an incorrect [volname] or reserved device name ([d0], [f0]). If the file you need is on a floppy disk, make sure you inserted the disk properly. Use Volume Status to check the name and contents of any disk.
<b>216 No such volume or device</b>	You have entered an incorrect [volname] or reserved device name ([d0], [f0]) for a piece of hardware that does not exist on your system. If the file you need is on a floppy disk, you must make sure you inserted the disk properly. You should use VOLUME STATUS to check the name and contents of any disk.
<b>224 File already exists</b>	Each new file you create must have a unique name and you have given the name of an existing file. Varying the name by one letter will make it unique. Re-enter your new file name.
<b>230 Disk full</b>	Your disk contains no more work space. To proceed, you must delete some of the files on the disk. Section 12 of this manual discusses safe procedures for backing up and deleting files.
<b>300 Device not ready</b>	The disk drive you requested cannot be used. Check that you inserted the floppy disk properly and that the drive door is closed.
<b>302 Write protected</b>	The floppy disk is write protected. If you want to modify the contents: <ul style="list-style-type: none"><li data-bbox="361 868 932 917">□ for 8-inch floppy disks, place a tab on the write-protect notch in order to store or modify data.</li><li data-bbox="361 933 932 977">□ for 5 1/4-inch disks, remove the tab on the write enable notch in order to store or modify data.</li></ul>

## System Information Messages

Messages in this section appear on your workstation monitor to inform you about the status of a process or hardware device. The messages are listed in alphabetical order.

**Cannot load exit  
run file, please  
re-insert system  
diskette**

You must insert your system software disk in the left drive [f0] on a dual floppy system. Your workstation cannot leave the current command and proceed without it.

**Disk in drive is a  
valid volume**

Data is stored on the disk you inserted. The Executive is notifying you of this fact. You have the option to continue the initialization (thereby erasing all the old data) or to stop the process. To continue, insert another disk.

**No such command**

Your workstation cannot find the command. Press HELP and check the command list. (If you have a dual-floppy standalone system, you may need to insert a different system software disk.)

**There is no such  
device name (or  
volume name) on  
the system**

Your workstation cannot locate the specified volume (disk) or device (disk drive). Check your entry (when using f0 or f1); be sure the number is zero or one. If the file is on a floppy disk, make sure you inserted the disk properly.

**Too many  
characters specified  
for device**

You exceeded the allowable length for the name of a volume (disk drive), password, or volume name. Those names cannot exceed 12 letters (characters).

## Glossary

**APPEND.** Command you use to copy or print files. The printer can be identified by name, by type [Lpt] or [Ptr], or by queue name [Spl] or [Splb] in the **File to** field.

**Applications.** Programs that you use to create or process information. The typical applications you see are those for word processing and data management. However, applications include communication packages as well as programming tools to develop special business software.

**Archive.** Process of copying the data stored on a hard disk to floppy disks for safekeeping.

**B 28 Workstation.** The monitor is mounted on a separate pedestal. The processor and optional disk drives are tabletop units. Refer to **Workstation Hardware** in this guide for an illustration of the unit.

**B 27 Workstation.** The monitor is mounted on a separate pedestal. The processor and optional disk drives are tabletop units. Refer to **Workstation Hardware** in this guide for an illustration of the unit.

**B 26 Workstation.** The monitor is mounted on a separate pedestal. The processor and optional disk drives are tabletop units. Refer to **Workstation Hardware** in this guide for an illustration of the unit.

**B 22 Workstation.** The monitor and lectern are mounted on the same pedestal. Units are clustered to mass-storage units. Refer to **Workstation Hardware** in this guide for an illustration of the unit.

**B 21 Workstation.** The monitor and lectern are mounted on the same pedestal. The processor and optional disk drives are inside the lectern. Refer to **Workstation Hardware** in this guide for an illustration of the unit.

**BOUND.** Key that you use to mark the end of an area to be edited. In the Editor program, the default is the end of the current line.

