Volume 1
Mastering the Osborne Executive

VOLUME 1

Mastering the Osborne Executive

OSBORNE EXECUTIVE GUIDES

Acknowledgements

Many people contributed their time and talents to the *Osborne Executive Guides*. None more so than Roger Gottlieb, who orchestrated the entire project.

This volume was written by Joseph Caggiano and Mike Iannamico.

Part No. 3F00193-00

FCC Notice

This equipment generates and uses radio frequency energy. If not installed and used properly, that is, strictly according to the manufacturer's instructions, the equipment may cause interference with radio and television reception.

This equipment has been type tested and found to comply with the limits for a **Class B** computing device as specified in FCC Rules, Part 15, Subpart J, which is designed to provide reasonable protection against such interference in a residential installation.

If the equipment does cause interference to radio or television reception, which can be determined by turning it ON and OFF, try to correct the interference by doing one or more of the following:

Reorient the receiving antenna.
the computer with respect to the receiver.
Move the computer away from the receiver.
Plug the computer into a different outlet so the computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

To maintain Class B compliance use properly shielded and grounded cables when connecting this equipment to peripheral devices.

Warning

This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of FCC Rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Contents

Introduction

The **Osborne Executive** is a complete computer system. It has a built-in video monitor, two disk drives, and a keyboard — everything needed for immediate use.

The **Executive** has a rich software package. It includes:

- **WordStar** - the most popular and powerful word processing program. **WordStar** has a complete range of functions for text entry, editing, and printing. The **MailMerge** feature is ideal for preparing multiple mailings and mailing lists.
- **SuperCalc** - the electronic "spreadsheet" for calculation and numerical forecasting. **SuperCalc** provides mathematical functions, various format options, and immediate spreadsheet updating.
- **Personal Pearl** - a versatile, easily used program for organizing and retrieving information.
- **CP/M Plus** - an advanced version of the industry-standard **CP/M** operating system. Included with **CP/M Plus** are Osborne **Utilities** for easier, more efficient computer use.
- **P-System** - an operating system for access to a growing range of software packages and programming languages.

The **Osborne Executive** will also provide terminal emulation. This unique feature allows the **Executive** to communicate with both personal and mainframe computers.

Osborne builds the **Executive** to be portable, versatile, and easy to use and maintain. We're committed to making it a valuable asset for your business and personal needs.

CHAPTER 1
Getting Started

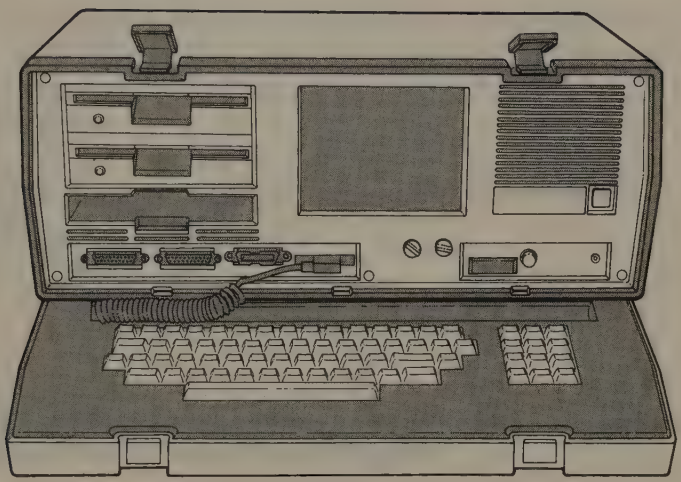
Executive Summary

Chapter 1 Getting Started

This chapter shows you how to:

- Set up the computer for operation
- Handle diskettes
- Copy and prepare diskettes for use

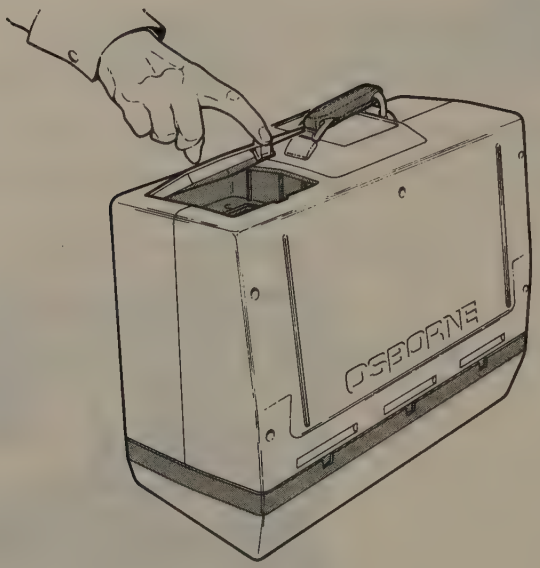
Connecting the Power Cord



The **Osborne Executive** is built into a portable carrying case. The case protects the computer during travel and storage, but opens easily for use.

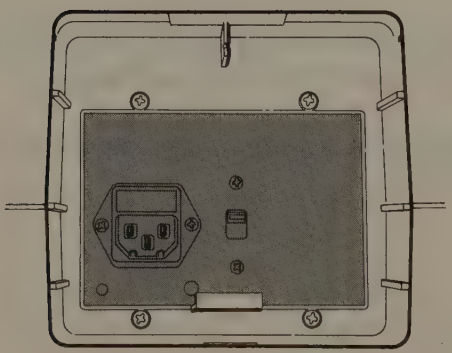
The power cord connects to a plug in the covered compartment next to the handle. Before opening the carrying case, connect the power cord this way.

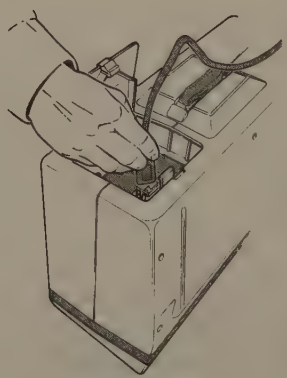
Press the tab on the cover next to the carrying handle and lift the cover.



Inside the compartment is a three-pronged electrical plug. Connect the power cord to this plug.

There's a small, red voltage-selector switch next to the electrical plug. The switch is set to 115 volts for U.S. operation and 230 volts for overseas use.



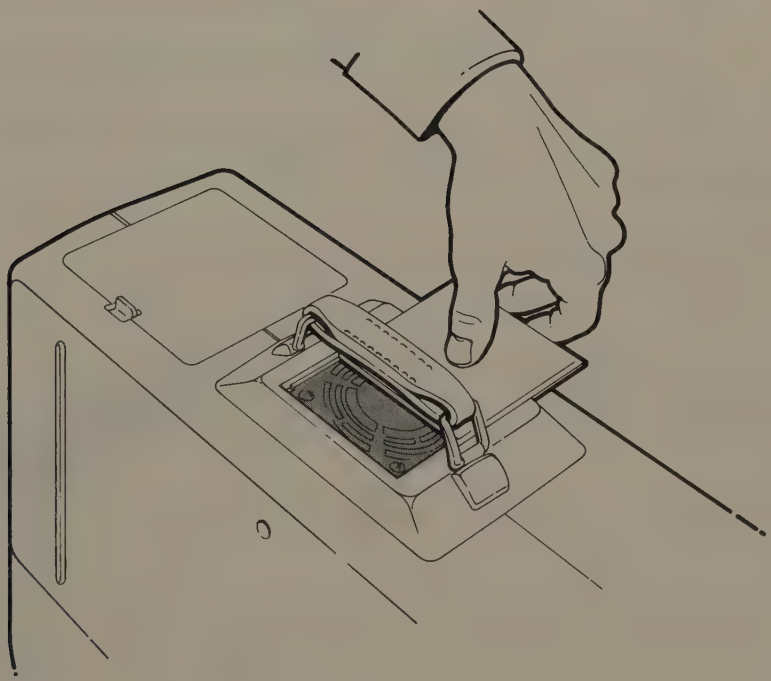


The Cooling Fan

The **cooling fan** is built into the case beneath the carrying handle. The sliding panel which covers the fan should be closed when the computer isn't in use.

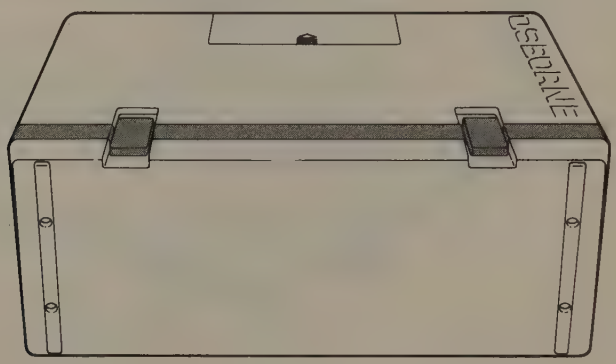
Locate the panel beneath the carrying handle and slide it back to see the fan. The fan operates when the panel is open and the computer is ON. The fan DOES NOT operate when the panel is closed.

Always open the cooling fan panel before using the computer.



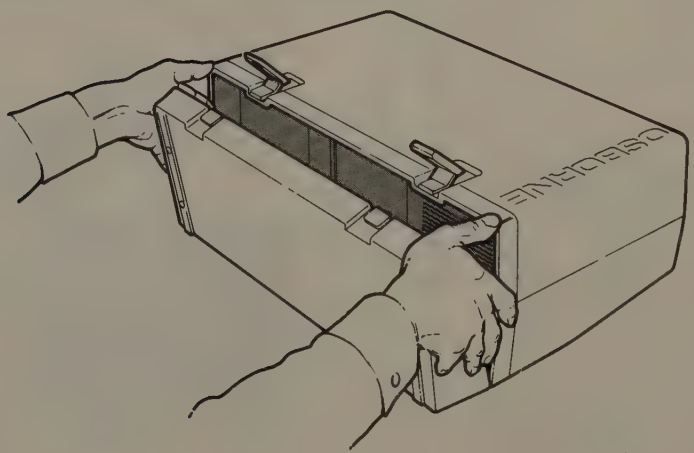
Unlatching the Keyboard

Place the carrying case on a flat surface with the latches on top and the handle facing away from you. Like this:

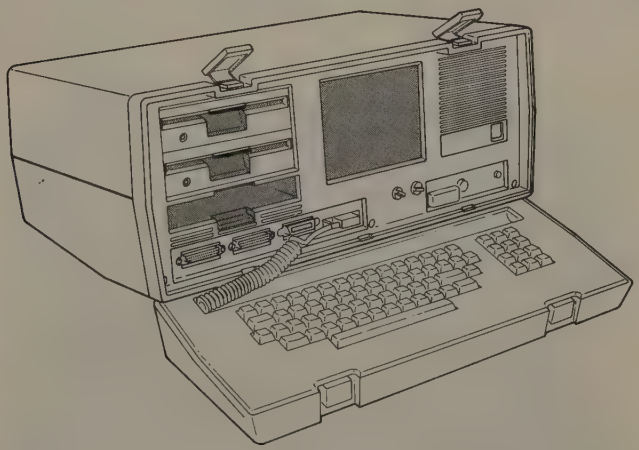


Plug the power cord into an electrical outlet.

Hold the case as shown below. Unfasten the latches and fold the keyboard down.



A flexible cable connects the keyboard to the computer. Many people find it convenient to position the computer on the back edge of the keyboard. This tilts the video screen to a comfortable viewing angle.