**CHANGE VOLUME NAME.** Command you use to rename an existing disk volume (hard or floppy disk).

**Character.** A letter, number, or symbol (a space, for example) that appears on your monitor or can be printed. Some characters are used to control workstation processes and do not print on the printer.

**Cluster hardware.** Consists of a master workstation and up to fifteen cluster workstations (with the appropriate types of hardware).

**Cluster software.** Applications software used to control communications and the flow of information between dependent workstations and the cluster's master workstation.

**Cluster Workstation.** Workstation that depends upon the master for all system services if it has no disk drives. With its own hard disk, it can depend upon the master for certain services, such as printing.

**Codeword commands.** Functions in the Editor activated by the CODE key plus the first letter (mnemonic) of the function requested.

**Command.** Instruction to the BTOS operating system to perform a specific action. (See also Default, Field, and Syntax.)

**COMMAND FILE EDITOR.** Command that allows you to add, delete, or modify a system command.

**Command line.** Area of the screen highlighted in reversed video where you enter Executive commands and their parameters.

**Command set.** List of active Executive commands on an individual workstation or cluster.

**Configuration.** Combination of hardware (terminal, disks, keyboard) on a particular system. The configuration of a group of workstations is called a "cluster configuration."

**COPY.** Command you use to copy information from one hardware unit to another or print a document.

**CREATE CONFIGURATION FILE.** Command used to identify the characteristics and name of each type of printer and data communication line in a cluster or on the workstation.

**CREATE DIRECTORY.** Command you use to specify a name for a common group of files. A directory must be established before files can be created within it.

**CREATE FILE.** Sets up a name of a blank file that can now be used to store data.

**Cursor.** Blinking underline or control point on the display.

**Data.** Information that you create or store electronically.

**Default.** The expected choice or value.

**Defaults.** Parameters that the BTOS operating system assumes you want because they apply to most cases.

**DELETE.** Command you use to remove a file or a group of files from a volume. Note that this function is not the same as removing a directory.

**Directories.** Collections of files. On a particular disk volume, each directory must be unique.

**Disk drive.** The hardware unit itself.

**Disk label.** Name given to a disk volume.

**Disk volume.** Separate disk (floppy or hard disk). Refer also to Volume.

**Diskette.** Another name for a floppy disk.

**Edit codes.** CODE key plus the appropriate letter (f, i, j, v, and so on). When the Editor is running, the HELP key lists all these editing codes.

**ExecCmdFile.** The table of system commands available to a particular user. [Sys]<Sys>SysCmds.Run (or an equivalent) must be specified.

**Executive.** Program that controls access to other programs and all data on a workstation.

**Field.** The area that can change each time you use a command. (Refer also to Parameter and Variable Parameter.)

**File.** Data collected under a unique name.

**File deletion.** Recommended files for periodic deletion are:  
\*-Old \*.tmp. \*.ts

**File expansion.** The process of replacing escape sequences with actual run-time data. The file-expansion process opens temporary submit files.

**File list.** Group of names (or single file name).

**File name.** Individual name that is up to 50 characters long. Often used synonymously with the complete name (all three units).

**File names.** Follow naming rules and require brackets to distinguish their three separate parts.

**FILES.** Command that displays a list of files in a default directory (your current path) or a specified directory.

**Floppy disk.** Flexible, portable, magnetic recording surface. Also called "diskette."

**Floppy disks.** Removable-disk storage media.

**FORMAT.** Command you use for document-type page layouts, page numbering and other features associated with word-processing printouts.

**Hard disk.** Sealed, Winchester-type unit.

**Hardware.** Physical parts of your workstation (for example, its keyboard, monitor or disk drive).

**HELP Key.** Key that you can press to show what commands and system processes are available.

**Indicator lights.** Indicate disk or processor activity. Usually one for each type of disk: floppy or hard (Winchester) disk.

**Initialization.** Process of writing information on a blank disk or diskette that properly "formats" that disk to store information.

**Input.** New information or your part in the computing process.

**Installation.Sub.** Submit file resident on all workstation system software diskettes that is used to load the software on the diskettes.

**Interface.** Forwards operator requests for system functions to the proper software for execution, without further need for operator action.

**IVARCHIVE.** Command that prepares a floppy disk to be used for backing up a hard (Winchester) disk. (Refer also to Archive).

**IVOLUME.** Command that initializes all disks (except archive) before you can use them on a workstation.

**Job types.** You do data processing as a job. Jobs are usually called: realtime—when immediate response is needed; batch—when scheduled by the Executive at the operator's request; and spooled—when copied to disk temporarily for later use or further processing.

**Keyboard.** Hardware device used to type in commands and new data (electronic information).

**Keypads.** Areas of the keyboard that contain keys with similar functions.

**Keyboard commands.** Keys that call up editing functions, as embossed on the keycap: MOVE, SCROLL DOWN, DELETE, and others.

**LIST.** Command that requests a list of all file names in a directory or on a disk.

**Magnetic disk.** Recording surface used for the storage of electronic information (data). Disks can record and locate information almost instantaneously.

**MARK.** Key that marks the beginning of an area to be edited with the dedicated keyboard keys such as MOVE, DELETE, and so on. Default is a line of text.

**Mass-storage unit.** Floor-standing disk unit that contains both floppy and hard (Winchester) disk drives.

**Master Workstation.** Workstation that can function independently and usually supports system services such as a printer.

**Mnemonic.** A word or name that reminds you of the action to be done.

**Monitor.** The display screen (cathode-ray tube) for your workstation.

**Names.** Used to organize data and programs on your workstation.

**Naming conventions.** All file names are composed of three elements (volume, directory, and file names), contain no spaces (normally), and do not exceed the specified length.

**NEW COMMAND.** Command that adds a new or modified Executive command to a workstation's command set.

**Operating System.** A special program that coordinates all hardware and software activities on the system.

**Parameter.** Entry that supplies additional specific information needed for a command field. You can change parameters each time you execute a command.

**Parameter file.** Data file created with standard file name but referenced (preceded) by an "@" in the command field. The Executive substitutes the data in the file for the parameter.

**Parameter list.** Data file containing a list of command parameters.

**Parameter number.** Parameters are numbered from zero through the maximum number of user-defined parameters (16).

**Parameter passing.** Command fields are passed by position. Fields can be tested by position number for the presence (?) or absence (#) of data.

**Parameter type.** An escape sequence used to check and replace field parameters according to specified conditions.

**Password.** Name you assign to a volume, directory, and or file to protect it from either unauthorized viewing or change.

**Pause.** Escape sequence that must be used when data is expected from the keyboard during a Sysin process.

**Power switch.** Main control of electrical power to the workstation. The switch is either ON or OFF.

**PRINT.** Command you use to spool printed data files (on a master workstations only) to disk backup for later printing.

**Print wheel.** Contains letters, numbers, and symbols (the font) used for printing.

**Printer.** Device used to print out information stored electronically within a computer.

**Printer cable.** Connects the printer and the workstation processor.

**Printer interface.** The path of communication between the workstation's Central Processing Unit (CPU) and the printer.

**Program.** Sequence of computer instructions that the machine understands and carries out in order to accomplish a system function or job.

**Programming.** Using a programming language (Basic, COBOL, Fortran, and Pascal, for example) to write a program.

**Prompt.** Message from the system that gives you options at a particular point or calls for input of a certain kind.

**Queue Manager.** Links the print queue and the printer for direct printing; the spooler queue and the printer for spooled printing.

**Random access.** Using an index (ordered list) to locate individual items or areas on a magnetic disk.

**Read.** Process that transfers information without changing the original (like making a copy).

**RECORD.** Command you use to write a sequence of commands into a permanent file. You can recall the file for repetition and. or modification. (Refer also to Write.)