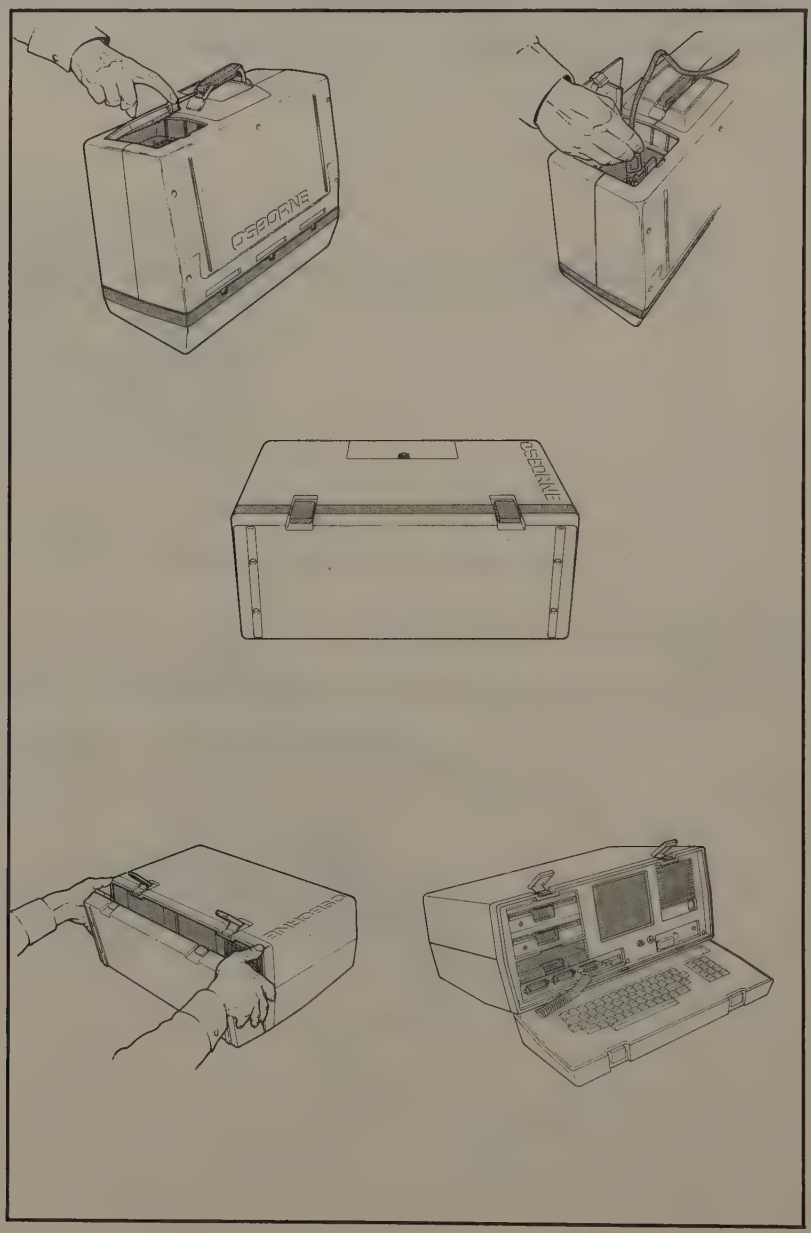
Caution

Electrical devices such as typewriters produce interference when they're turned ON and OFF. This interference can cause the computer to lose data.

To guard against this possibility, isolate the computer as much as possible from other electrical devices. For extra safety, use a voltage-protector recommended by your Authorized Osborne Dealer.

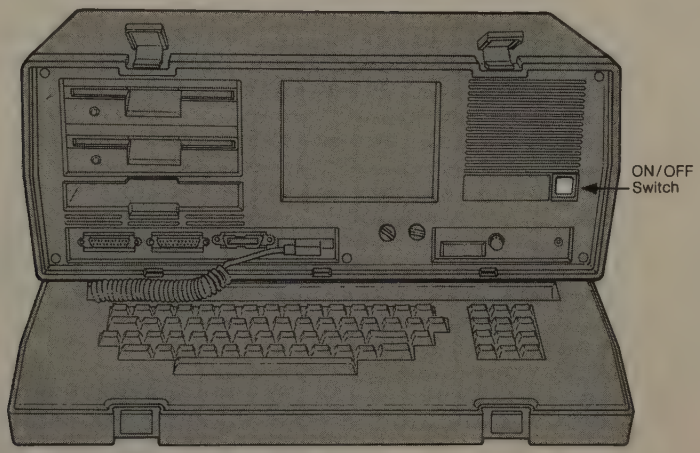
Executive Summary

SETTING UP



Turning the Computer ON

The **Osborne Executive** has a push button **ON/OFF switch**. It's the blue button on the front of the computer, to the right of the video screen.



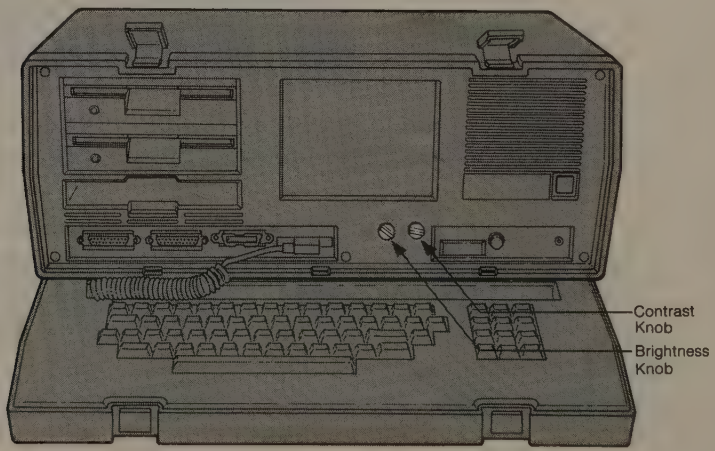
After you've set up and plugged in the computer, press the ON/OFF switch. The switch lights up when power is ON.

After the computer is turned ON, it checks its circuits for a moment, then "beeps." If the unit is cold, the screen will remain blank for several seconds. If it's warmed up from recent use, you'll briefly see test patterns and a "Running Self Test" message.

When the **Executive** completes its test, the Sign-On screen appears:

```
EXECUTIVE
REV V1.1
© 1983 OSBORNE COMPUTER CORPORATION
26538 DANTI COURT
HAYWARD, CA 94545

INSERT DISK IN DRIVE A AND PRESS RETURN.
```

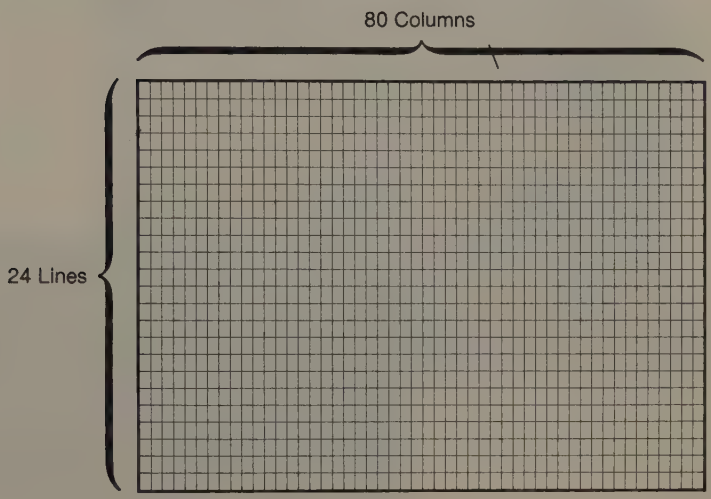
If this screen doesn't appear several seconds after you turn the computer ON, turn the **BRT** and **CONTR** knobs on the front of the computer clockwise until the Sign-On message is visible.



BRT is the video brightness control. **CONTR** controls video contrast. Rotate these knobs for clear and comfortable viewing.

The Video Monitor

The video monitor displays data entered into the computer and the **Executive's** responses.

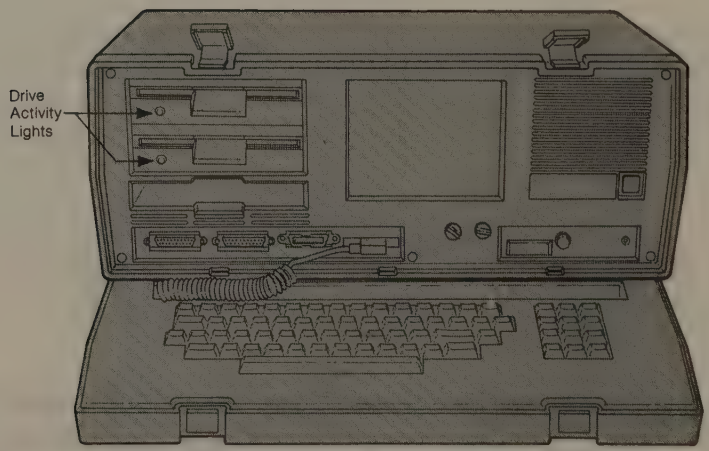


The built-in monitor has a 7-inch amber screen able to display 24 rows and 80 columns of characters. The **Osborne Executive** also has connectors for an external video monitor.

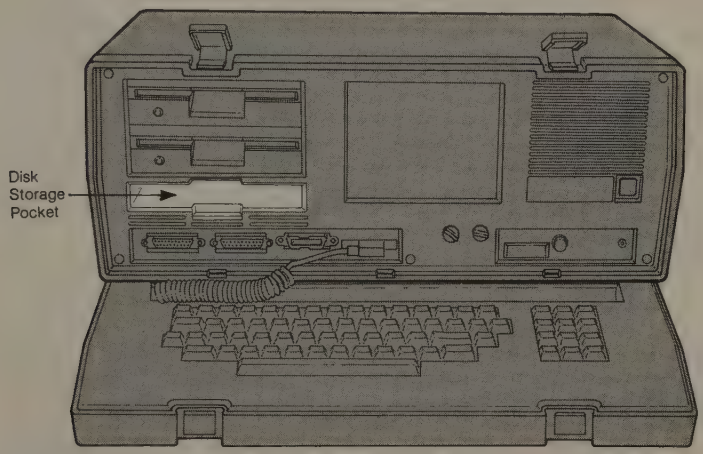
Disk Drives

The **Executive's** disk drives are to the left of the video monitor. The upper drive is drive **A**. The one below it is drive **B**. The disk drives read information electronically from and write it onto diskettes.

The small red light on each disk drive is the **disk activity light**. This light will be ON when a disk drive is operating.

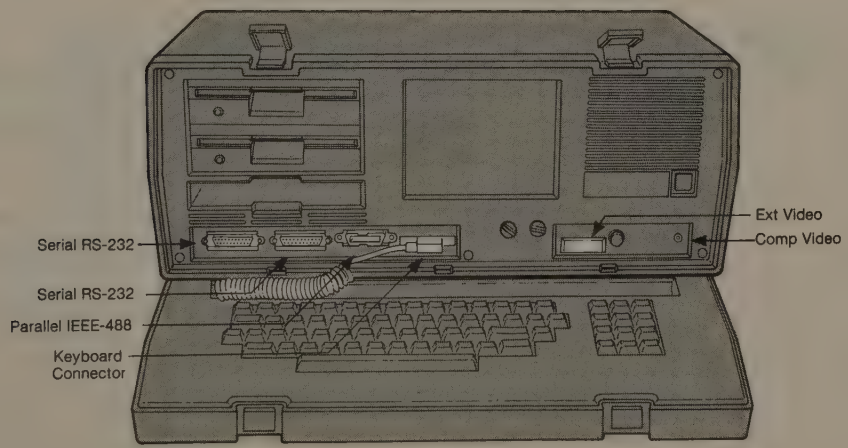


Diskette Storage Pocket



Equipment Connectors

The **Osborne Executive** has six connectors (or **ports**) for attaching additional equipment. These ports are shown below.



SERIAL RS-232 - two RS-232 connectors are available for serial communication. The one on the right is generally used to connect a printer to the computer; the one on the left for a modem or telecommunication device.

RS-232 refers to an industry standard for computer equipment connections. Serial communication refers to a particular type of data transfer between computers and external equipment.

PARALLEL IEEE-488 - this is a standard connector for parallel data transfer. Parallel printers, scientific equipment, and additional disk drives can be connected here.

KEYBOARD CONNECTOR - the cable which connects the keyboard to the computer plugs in here. Before using the computer, check that the keyboard is securely connected. If it isn't, turn the computer OFF, then plug in the keyboard cable here.