**RENAME.** Command you use to give an existing file a different directory or file name.

**Reserved volume name.** Common names for disk units that are names. combinations of letters and numbers. Floppy disks are referenced by [f0] and [f1]; hard disks by [d0], [d1], and [d2]. The system disk is [Sys] (or!Sys) in a cluster configuration).

**Reset.** Button or switch that reloads the BTOS operating software.

**RESTORE.** Command you use for selecting archived files that are to be loaded back to a hard (Winchester) disk.

**Rules for names.** A complete file name is composed of three elements which must always be specified in order to identify an individual file. Each full file name must be unique. Wildcard letters substitute for letters in directory names and file names.

**Scrolling.** Viewing different but continuous portions of a display by adding new lines at the bottom, or the top, of a display.

**Security.** Controlling access to information at various levels (system, volume, directory, and file).

**SELECTIVE BACKUP.** Command you use to select hard (Winchester) disk files for backup (copying to archive disk for safekeeping).

**Sequential access.** Searching for items in sequence (one after another). Refer also to Random Access.

**SignOn.** Process you use to identify yourself to a workstation or cluster. SignOn can be set up to allow only authorized users to sign on to the system.

**SignOnDirectory.** Specific <dirname> that the user will be working in after SignOn. The <Sys>directory is the system's default.

**SignOnExitFile.** Refers to a procedure or run file that executes if the user exits the SignOnChainFile. If the optional SignOnChainFile statement is missing, the default is [Sys]<Sys>Exec.Run.

**SignOnVolume.** A particular disk volume that a user is signed on to when the SignOn process is completed. The system default is the [Sys] volume.

**Simple parameter.** Data that is a valid entry in a command field.

**Software.** Collections of instructions (programming commands) to the machine itself. Users activate them by program name.

**SOFTWARE INSTALLATION.** Command you use to load software, either operating system or applications, to hard (Winchester) disks.

**Spooler.** System utility program that links printers and spooler configuration file(s).

**Spooler display.** Shows the current status of spooler queues and system's printers. You use menu options to select a spooler function.

**SPOOLER STATUS.** Command you use to activate the display of spooler options and the status of current printer activity.

**Standalone.** Workstation that uses its own hard disk for storage and system services.

**Standalone (Dual-Floppy).** Workstation with two floppy disk drives that it uses for storage, system services, and job processing. It is not clustered to a mass-storage unit.

**STOP RECORD.** Command you use to stop the system's Recording process and close the typescript file being recorded.

**SUBMIT.** Command you use to execute a Submit file.

**Submit File.** Data file which contains executable system commands or run file statements. Usually, you identify Submit files with the suffix ".sub".

**Suffix.** Ending sequence of letters (alphanumeric string) beginning with a mark of punctuation and indicating a subgroup of files.

**Syntax.** The right number, letter, or word in the right order at the right time.

**Sys.Printers.** Data file describing the printers available to text-editing and data base management applications.

**TYPE.** Command you use to display the contents of an existing file on the workstation monitor.

**Type-Ahead area.** BTOS records each keystroke as you make it. If the data cannot be displayed because the system is busy, it is held in a type-ahead area (called a "buffer") until it can be displayed.

**Unit (hardware).** One complete piece (monitor or disk, for example) of a workstation. Units can also be attached to a workstation (printers, for example).

**User file.** Holds SignOn information on individual users. These files can assist operators at SignOn by setting up work paths and or executing applications programs.

**User name.** String (alphanumeric sequence of characters) that is used to identify an individual user file which ends with the suffix ".user". The name string is the SignOn identifier.

**Utilities.** Perform specialized services for initializing and formatting disks, printing data, and providing status information and communication between programs and workstations.

**Volume.** Any floppy or hard (Winchester) disk. When you initialize a volume you give it a label (name) and can reference it by that name or by a reserved volume name. Refer also to Reserved Volume Name.

**VOLUME STATUS.** Command you use to determine the contents (directories, available space, and so on) of any disk volume.

**Wildcard.** Substitute for a letter in a directory or file name. The ?-wildcard replaces a single letter and the \*-wildcard substitutes for an indefinite number of letters.

**Winchester disks.** Sealed disk units. They must be backed up periodically through the archive process.

**Workstation type.** Refer to B 20 Series.

**Write.** A process that records new information or changes made to an original version (for example, from temporary to permanent). See also Read.

**Write enable.** All 5 1/4-inch floppy disks contain a notch on one side called a Write Enable Notch. When the notch is visible, the contents of the disk can be changed. When it is covered with a tab (small piece of tape), the contents of the disk cannot be modified.

**Write protect.** All 8-inch floppy disks contain a notch on the bottom called a Write Protect Notch. When the notch is visible, the contents of the disk cannot be changed. When it is covered with a tab (small piece of tape), the contents of the disk can be modified.

## Mass Storage Unit

This appendix describes the mass storage unit (B 22). It includes five figures and two procedures:

- Figure C-1 shows the B 22 hardware configuration
- Figure C-2 illustrates the B 22 disk drive
- Figure C-3 shows the location of the on and off switches for the mass storage unit disk drive
- Figure C-4 shows the 8-inch disk and its main features
- Figure C-5 shows the write tab applied over the write protect notch
- **Inserting a Floppy Disk** describes the procedures for inserting the 8-inch floppy disk.
- **Removing Floppy Disks** describes the procedures for removing the 8-inch floppy disk.

The B 22 workstation is attached to a mass storage unit that uses 8-inch floppy disks. The processor is inside the lectern. The 8-inch floppy drive, Winchester disk, and Winchester drive are inside the mass storage unit.

Figure C-1 **Burroughs B 22 Hardware Configuration**

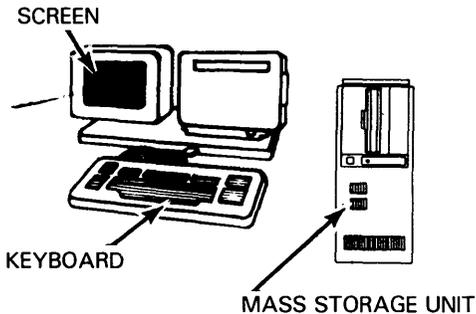
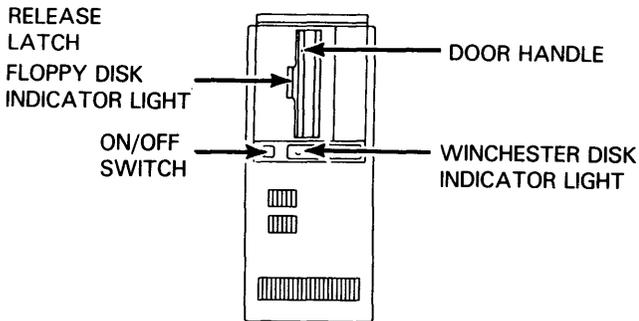


Figure C-2 B 22 Disk Drive



### ON/OFF DESCRIPTION

With your B 22 attached to the mass storage unit:

Press the mass storage disk drive on/off button then press the red button on the lectern. These switches turn on the screen, disk drives, and processor. Both lights remain on while your B 22 is operating.

To turn your B 22 off, press the red button on the lectern first; then press the on/off switch on the disk drive.