COMP VIDEO - this is the connector for a composite external video monitor. If you're using an external monitor, plug it into this port now.

EXT VIDEO - this is an alternate connector for some types of external video monitor. This connector is fitted with a cap which reads "DO NOT REMOVE WHILE POWER IS ON".

Note:

We recommend you use the COMP VIDEO connector for an external monitor.

The EXT VIDEO connector is provided for the relatively small number of monitors which require it.

Connecting Printers and Other Equipment

A wide selection of printers is available for use with the **Osborne Executive**. In the absence of industry-wide standards, each of these printers has particular requirements for cables, internal settings, and data transmission.

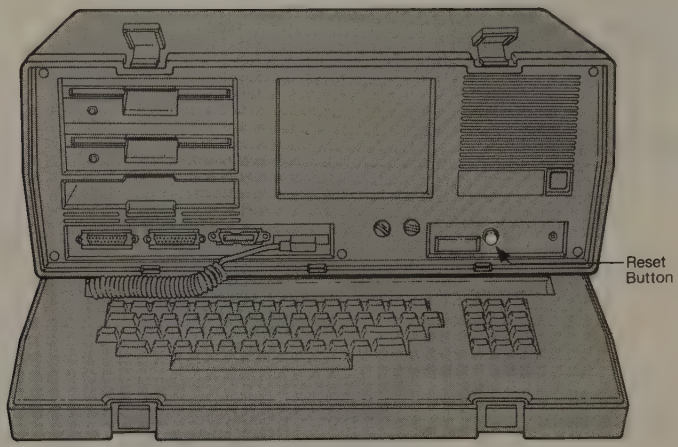
Before connecting a printer to the **Osborne Executive**, consult the printer Operating Manual or your Authorized Osborne Dealer for appropriate details.

Microcomputer accessories are often described as "RS-232 compatible." These accessories may also require special cables for connection to the **Osborne Executive**. When purchasing accessories and equipment, consult your Authorized Osborne Dealer.

The RESET Button

The **RESET** button is on the front of the computer to the right of the brightness (BRT) and contrast (CONTR) knobs.

Pushing the RESET button has the same effect as turning the **Executive** OFF and then ON again. The computer stops whatever it's doing, the screen clears, and the Sign-On message appears.



Caution!

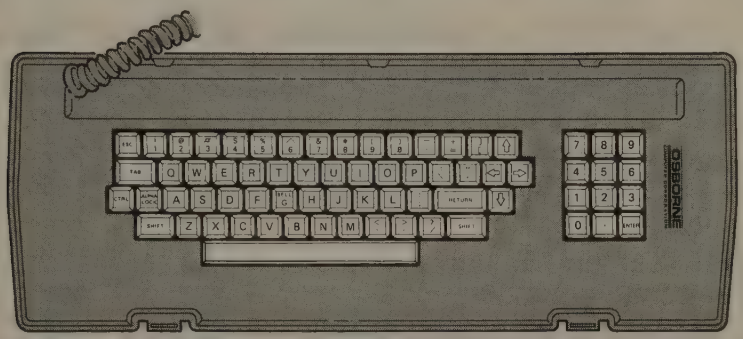
Pressing the RESET button may cause you to lose data which hasn't been saved on diskette.

Pressing the RESET button while a disk drive is operating may erase data on the diskette in the drive. To avoid this, DO NOT press RESET while the red disk activity light is ON.

Generally, the RESET button has two uses. The first is to restart the computer after certain error messages appear on screen. The second is for convenience in switching from one application diskette to another. Later in the *Osborne Executive Guides* you'll use RESET in both these ways.

The Keyboard

The **Osborne Executive** has a standard set of letter and number keys placed like those on an electric typewriter. We've also added a 10-key numeric pad for greater efficiency.



Generally, the keys are used to enter text and numbers into the computer. When you press a key to enter information, the video screen displays the character pressed.

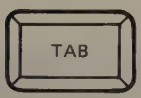
Several keys have special functions. Pressing one of these keys will NOT display the corresponding character on screen. Instead, the computer will follow a built-in instruction.

Special keys are not unique to computers. On a typewriter, for example, pressing TAB advances the tab stop. Pressing RETURN moves the carriage. Neither of these keys prints a character.

The **Osborne Executive's** special keys are listed below. There's more detail about them at appropriate points later in the text.

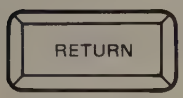
Special Keys

Hold this key down for uppercase letters or the upper character on the key pressed.



Advances to the next tab stop. Tabs are automatically set every five spaces.

When locked down, all letters are uppercase are uppercase. This key affects only letters.



Advances to beginning of next line on screen; same as Carriage Return on a typewriter.

This key is also used to instruct the computer to carry out a command just entered.

Used to cancel commands.

These ARROW KEYS move the cursor on screen in the direction indicated. The **cursor** is the bright rectangular block which marks the data entry point on screen.

The CTRL or Control key is used to issue commands to the computer. This is done by holding down the CTRL key while pressing a second key.

Four special characters are *not* shown on keycaps: tilda ~; left bracket {; right bracket }; accent `.

To display these characters, hold down the CTRL key and press a second key as follows:

CTRL / displays tilda (~)

CTRL < displays left bracket ({)

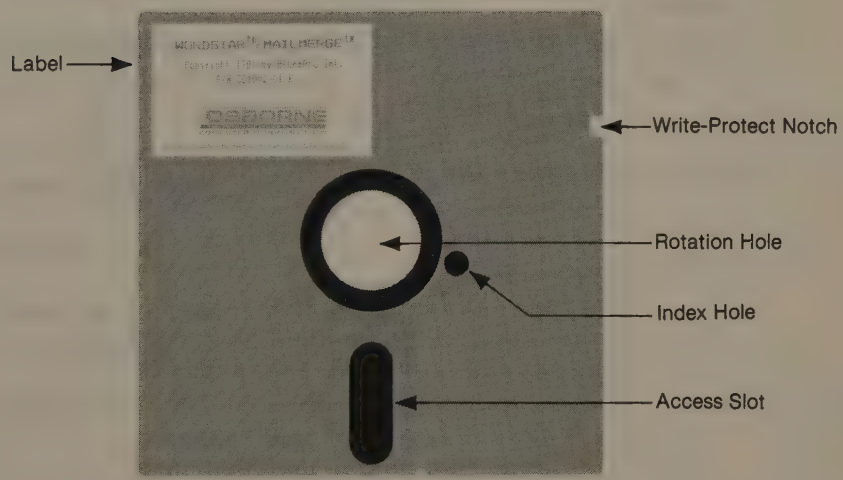
CTRL > displays right bracket (})

CTRL = displays accent (`)

Chapter 3 also describes the CHARGEN program for creating alternate character sets and custom characters.

Diskettes

A diskette is a thin plastic wafer sealed in a protective cardboard envelope. Information is magnetically recorded on the plastic wafer for use by the computer.



The cardboard envelope protects the plastic from dirt and finger smudges which can damage the magnetic surface. **Handle diskettes carefully, without touching the plastic surface.**

Many diskettes have a **write-protect notch** as shown above. When this notch is covered, the computer can read data from the diskette but not write data onto it.

Small, metallic tabs sold with diskettes are designed to cover the write-protect notch. Placing one of these tabs over the write-protect notch prevents data from being written onto the diskette. Protect your diskettes this way when you don't wish them to be altered or erased.

The program diskettes sold with the **Osborne Executive** have no write-protect notches. This means you can't write data onto them. It's extra security against erasure or alteration.

Handling Diskettes

Store diskettes in a cool, clean, and dry area.

Handle diskettes by their cardboard envelope, without touching the plastic surface.

Don't scratch or fold diskettes.

Isolate diskettes as much as possible from electrical and magnetic devices (office machines, televisions, etc.).

Program Diskettes

Fourteen program diskettes are included with the **Osborne Executive**. These diskettes contain **programs** or prewritten sets of instructions. The computer uses these programs to carry out the tasks you give it.

- **Osborne System Disk** - the programs used to set up the computer and prepare other diskettes for use.
- **CP/M Plus General Utilities** - the most popular CP/M operating programs.
- **CP/M Plus Advanced Utilities** - sophisticated utilities for programming and advanced uses.
- **WordStar**, **Mailmerge** and **SuperCalc** - application programs for word processing and spreadsheet calculations.
- **Personal Pearl** - a package of six diskettes for data organization and management.
- **CBASIC/MBASIC** - two variations of the BASIC programming language. CBASIC runs programs. MBASIC is for both writing and running them.
- **p-System** - an additional operating system for greater versatility.

Data Diskettes

Data diskettes are diskettes which you'll use for working with and storing data. The **Osborne Executive** uses **double-density** diskettes. A double-density diskette has an information capacity equivalent to dozens of single-spaced typewritten pages.

When ordering diskettes for the **Osborne Executive**, ask for diskettes which are:

- 5¼ inch
- Single sided
- Double density
- Soft sectored

You can also use **double-sided** or **single-density** diskettes.

Computers use various formats to store data on diskettes. The format differs from one computer manufacturer to another. Most computers recognize only their own manufacturer's format.

The **Osborne Executive**, however, reads diskette formats used by many other computers. These include:

- Osborne 1 single- or double-density format
- Xerox 820 single-density
- Cromemco single-density
- IBM PC (when using CP/M-86)
- DEC VT-180
- Universal medium (with p-System)

Osborne will add other formats to this list as available.

Because it recognizes various diskette formats, the **Osborne Executive** can use data written by other computer systems. It can also write data onto diskettes in the format used by other computers. This unique compatibility makes the **Osborne Executive** exceptionally versatile.

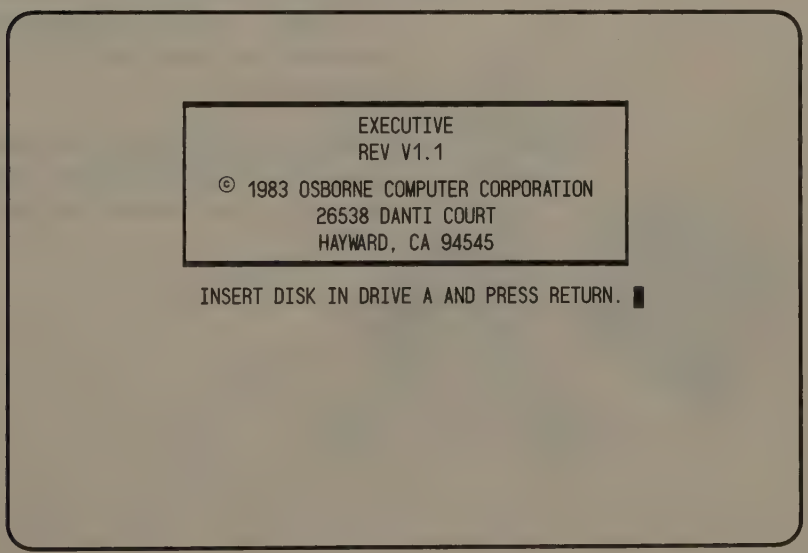
Loading Programs into the Computer

The first step in using the computer is to load a program into it. We'll do that now and then make copies of the program diskettes you've received.

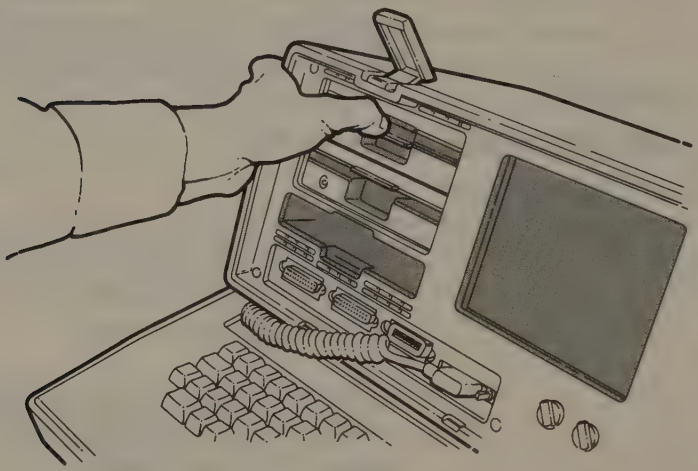
You'll need the program diskettes and several blank ones before continuing. When you're ready, please follow the sequence of steps below.

Step-by-Step

1. Press the blue power switch to turn ON the computer. You'll see this Sign-On message on screen:



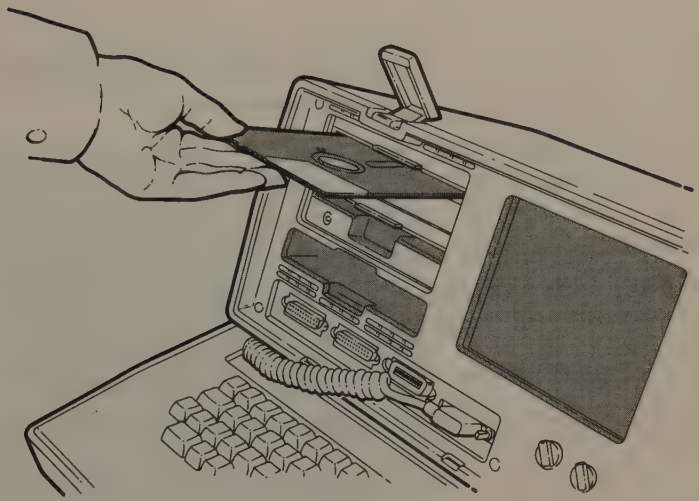
2. Press the latches on the disk drive doors to open them.



3. One of the diskettes you've received is labelled **System Disk**.

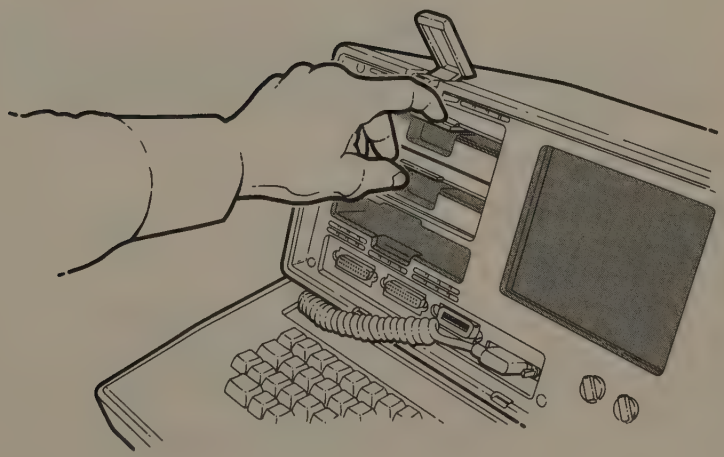
   Hold this diskette by its cardboard envelope so the label faces up and the long oval slot points toward the computer. Be careful not to touch the plastic surface of the diskette.

4. Insert the **System Disk** completely into the upper disk drive (drive **A**). The diskette label faces up and the long oval slot on the diskette points toward the computer.

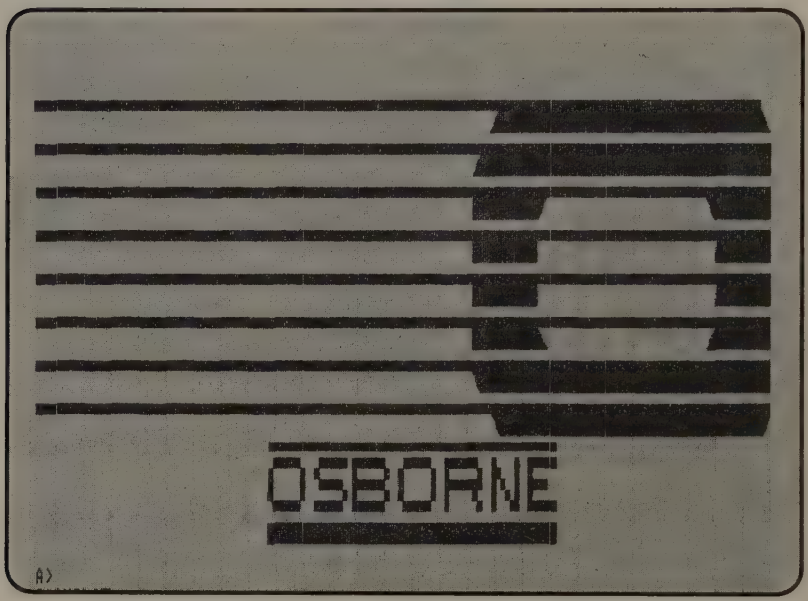


5. Close drive door **A** by pressing it down until it latches shut.

[Closing disk drive]



6. Press RETURN to activate the disk drive. You'll see this screen after a moment:



You've just loaded the CP/M Plus operating system into the computer. The **A>** symbol is called the "A prompt." It means the computer is waiting for your next command. We'll instruct it to copy the program diskettes.

Copying Diskettes

A basic rule of computing is to **copy** your program diskettes. This protects you against loss or damage to the originals.

Step-by-Step

7. Type [C][O][P][Y] . If you make a typing error, use the LEFT ARROW key to backspace over it.

   Press [RETURN]. This changes the screen display:

```
        Disk Utility Program
   Osborne EXECUTVE Computer System
              V1.1

      ▌ Copy Diskettes
        Format Diskettes
        RETURN TO CP/M

   Use the ARROW keys to position the
   cursor next to the desired choice
              or
   Press RETURN to select a COPY option
```

8. Our choice is **Copy Diskettes**. If the cursor isn't next to this choice already, use the ARROW KEYS to move it there. Then press [RETURN]. The screen changes again:

```
        Disk Utility Program
   Osborne EXECUTVE Computer System
              V1.1

     ▌ Copy from Drive A to Drive B
       Copy from Drive B to Drive A
       Return to the Main Menu
       Return to CP/M

       Use the ARROW keys to position the
       cursor next to the desired choice
                  or
       Insert diskettes and
       Press RETURN to Start COPY
```

We'll make a copy from drive **A** (the **System Disk)** to drive **B**. If necessary, use the ARROW KEYS to position the cursor next to the first choice: **Copy from Drive A to Drive B**.

9. Place a blank diskette in the lower disk drive (drive **B**) and close the drive door.
10. Press RETURN

This starts the actual copying. The disk drives will activate in turn as the computer copies data from drive **A** to drive **B**.

While copying is underway, your screen will display a changing series of numbers from **1** to **39**. These are **track numbers**. They indicate areas where data is first read on the source diskette, then written on the copy.

COPY Messages

A. If the destination diskette in drive **B** isn't blank, you'll see this message after pressing RETURN in Step 10:

```
Diskette in Drive B contains information.
    Is it OK to overwrite it (y/n)?
```

Copying onto this diskette will erase any data already there. Press **Y** if this is acceptable. Otherwise, press **N** and return to Step 9.

B. While copying is in progress, this message appears at the center of your screen:

```
Press and Hold Q to Quit Copying
```

If you wish to cancel copying for some reason, press and hold **Q**.

C. If there's a problem after you press RETURN in Step 10, your screen will display a **COPY ERROR** message. In this case, follow the instructions on screen to restart copying. A READ ERROR usually indicates a problem with the source diskette. A WRITE ERROR indicates one with the destination diskette.

   If **COPY ERROR** continues to appear after several attempts, use another blank diskette.

D. When copying is completed, the screen displays this message:

```
COPY completed successfully
Press RETURN to continue.
```

11. Remove the **original System Disk** from drive **A** (the upper drive). Store it safely.

12. Prepare a label marked **SYSTEM DISK COPY**. Remove the diskette from the lower disk drive and label it. This will be the **working copy** of your **System Disk**.

This is a good opportunity to copy the other program diskettes you've received.

13. Insert another program diskette in drive **A**. Press RETURN to display the screen shown in Step 8.

14. Repeat Steps 9 through 12, using the appropriate label for each copy. Follow the same sequence to copy each program diskette.

Note:

These copies are for your use ONLY. Copying program diskettes for any other purpose violates the software licensing agreement and the copyright. Replacing a lost or damaged program diskette can be expensive and time-consuming. Avoid this by using **copies** *of these diskettes. Store the originals in a safe place.*

Leaving the COPY Program

When you've finished copying, press RETURN. This displays the screen in Step 8:

```
Copy from Drive A to Drive B
Copy from Drive B to Drive A
Return to the Main Menu
Return to CP/M

Use the ARROW keys to position the
cursor next to the desired choice
              or
Insert diskettes and
Press RETURN to Start COPY
```

The choices we're interested in now are **Return to the Main Menu** and **Return to CP/M**.

Return to the Main Menu will lead you into the next sequence of operations, called **formatting** diskettes. If you're ready to continue, make this choice.

Return to CP/M will take you out of the COPY program. If you wish to take a break or stop using the computer for now, this is the choice to make.

Here's what happens in each case.

Return to the Main Menu

Use the ARROW KEYS to position the cursor next to **Return to the Main Menu**.

Press [RETURN] to display the COPY screen:

```
▌Copy Diskettes
 Format Diskettes
 RETURN TO CP/M

 Use the ARROW keys to position the
 cursor next to the desired choice
                or
 Press RETURN to select a COPY option
```

Does this screen look familiar? You've already used it in Step 7 to start the COPY sequence. In a moment, you'll use it to **format** diskettes. You can skip the text below and go directly to the section labelled **Formatting Diskettes**.

Return to CP/M

If you're ready to exit from the COPY program and stop work for now, position the cursor next to **Return to CP/M**.

Press [RETURN]. This displays the **A>** at the top of your screen. It means you've left the COPY program. You'll see later that the **A>** prompt is the starting point for many programs.

Right now, though, remove any diskettes from the disk drives before turning OFF the computer. When you're ready to resume, start with the **Formatting Diskettes** section of this text.

Executive Summary

COPYING DISKETTES

COPY ALL PROGRAM DISKETTES WHEN PURCHASED. COPY WORK DISKETTES REGULARLY. Use these copies, not the originals.

To copy diskettes:

1. *Start from* **Sign-On screen**.
2. Insert **System Disk** working copy in drive **A**.
3. Press RETURN.
4. When the **A>** appears, type COPY and press RETURN.
5. This message appears when the COPY program is loaded:

```
▌Copy Diskettes
 Format Diskettes
 RETURN TO CP/M
```

6. **REMOVE System Disk** from drive **A**. **INSERT** the diskette being copied.
7. **INSERT** a blank diskette in drive **B**.
8. Be sure cursor is next to **Copy Diskettes**. Press RETURN. This message appears:

```
▌Copy from Drive A to Drive B
 Copy from Drive B to Drive A
 Return to the Main Menu
 Return to CP/M
```

9. Press **RETURN** to copy from drive **A** to drive **B**.
10. When screen displays "COPY completed successfully," press RETURN. Repeat the copy procedure as needed for additional copies.
11. To exit from COPY program, select **Return to CP/M** and press RETURN.

Note:

- Copying onto a diskette containing data will **erase** that data. A warning message appears on screen allowing you to cancel the copy before this happens.
- The COPY program automatically formats the diskette onto which the copy is made.

Formatting Diskettes

After copying the program diskettes, the next step in using the computer is to **format** several data diskettes.

Formatting is the process of preparing blank diskettes so the **Osborne Executive** can write data onto and read data from them.

A blank diskette needs to be formatted only once. If you change or erase the data on the diskette afterward, the diskette remains formatted. This means it's still ready for new data.

FORMAT is part of the COPY program you used in the last section. It's one of the options shown on the COPY program screen. Here's how it works.

Step-by-Step

IF YOU'VE PRESSED RESET OR TURNED OFF THE COMPUTER, START WITH STEP **1**.