Figure C-3 On/Off Switches

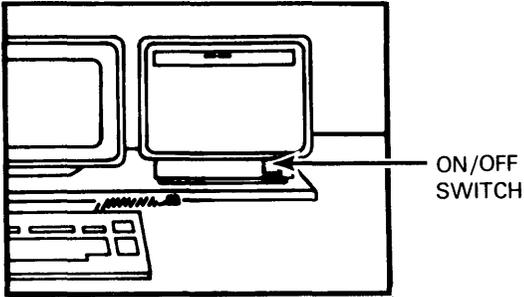


Figure C-4 8-Inch Floppy Disk

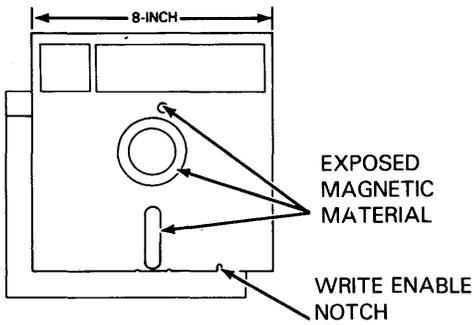
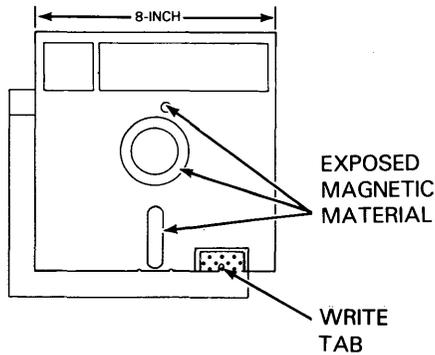


Figure C-5 Write Tab Applied Over Notch



## The Write Protect Notch

The notch located on the bottom of 8-inch floppy disks is called a Write Protect Notch. When it is **uncovered**, you cannot add to or change information on the floppy disk. In order to change or add information, you must install a "write tab" over the Write Protect Notch, as shown in Figure C-5.

## Inserting a Floppy Disk

Your workstation should be turned on before you insert a floppy disk. Refer to Figure C-3 for the location of the power switch.

---

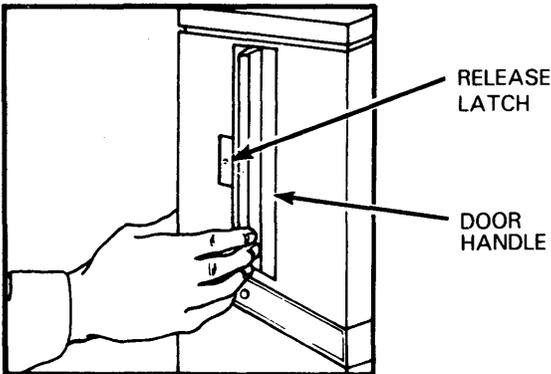
**Caution:** *Never open a drive door when the indicator light is on. You could damage the floppy disk or the drive itself.*

---

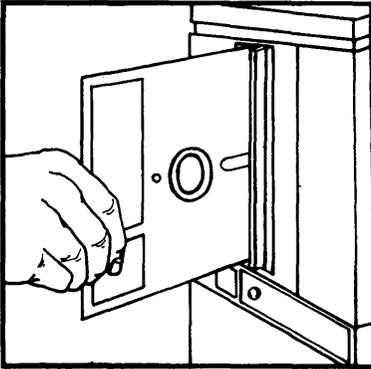
## Inserting a B 22 Floppy Disk

To insert an 8-inch floppy disk, proceed as follows:

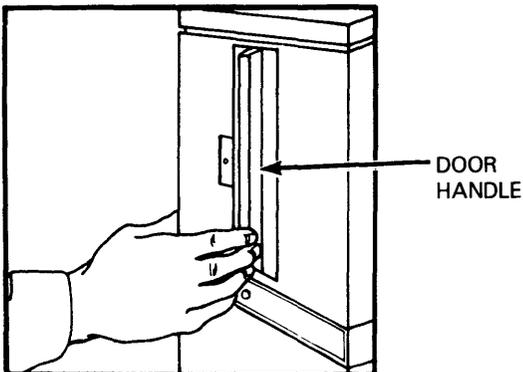
- 1 Remove the floppy disk from its jacket.
- 2 Open the floppy disk drive by pressing the release latch.



- 3** Position the floppy disk as illustrated, then slide the floppy disk into the drive until it stops. The floppy disk label is next to the door handle. If you insert the floppy disk properly, it will not come out when you release it.



- 4** Close the floppy disk drive door by sliding the door handle to the left until you hear a click. The door should remain closed. (The door must be closed for your B 22 to use the floppy disk.)





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