IF YOU'RE CONTINUING DIRECTLY FROM THE COPY PROGRAM, START WITH STEP **6**.

1. Turn ON the computer. When the Sign-On screen appears, insert the **System Disk working copy** in drive **A**.
2. Press [RETURN].
3. When the **A>** appears, type [C][O][P][Y]. If you make a typing error, use the LEFT ARROW key to backspace over it. Then type the correction.
4. Press [RETURN].
5. The COPY program loads and displays this screen:

```
        Disk Utility Program
    Osborne EXECUTVE Computer System
              V1.1

      ▮ Copy Diskettes
        Format Diskettes
        RETURN TO CP/M

    Use the ARROW keys to position the
    cursor next to the desired choice
                  or
    Press RETURN to select a COPY option
```

6. Use the ARROW KEYS to position the cursor next to **Format Diskettes**.
7. Press RETURN to display this screen:

```
        Disk Utility Program
    Osborne Executive Computer System
              V1.1

      Format Diskette in Drive A
    ▮ Format Diskette in Drive B
      Return to the Main Menu
      Return to CP/M

      Use the ARROW keys to position the
      cursor next to the desired choice
                    or
    Insert a Diskette in selected drive and
         Press RETURN to Start FORMAT
```

8. Insert a blank diskette in drive **B**.
9. The cursor is at the entry **Format Diskette in Drive B**. Press RETURN to begin formatting.

During formatting the screen displays a series of asterisks (*) as each area (or track) on the diskette is formatted. Like this:

```
            Press and Hold Q to Quit Formatting
                      Track Formatted
        0         1         2         3
        01234567890123456789012345678901234567890123456789
        ********************************

* Indicates Good Format          E Indicates Format Error
```

FORMAT Messages

A. If the diskette in drive **B** isn't blank, you'll see this message after pressing RETURN in Step 9:

```
Diskette in Drive B contains information.
Is it OK to overwrite it (y/n)?
```

Formatting will ERASE the information on this diskette. Press **Y** if this is acceptable. Otherwise, press **N** and return to Step 8.

B. This message is at the center of your screen during formatting:

```
            Press and Hold Q to Quit Formatting
```

If you wish to cancel formatting for any reason, press and hold **Q**.

C. If the computer detects a flaw on the diskette being formatted, the screen in Step 9 will show an **E** rather than an asterisk (*) for that location.

At the end of formatting, you'll see this message:

```
FORMAT ERROR
Press ESC to continue
```

In this case, press ESC, then press RETURN to repeat formatting. If FORMAT ERROR appears again, use another blank diskette.

D. When formatting is completed, this message appears at the bottom of your screen:

```
FORMAT completed successfully.
Press RETURN to continue.
```

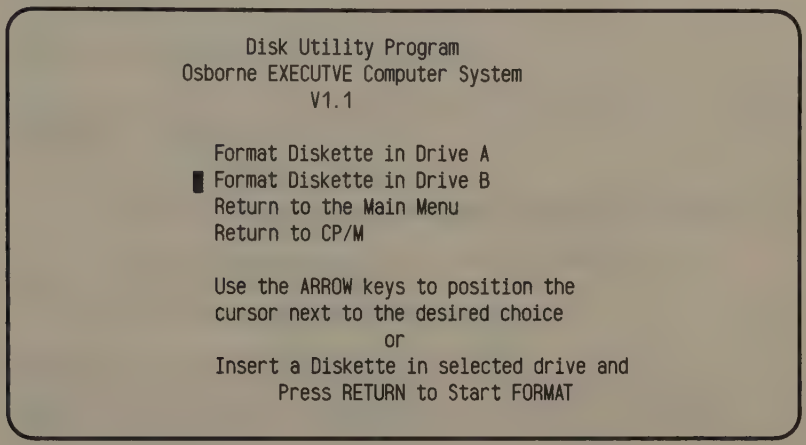
10. Remove the diskette from drive **B** and store it safely. It's ready for use as a data diskette.

This is a good time to format several diskettes for later use.

11. Press [RETURN]. Then insert another blank diskette in drive **B** and press [RETURN] again. Repeat this sequence several times.

Leaving FORMAT

When you've finished formatting, press RETURN. This displays the screen in Step 7:



Use the ARROW KEYS to position the cursor next to **Return to CP/M**.

Press RETURN to exit from the COPY program and display the **A>**. You can continue on to the next chapter or stop at this point.

Remove any diskettes from the disk drives before turning OFF the computer.

Executive Summary

FORMATTING DISKETTES

Blank diskettes must be formatted for use in the computer. Formatting is part of the COPY program.

1. *Start from the* **Sign-On screen**.
2. Insert **System Disk** working copy in drive **A**.
3. Press RETURN.
4. When the **A>** appears, type COPY and press RETURN.
5. This message appears when the COPY program is loaded:

```
▌Copy Diskettes
 Format Diskettes
 RETURN TO CP/M
```

6. Use ARROW KEYS to position cursor next to **Format Diskettes**.
7. Press RETURN.
8. Insert blank diskette in drive **B**.
9. Press RETURN to format the diskette.
10. When screen displays "Format completed successfully," press RETURN. Repeat the formatting procedure as needed for additional diskettes.
11. To exit from COPY program, select **Return to CP/M** and press RETURN.

Note:

Formatting erases any data already on a diskette.

Conclusion

In this chapter, you've

- set up and begun operating the **Osborne Executive**
- made **working copies** of your program diskettes
- **formatted** data diskettes for later use.

This gives you the groundwork for the next chapter. It describes basic CP/M commands for handling data and manipulating files.

CHAPTER 2
CP/M Plus

Executive Summary

Chapter 2 CP/M Plus

This Chapter has basic information about CP/M Plus. It shows you how to use six commands built into the CP/M Plus operating system:

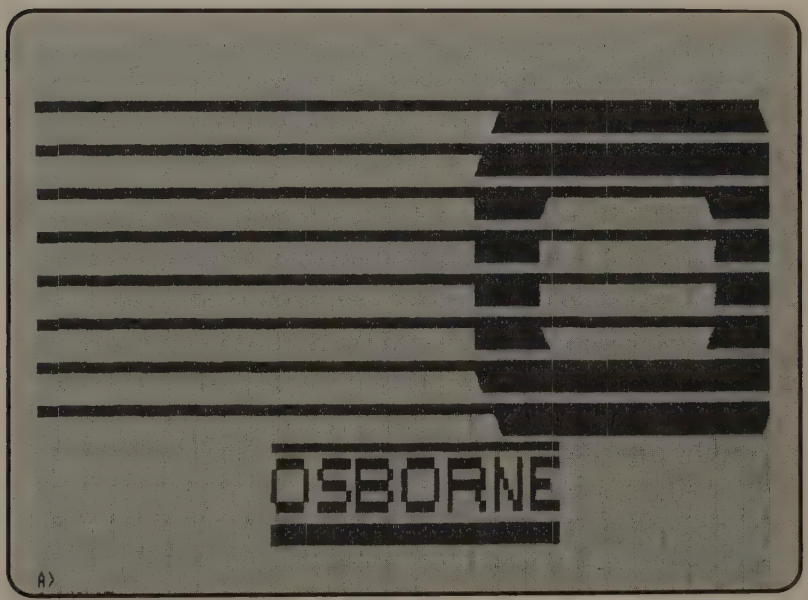
- DIR, to display a list of files on a diskette
- DIRSYS, a directory of **system files**
- USER, to assign **user areas** on diskette
- RENAME, which changes file names
- TYPE, to display text files on screen
- ERASE, to erase files from diskette

The CP/M Plus Operating System

This chapter describes the CP/M Plus Operating System and its built-in commands. The **operating system** is a master program which coordinates the computer's functions. The **built-in** commands are part of the operating system. They're tools for managing the Osborne Executive easily and efficiently.

Remove any diskettes from the disk drives. If the computer is ON, press the RESET button. If it isn't ON, turn it ON now.

Insert a **copy** of the CP/M Plus **System Disk** in drive **A**. Press [RETURN]. After a few moments you'll see the Osborne logo followed with the symbol "**A>**" at the bottom of the screen.



The **A>** symbol in the lower corner is called the **A prompt**. It means the Executive has loaded the CP/M plus operating system and is ready for instructions.

The operating system is stored in a special area called the **system tracks** on each program diskette. Except for the p-System diskette, the Osborne Executive's program diskettes have the CP/M operating system on their system tracks.

Entering Commands

Besides indicating that the Executive is ready for instructions, the **A>** also means disk drive **A** is the **active** drive. Any commands or instructions you give affect the diskette in the active drive. Drive **A** is always the active drive after you've first turned ON the computer or pressed the RESET button.

Commands are issued by typing them at the keyboard or pressing a specific sequence of keys. The **cursor** is the small, bright block which moves across the screen as you type.

In the following example, we'll issue a command to make drive **B** the active disk drive.

Insert the **working copy** of one of your program diskettes in drive **B**. When it's in place and the drive door is closed, type B :. On screen, these characters appear next to the **A>**, like this:

```
A>B:
```

Note:

If you make a typing error, use the LEFT ARROW key to backspace the cursor over it. Then type the correction.

When you're ready, press RETURN to carry out the command. A **B>** appears on screen to indicate that drive **B** is now the active one.

It's simple to switch back to **A**. Type A : like this:

```
B>A:
```

and press RETURN. The **A>** appears again. We'll continue to use **A** as the active drive.

What happens if you enter a command CP/M Plus doesn't recognize? Let's try it. Type the imaginary command S M I T H. It appears next to the **A>** on screen:

```
A>SMITH
```

Press RETURN to activate the command. The system doesn't recognize SMITH as a command and responds with:

```
A>SMITH
SMITH?
A>
```

Whenever you enter a command CP/M Plus doesn't recognize, it will respond with a question like this. You can then enter the correct command.

If you enter a valid command but omit information or if the command can't be carried out, the screen will display an **error message**. The *Osborne Executive Reference Guide* has a complete list of these error messages.

The error message itself usually asks what you wish to do next. As you become familiar with CP/M Plus, you'll learn how to handle these cases.

The CP/M Plus operating system has three types of commands:

- **Control Character Commands** issued by holding down the CTRL key and pressing the key(s) indicated.
- **Built-in Commands** which can be issued when the **A>** or **B>** prompt is on screen.
- **Transient Commands** contained in **command files** (designated .COM) rather than the operating system itself. Typing the command file name and pressing RETURN will carry out transient commands.

Control Character Commands

Most CP/M Plus compatible programs like WordStar and SuperCalc use **control character** commands. These commands are issued by holding down the **CTRL** key, then pressing a key for the specified command.

The caret (^) symbol designates the **CTRL** key. In printed text, a ^ followed by a letter means "hold down the CTRL key and press the letter indicated." For example, **^S** means "hold down CTRL and press **S**." **^L** means "hold down CTRL and press **L**."

The programs you've received with the Osborne Executive have specific control characters. They're described at appropriate parts of the *Osborne Executive Guides.*

Built-In Commands

CP/M Plus has six **built-in commands** available when the **A>** or **B>** is on screen. These are:

DIR - lists all files on the diskette in the active or specified drive.

DIRSYS - lists all system files on the diskette in the active or specified drive. System files are accessible from all user areas.

USER (0-9) - selects user area (0-9). User areas allocate diskette space when more than one person has access to the computer. Files of different types can also be grouped in their own area of the disk.

You are automatically in user area 0 unless you specify otherwise. Except for system files, files located within a particular user area can be accessed only from within that area.

RENAME newname.typ=oldname.typ - this command changes the name of a file located on the active or specified drive.

ERASE filename.typ - this command erases the named file from the active or specified drive.

TYPE filename.typ - displays the contents of the named file on screen. The file will scroll up the screen. The **^S** command alternately stops and resumes scrolling.

The **DIR**, **DIRSYS**, **TYPE** and **ERASE** commands also have options which increase their versatility. The options are available as **transient commands** stored in files rather than the operating system. Volume 4—*Operating Systems*, has a complete description of the transient commands.

We'll describe the built-in commands in the rest of this chapter.

DIR: The File Directory

A **working copy** of the CP/M Plus **System Disk** should be in drive **A**. Drive **B** should have a **copy** of one of the other program disks.

With the **A>** on screen, type D I R. Like this:

```
A>DIR
```

Press RETURN. You'll see this screen in response.

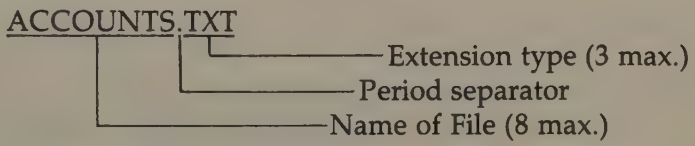
```
A>DIR
A: PIP   COM : DIR      COM : SHOW     COM : COPY     COM : COPYSYS  COM
A: SETUP COM : CHARGEN  COM
SYSTEM FILE(S) EXIST
A>
```

This screen is the **directory** of the diskette in drive **A**. It lists all files on the diskette.

Each line in the directory includes a letter identifying the active disk drive, a colon, the name of a file, a blank space, and the file type. Another colon separates each file on the line.

File Names

The files listed in the directory follow CP/M Plus **guidelines for file names**. File names can include up to eight letters or numbers followed by a period and an optional three-letter file type. The example below shows a text file named **ACCOUNTS**



ACCOUNTS is the actual file name. The optional characters **TXT** identify its file type. These are a few CP/M Plus file types:

.ASM — assembly language program file
.BAK — backup copy of a file
.BAS — BASIC program source file
.CAL — SuperCalc report file
.DAT — data file
.DOC — text or document file
.INT — CBASIC program file
.TXT — text or document file
.$$$ — temporary or incomplete file

Generally, you don't need to include a file type when naming data files.

To see the directory of files in drive **B**, you could switch to drive **B** with the **B:** command, then type **DIR** after the **B>**. However, it isn't necessary to switch control to the drive whose file directory you want to see.

Instead, you can specify the drive by placing an **A:** or **B:** at the end of the command. The A: or B: is called a drive identifer

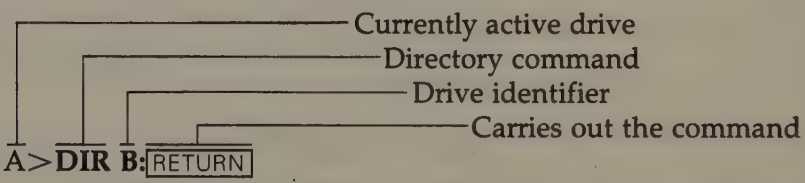
because it identifies the drive you want to access. You can use a drive identifier in most built-in commands.

For example, to see the directory of disk **B**, type:

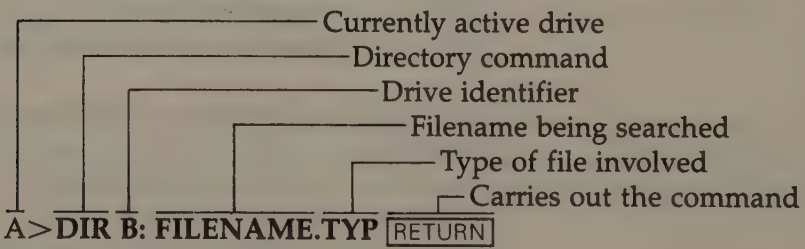
A> [D] [I] [R] [SPACE BAR] [B] [:]

```
A>DIR B:
```

Press [RETURN]. You'll see a list of files stored on the diskette in drive **B**. Here's what each entry on the command line means:



DIR will also show you whether a **specific file** exists on a diskette. To do this, type **DIR**, the drive identifier (**A:** or **B:**), and the name of the file you're interested in. Then press RETURN. The command has this general format:



If the file exists on the drive specified, its name appears on screen. If the file isn't found, you'll see this message:

```
No File
```

DIRSYS: System Files Directory

This message is at the bottom of the directory screen:

```
SYSTEM FILE(S) EXIST
```

There are two categories of files, directory and system. Most files are directory files which can be listed with the DIR command.

System files are handled differently. They can't be altered (changed, renamed, etc.) and are accessible from all user areas on a diskette.

Some files on the System Disk and on the other program diskettes are designated system files. You can use the SET command described in *Volume 4* to make files system or directory files.

To see a directory of system files, type DIRSYS after the **A>** and press RETURN. As with most built-in commands, you can append a drive identifier to the DIRSYS command. To see which system files are stored on a diskette in drive **B** simply type DIRSYS B:, then press RETURN.

USER: Defining Work Areas on Diskette

The **USER** command divides a diskette into areas which can be assigned to different computer users or types of files.

Each diskette has 16 user areas available. When you first turn ON the Executive, all the files you create or reference are in user area 0. To see how the USER command works, type:

A>USER SPACE BAR 1

and press RETURN.

A **1A>** prompt appears on screen instead of the **A>**. This means you're in user area **1**. Any files you create or reference until you assign a new user number, turn the computer OFF, or press RESET will be assigned to user area 1.

To see the directory of **user area 1**, type DIR and press RETURN. Since no files have been created in this user area, the directory is blank.

Return to user area 0 by typing USER SPACE BAR 0 and pressing
RETURN, like this:

1A>USER SPACE BAR 0 RETURN

RENAME: Changing a File Name

Use the RENAME command to change the name of a file. The format for this command is

A>**RENAME newname.typ=oldname.typ**

Be sure the diskette in drive **A** is a *copy* of the CP/M System Disk and that its write-protect notch isn't covered. We'll change the name of the SETUP file.

Type this command exactly as shown (except that it should all appear as one line on your screen):

A>RENAME SPACE BAR EXAMPLE.COM=
SETUP.COM

Note:

> *If you make a typing error, use the LEFT ARROW key to backspace the cursor over it. Then type the correction.*

When you're ready, press RETURN. This changes the name of the SETUP.COM file to EXAMPLE.COM.

For a directory listing of the renamed file, type:

A>DIR

and press RETURN. You'll see EXAMPLE.COM as one of the files in drive **A**.

To avoid confusion later on, let's change EXAMPLE.COM back to its original name. Type:

A>RENAME SPACE BAR SETUP.COM=
EXAMPLE.COM

and press RETURN. Check the file directory again by typing:

A>DIR

Then press RETURN.

The format for changing a file name in drive **B** includes the letter **B** and a colon, like this:

A>**RENAME B:newname.typ=oldname.typ**

followed by RETURN.

TYPE: Displaying a File on Screen

The **TYPE** command displays a text file's contents on screen. Text files usually have the file type **.DOC** or **.TXT**. The TYPE command has this format:

A>**TYPE X:filename.typ**

where **X:** designates the drive (**A** or **B**). Include this drive identifier only if the file you're displaying isn't in the active drive.

TYPE will display a file's contents one screen at a time. This message appears at the bottom of each screen:

```
Press RETURN to continue
```

Pressing RETURN will display the next screen of text. To stop listing the file on screen, enter **^C**. This cancels the TYPE command and returns you to the **A>** prompt.

ERASE: Erasing Files From a Diskette

The **ERASE** command erases a file from diskette. The format for ERASE is:

A>**ERASE X:filename.typ**

followed by RETURN.

The **X:** again designates the drive (**A** or **B**). Include this identifier only if the file you're erasing isn't in the active drive.

DIR and ERASE for Multiple Files

The **DIR** and **ERA** commands can be used for groups of files as well as single ones. This means you can erase all files of a certain type, for example, with one ERA command rather than several.

CP/M Plus uses **wildcard characters** to include several files in one command. Of the built-in commands we've described so far, only DIR and ERASE use these characters. There are two wildcard characters, the asterisk (*) and the question mark (?).

The asterisk substitutes for file name and/or type in a DIR or ERASE command. For example, the expression ***.COM** refers to all .COM files on a diskette.

In a file name, the question mark substitutes for a character. For example, the expression **S???????.COM** refers to all .COM files beginning with the letter S. The question marks substitute for any seven characters in this expression.

Here are two examples of the asterisk (*) in an ERASE command:

A>**ERA *.TXT**

This command will erase *all* **text** files on the diskette in drive **A**.

The following command erases *all* files named **ACCOUNT** in drive **A**.

A>**ERA ACCOUNT.***

In the example below, the question mark (**?**) substitutes for one character. This command erases *all* document files beginning with the letters LEDG:

A>**ERA LEDG?.DOC**

Command Abbreviations

When typing a built-in command, you can use these abbreviations:

DIRS for DIRSYS
USE for USER
REN for RENAME
ERA for ERASE
TYP for TYPE

Conclusion

The built-in commands are the starting point for handling files with CP/M Plus. The next Chapter describes another set of commands for manipulating files and the operating system itself.

CHAPTER 3
Utility Commands

Executive Summary

Chapter 3 Utility Commands

This chapter describes utility programs which prepare the computer and diskettes for various tasks. This chapter describes how to:

- Copy the CP/M Plus Operating System onto a diskette
- Program function keys
- Define the screen display
- Prepare the **Executive** to communicate with another device
- Create keyboard characters

Transient Commands

All CP/M Plus commands are associated with program instructions which tell the computer what to do. These instructions can be stored within the operating system or as a file on diskette. **Built-in** commands are stored within the operating system. **Transient** commands use program files stored on diskette. These transient command files always have the file type **.COM**.

To use a transient command, enter its file name and press RETURN. It's not necessary to include the file type .COM when entering the command. The Executive will load and carry out the instructions in the program file you've named. Most files on the program diskettes are command (.COM) files. This includes program files such as WordStar (WS.COM) and SuperCalc (SC.COM). To run these programs, enter the letters to the left of the period in their file name. Then press RETURN. To run a program stored on a diskette other than the active one, enter the letter of the drive and a colon (:) before the file name. Then press RETURN.

Note:

Before continuing with this Chapter, check that a **copy** *of the CP/M Plus System Disk is in drive* **A** *and the* **A>** *is on screen. A formatted work diskette should be in drive* **B**.

SHOW: Checking Diskette Space

SHOW is a transient command which displays how much storage space is available on a diskette. To see how much space is available on the diskette in drive **A**, type:

A>SHOW

and press RETURN. The system responds with

```
RW, Space: ##K
```

Diskette space is shown as the number of kilobytes, abbreviated by the letter **K**. A kilobyte is equivalent to 1024 characters or bytes. For example, a number or letter of the alphabet occupies one byte of diskette space. The letters **RW** stand for "Read/Write." It means that data can be written onto and read from the diskette.

Generally, you'll want to keep track of the space in drive **B** since you'll usually store files there. This is the SHOW command for drive **B**:

A>**SHOW B:**

followed by RETURN.

It's good practice to check the space available on a diskette before using it to store files.

PIP: Copying Individual Files

PIP is a very versatile command for copying single files between diskettes or from one place to another on the same diskette. This is the PIP command sequence:

1. Type P I P after the A> prompt and press RETURN. The screen displays an asterisk (*) in response. This is the PIP prompt. It means PIP is ready for an instruction.
2. The diskette with the file you're copying is in drive **A**. You'll make the copy onto the diskette in drive **B**.
3. Type:

***B:=A:filename.typ**

where **filename.typ** is the name and type of the file you're copying. Press RETURN to copy the file onto the diskette in drive **B**.

To transfer a group of files from drive **A** to the diskette in drive **B**, you can use the CP/M Plus wildcard characters. The asterisk (*) substitutes for a file name or file type. The question mark (?) substitutes for any character.

The following PIP command, for example, copies all files with the .TXT file type:

***B:=A:*.TXT**

The example below copies all files with the specified file name, regardless of file type:

B:=A:filename.

In the next example, PIP will copy all files whose first four letters are ACCT:

B:=A:ACCT????.

Finally, this PIP command copies **all** files from the diskette in drive **A** to the one in drive **B**.

B:=A:.*

Note:

> *In the PIP command, always specify the destination diskette* **before** *the equals sign* **(=)** *and the source* **after** *it.*
>
> *To use PIP, the destination diskette must already be formatted. PIP will not copy the CP/M Plus Operating System itself.*

To leave the PIP program, enter a **^C**

(hold down the CTRL key and press **C**). The **A>** prompt will appear on screen for your next instruction. Use the DIR command at that point to check that the file(s) have been transferred.

COPYSYS: Copying the Operating System

COPYSYS is the utility which copies the CP/M Plus Operating System itself from one diskette to another.

The program diskettes supplied with the **Osborne Executive** already have an operating system on them (except Personal Pearl). When you use the COPY command to duplicate one of these program diskettes, the operating system is also copied.

Data diskettes usually don't need an operating system on them. Besides creating customized program diskettes, you'll need to copy the operating system only when you purchase software from Osborne Computer Corporation. The program diskettes sold by Osborne **do not** include the CP/M Plus Operating System. You'll need COPYSYS to place the operating system onto these program diskettes.

Each diskette has an area reserved for the CP/M Plus Operating System. COPYSYS places the operating system and a special system file, CPM3.SYS, onto this area without effecting anything else on the diskette.

Warning!

The CP/M Pluse Operating System and the system file CPM3.SYS take up 21K of space on a diskette. As a result, you will have only 165K of usable read/write space on your diskette after performing the COPYSYS transfer

We'll go through the COPYSYS sequence to copy the operating system onto the diskette in drive **B**.

1. A **copy** of the CP/M Plus System Disk should be in drive **A** and a double-density formatted, blank diskette in drive **B**.
2. Type COPYSYS after the **A>** prompt on screen:
   A>[C][O][P][Y][S][Y][S]

Note:

If you make a typing error, use the LEFT ARROW key to backspace the cursor over it. Then type the correction.

3. Press RETURN to display this screen:

```
Operating System Copy Program
Osborne EXECUTIVE Computer System
V1.0

Get System from Drive A
Get System from Drive B
Return to CP/M

Use the ARROW KEYS to position the
cursor next to the desired choice.
or
Insert diskette in Drive A and
Press RETURN to READ SYSTEM
```

4. The operating system is on the diskette in drive **A**. If it's not there already, use the arrow keys to position the cursor next to **Get System from Drive A**.
5. Press RETURN to activate drive **A**. After a moment, you'll see this message:

```
System read successfully.
Press RETURN to continue.
```

This means the operating system is ready for copying to the destination diskette.

6. Press RETURN to display the next screen:

```
Operating System Copy Program
Osborne EXECUTIVE Computer System
V1.0

Save System on Drive A
Save System on Drive B
Return to CP/M

Use the ARROW KEYS to position the
cursor next to the desired choice.
or
Insert diskette in Drive B and
Press RETURN to SAVE SYSTEM
```

7. We're making the copy onto drive **B**. Use the arrow keys to position the cursor next to **Save System on Drive B**.

8. Press RETURN. When the operating system has been copied, this message appears:

```
System copied successfully.
Press RETURN to continue.
```

If an operating system is already on the diskette you're copying to, this is the message you'll see instead:

```
CPM3.SYS is already on drive B.
Do you want to overwrite it (y/n)?
```

Pressing **Y** will replace the operating system on the destination diskette with the one you're copying. Pressing **N** will cancel copying and return you to Step 6.

9. After the operating system's been copied, press RETURN. This returns you to Step 6. Follow the instructions on that screen to make additional copies or to exit to CP/M Plus.

SETUP

The **SETUP** utility has several uses. It can:

- prepare the **Executive** to work with external equipment such as a printer
- program function keys
- specify optional operating features.

SETUP specifications are recorded in an area of the operating system called the "system."

Using SETUP is a three step process:

First, **get the system** by specifying the location of the operating system being SETUP. The location can be either disk drive or the computer memory.

Second, **setup the system** by specifying features on the SETUP screens.

Third, **save the system** by storing your SETUP choices either on disk or in computer memory.

If you save the system to a disk, that disk will have the settings you've selected until you change them again. If you save the system to memory, the settings remain in effect only while the computer remains ON.

Here's the SETUP sequence:

1. Type S E T U P after the **A>** prompt and press RETURN. This screen appears in response:

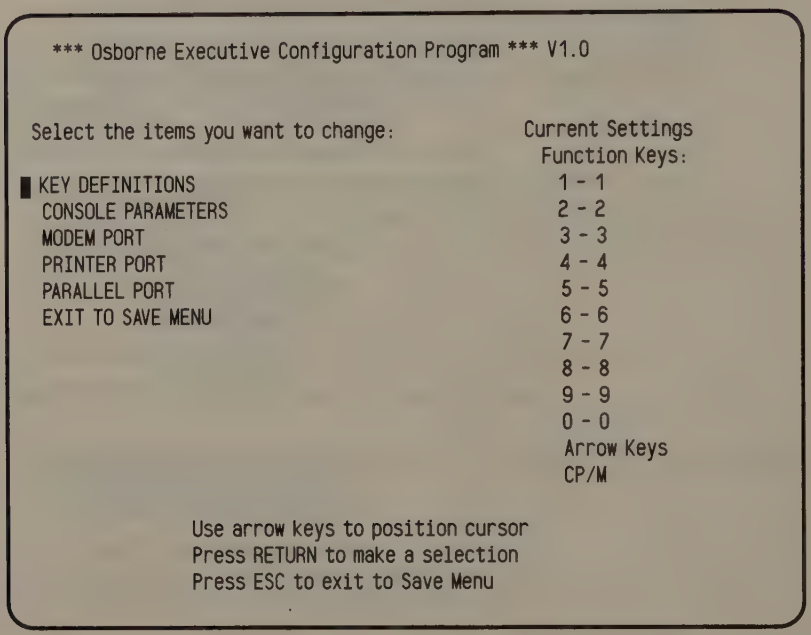
```
*** Osborne Executive Configuration Program *** V1.0

          Select source for configuration

               FROM MEMORY
               FROM DRIVE A
               FROM DRIVE B
               EXIT TO CP/M


          Use arrow keys to position cursor
          Press RETURN to make a selection
          Press ESC to exit from Setup
```

This screen asks you to specify the location of the operating system you want to SETUP. The operating system can be on a diskette in either disk drive or in memory.

When setting up a system for the first time, it's not too important which source location you select. Having a choice of source locations makes it convenient to get a previously setup system and see what settings are in effect.

2. At the moment, we'll use memory as the source of the system. Position the cursor next to FROM MEMORY if it's not there already. Then press RETURN.

   When the system has been taken from memory, this screen appears:



The left side of this screen lists the items which can be configured or Setup. Current settings for each item are shown on the right.

Use the arrow keys to move the cursor through the list of items. As you move, the right side of the screen changes to show the operating settings for each item.

In the next several pages we'll go through each item on the SETUP screen.

Programming Function Keys

The ten numeric keys and the four arrow keys on your keyboard can be programmed with a series of characters or

commands. Programming one of these keys means simply to define some function which is carried out when you hold down CTRL and press that key.

Position the cursor next to **KEY DEFINITIONS** on the SETUP screen. The characters currently associated with each numeric and arrow key are shown in the "Current Settings" column. On the screen shown above the numeric keys are assigned their own values.

Keep the cursor at **KEY DEFINITIONS** and press RETURN. This moves the cursor to the **Function Keys** entry on the right side of the screen. In this example, we'll program one of the number keys.

With the cursor at **Function Keys**, press RETURN. The screen changes to this one:

```
   *** Osborne Executive Configuration Program *** V1.0

Select the function keys you want to change
▌ 1 - 1
  2 - 2
  3 - 3
  4 - 4
  5 - 5
  6 - 6
  7 - 7
  8 - 8
  9 - 9
  0 - 0
          229 character places remaining


                Use arrow keys to position cursor
                Press RETURN to make a selection
                Press ESC to exit to previous menu
```

We'll program the **5** key to display the drive **B** file directory.

First, use the arrow keys to move the cursor down to **5 - 5**. Then press [RETURN]. A message appears asking us to define what we want the key to do:

```
Enter function key definition:
5:
```

Type **DIR B**, like this

5: [D] [I] [R] [SPACE BAR]

If you make a typing error, use the left arrow key to backspace over it. Then type the correction. When the entry's correct, press [RETURN]. The line above changes to:

5: **DIR B:**<RET>

<RET> means a RETURN will automatically be issued after the DIR command.

You can include as many characters as you wish for a particular key, but the total for all the keys can't exceed 242 characters. The message on screen indicates that 223 character places are left after we've programmed the DIR command:

```
223 character places remaining
```

After programming a key, hold down [CTRL] and press [RETURN]. If you decide not to program a key you've selected, hold down [CTRL] and press [ESC]. This returns the cursor to the list of keys and shows that DIR B: command is associated with the **5** key.

As you use the **Osborne Executive**, note which commands or sequences are the most frequently used. You can program the function keys for each program diskette to carry out these commands automatically. It's a convenient and efficient technique.

At the moment, though, press [ESC] to return to the SETUP screen.

Setting Up the Console

The next item on the SETUP screen is **CONSOLE PARAMETERS**. Use the arrow keys to position the cursor next to it. The options on the right side of the screen include type of cursor, how the screen will look, and whether the keys will click when they're pressed. The video monitor frequency and the console command characters can also be changed.

The screen looks like this:

```
*** Osborne Executive Configuration Program *** V1.0

Select the items you want to change:        Current Settings
                                            Cursor type:
  KEY DEFINITIONS                             STEADY BLOCK
▌ CONSOLE PARAMETERS
  MODEM PORT
  PRINTER PO                                Background atributes:
  PARALLEL PORT                                  NORMAL
  EXIT TO SAVE MENU

                                            Key Click:
                                                 OFF

                                            Monitor Frequency:
                                                 60 Hz

                                            Initialization String:
                                                 <NONE>

                    Use arrow keys to position cursor
                    Press RETURN to make a selection
                    Press ESC to exit to Save Menu
```

Press RETURN (or the right arrow key) to move the cursor to the Current Settings column. The first option allows you to specify the cursor type. Press RETURN (or the right arrow key) to see the choices available:

```
   *** Osborne Executive Configuration Program *** V1.0

Select cursor type:

                                              Current Cursor Type
Invisible                                          Steady Block
    Blinking Block
    Steady Block
    Blinking Underline
    Steady Underline



                  Use arrow keys to position cursor
                  Press RETURN to make a selection
                  Press ESC to exit to Save Menu
```

The cursor is currently defined as a "Steady Block." If you prefer another type of cursor (i.e., Blinking Block), press the down arrow key until your choice is highlighted, then press RETURN. The type of cursor you've chosen will be listed under the "Current Cursor Type" at the right of the screen. Press ESC (or the left arrow key) to continue on to the next option in the "Console Parameters" selection.

Press the down arrow key once to move to the "Background Attributes" option. This option allows you to choose amber characters on a black background (normal), or black characters on an amber background (reverse).

Press RETURN to change the current setting from NORMAL to REVERSE. Press RETURN again to switch it back to NORMAL.

To move to the next option "Key Click," press the down arrow key once. Key click is a sound made whenever a key is pressed. Press [RETURN] if you wish to turn this option ON.

The next option "Monitor Frequency" allows you to switch the monitor frequency between 60 and 50 Hertz. You may need this option when travelling outside the United States.

The last option specifies an initialization string of hexadecimal code. This string will be output to the console when it is initialized and can be used to specify all the console options offered through the SETUP program and many more.

Console commands and their functions are listed in the *Osborne Executive Reference Guide*. It's not necessary to modify these settings at this point. Press [ESC] (or left arrow) to return to the item list on screen.

Connecting a Printer or Other Device

The Modem, Printer, and Parallel port selections are used to Setup the Executive to communicate with an external device such as a printer. Since the SETUP options for all three ports are very similar, we'll only go into detail about the printer port. Use the down arrow key to position the cursor next to the "Printer Port" selection. The options available and their current settings are shown to the right.

Note:

To set up the computer to communicate with an external device like a printer, check the device's Operator's Manual for required settings. If you're not sure about the settings, check with your Authorized Osborne Dealer.

With the cursor at the Printer Port selection, press the RETURN key (or right arrow key). The cursor will move to the "Baud Rate" option at the right of the screen. No baud rate is currently implemented.

Press RETURN (or right arrow) to display the baud rate options:

```
*** Osborne Executive Configuration Program *** V1.0

Select Baud Rate:
                                        CURRENT BAUD RATE
      50                                      NONE
      75
     110
   134.5
     150
     300
     600
    1200
    1800
    2400
    3600
    4800
    7200
    9600
   19200

                Use arrow keys to position cursor
                Press RETURN to make a selection
                Press ESC to exit to Save Menu
```

Baud rate is the speed at which information is transmitted through the modem or printer connectors. Most printers accept data at 1200 baud or 120 characters (letters, numbers, etc.) per second. However, a wide range of baud rates is available.

Use the arrow keys to position the cursor next to the appropriate baud rate. Then press RETURN. The specified baud rate appears on the right of the screen. Press ESC (or left arrow) to move to the next option.

The "Protocol" option specifies how data is transmitted and received. Press the down arrow key once to move the cursor to this option. Notice that "No Protocol" is currently specified. Press RETURN to see the possible settings:

```
*** Osborne Executive Configuration Program *** V1.0


Select Protocol
                                  Current Protocol
  No Protocol                     No Protocol
  XON/XOFF
  ETX/ACK




                  Use arrow keys to position cursor
                  Press RETURN to make a selection
                  Press ESC to exit to Save Menu
```

There are three protocols available. Nearly all serial printers use one of these three. Diablo printers, for example, can use either "No Protocol" or "XON/XOFF." NEC and QUME printers generally use "ETX/ACK" protocol.

To switch to one of these protocols, move the cursor to your choice and press RETURN. Then press ESC (or the left arrow key) to move to the next option.

The "Device Selection" option tells the system which type of device you wish to communicate with. Place the cursor on this selection and press RETURN to see the choices:

```
   *** Osborne Executive Configuration Program *** V1.0

Select the type of device you plan to attach to this port

                                        CURRENT DEVICE SELECTION
PRINTER (LST:)                               No Device
TERMINAL (CONIN:/CONOUT:)
OTHER DEVICE (AUXIN:/AUXOUT)
NO DEVICE



                  Use arrow keys to position cursor
                  Press RETURN to make a selection
                  Press ESC to exit to previous menu
```

One of the **Executive's** features is that you can attach any device to a particular port as long as you identify the device for the computer.

If you'll use a port for a printer, position the cursor next to the "PRINTER" option and press RETURN. If you intend to connect a modem here, specify the "OTHER DEVICE" option. To attach a terminal to this port, assign it to the "TERMINAL" option. CP/M Plus codes for each of these devices are shown in parentheses.

If you assign a particular device and don't have it connected when outputting data to the port, the system will stop functioning and wait for the device to be connected. In this case you'll see the following message:

```
BIOS error device - not ready, unassign this device (Y or N)?
```

If the device is available and you want to try communicating with it again, press [N]. If the device isn't available, you'll have to "unassign" the device by pressing [Y].

At this point, leave the device unassigned as "NO DEVICE." Press [ESC] (or left arrow key), then press the down arrow key to move to the "Initialization String" option.

The "Initialization String" option specifies the coded message which some printers need before they will print. This option can also specify printer features such as compressed print. The printer initialization strings and their associated functions should be listed in the Operating Manual for your printer.

Press [ESC] (or left arrow) to move the cursor to the selection portion of the screen. The next item listed is "PARALLEL PORT". The options for this selection are similar to those for the modem and printer port. However, there is no baud rate and only two protocols: Centronics and IEEE. Select one by pressing [RETURN].

The Centronics protocol is used to communicate with many printers. The IEEE protocol is used to connect to devices that use this standard. An option for addressing a particular IEEE device number is available when this protocol is selected. Just as there are different methods of serial communication (ETX/ACK, XON/XOFF, etc.), there are variations in the way different IEEE devices communicate.

Saving the System

After you complete the setup, position the cursor on the last selection "EXIT TO SAVE MENU" and press [RETURN]. The settings you have specified can now be recorded within the operating system you choose.

```
*** Osborne Executive Configuration Program *** V1.0


     Select destination for configuration

          TO MEMORY
          TO DRIVE A
          TO DRIVE B
          EXIT TO CP/M


        Use the arrow keys to position cursor
        Press RETURN to make a selection
        Press ESC to exit from SETUP
```

At this point you can save the newly modified system on a diskette in either drive or in memory.

Usually, you'll save the system to a diskette. That way, whenever you insert the diskette containing the operating system and press RETURN, the Executive will function using those settings. This saves you the trouble of having to use SETUP every time you turn the machine ON.

At the moment, though, save the system you have just setup to memory. The settings will remain in effect only as long as the computer is turned ON.

The cursor should already be next to the "TO MEMORY" option. Press [RETURN]. You'll see this message:

```
Configuration saved to MEMORY
```

Now press [ESC] to leave the SETUP program. If you picked a different cursor or screen type, it will now be in effect.

If you setup the system for your printer, you may want to see if it works. A simple test is to hold down the CTRL key and type the letter P. Now if you issue a DIR command, the directory on the screen should also be output to your printer.

CHARGEN: Creating Characters

The program called CHARGEN on the System Disk allows you to design your own characters. This character generating program is provided for those who want to design special characters, use a language other than English, or design graphics characters.

The Executive comes with two character sets, the "Main Character Set" and the "Alternate Character Set." Each character set is a collection of 128 characters in a particular style. The main character set normally used when the computer is turned ON is standard English. The alternate set is also composed of standard English characters until you change it.

Both character sets are stored in the operating system. When you turn the computer ON, it reads the operating system and stores the character sets in a special area of memory. Although the main character set is the one is usually used, you can replace it with the alternate character set using CHARGEN.

To begin creating characters, type CHARGEN and press RETURN. This screen appears in response:

```
        Osborne Executive Character Font Generator V1.0

This program allows you to edit a character set in memory and
store it on various media.

     The working character set is a new set

Do you want to:

     1 - Read the system tracks into the character set
     2 - Read a file into the character set
     3 - Edit the character set
     4 - Write the character set to the system tracks
     5 - Write the character set to a file
     6 - Write the character set to the font RAM
     7 - Exit the program

          Enter your choice (1 - 7) ▌
```

Selecting a Character Set

When you start the CHARGEN program you have a choice of three options. You can create an entirely new character set, retrieve the main or alternate character set from the system tracks of a diskette, or get a character set that you earlier saved in a file.

To create a new character set press [1] and begin designing characters. To read one of the character sets from the system tracks on the diskette in drive **A** press [1]. You'll see this menu:

```
        Osborne Executive Character Generator V1.0

This program allows you to edit a character set in memory and
store it on various media.

    The working character set is a new set

Read from the System Tracks

Do you want to:

     1 - Use the Main System set
     2 - Use the Alternate System set
     3 - Exit to the Main System

     Enter selection
```

The menu above gives you a choice of the Main or Alternate character set. At this point, choose the Main character set (the set normally used) by pressing [1]. Next, you're asked to select the drive where the System is located:

```
Enter drive (A, B, or <RETURN> to exit)
```

To get the system from the diskette in drive **A**, press the letter **A**. The **A** drive will activate as the Main character set is read from the system tracks of the diskette located there. The following message tells you what's happening:

```
Reading Main system from drive A
```

When, the system is read from drive **A**, the message changes to this:

```
Main System Set read from A:
```

This means the main character set from drive **A** will be used:

```
The working character set is Main System Set A:
```

Press [3] to return to the main menu.

When you're specified which character set you want, you can start designing or altering the characters in that set.

Press [3] at the main menu to begin editing the working character set. Here's what you will see:

```
                Osborne Executive Character Font Generator

                The working character set is Main System Set A:
                     00 is the HEX value of the current character
                     [ ] is the current character

                          Character Selection Menu

                     H = Entry by HEX value          <ESC> - Done editing
                     D = Entry by decimal value
                     C = Enter the character

                     Select Character Entry Method

Character [ ] !"#$%&'()*+,-./0123456789:;<=>?
   Set    ©ABCDEFGHIJKLMNOPQRSTUVWXYZ [/]_^`abcdefghijklmnopqrstuvwxyz {|} [ ]
```

This is the work area you can use to examine, design, or alter the characters in a particular set. The character set on the top line is the one you're currently using.

Selecting a Character

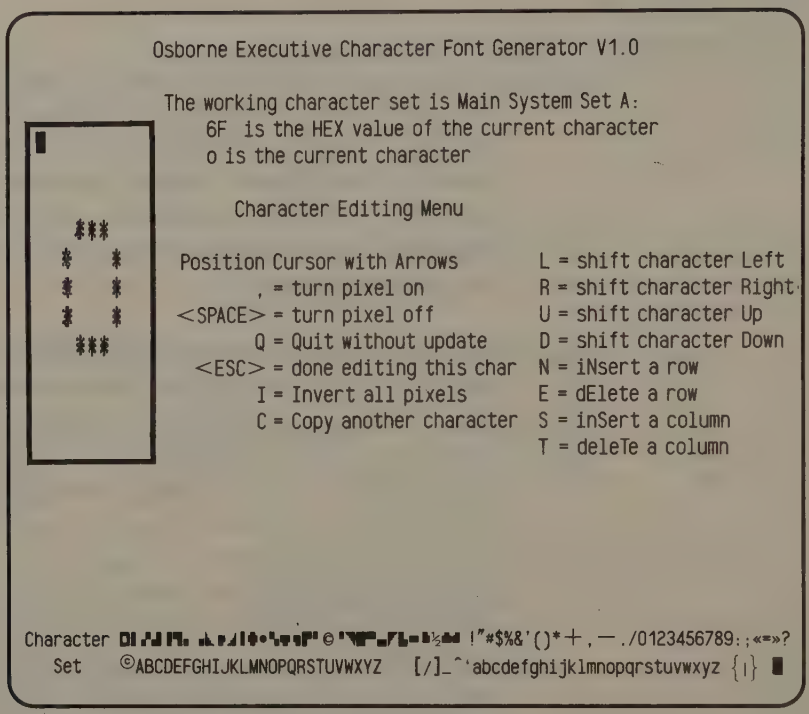
The second line highlights the hexadecimal value of the current character. The third line shows the actual character. Here, the first Hex value is 00, and the character associated with the value is a box graphic character. Each character is assigned a position in the character set associated with a hexadecimal value.

Below these three lines of is the character selection menu. The large rectangular box to the left of the menu is where the actual characters are created or edited. All characters are "drawn" in an 8-by-10-dot matrix within this box. At the bottom of the screen there's a horizontal box which lists the characters in the current character set.

The character selection menu provides various methods of selecting the location of a character. You can select the location with its Hexadecimal or Decimal value by pressing H or D respectively. These values and the characters presently associated with them are listed in the *Osborne Executive Reference Guide.*

The easiest way to select a character is to press C, then type the associated character from the keyboard. This option works well for a character set which corresponds to the keyboard.

We'll use this method to edit the Main character set. Press [C], then press [o] as the character to edit. The screen will flicker slightly and the box to the left of the screen will fill with asterisks representing the pixels (dots) that make up the letter "o":



Creating or Editing a Character

The Character Selection Menu has been replaced by the Character Editing Menu. The second line on screen shows the Hexadecimal value 6F associated with the lowercase o. The Menu provides all commands needed to create or edit a character within the box at the left of the screen.

Characters are composed by turning ON or OFF a particular pattern of pixels or dots. Asterisks symbolize pixels currently turned ON. Use the arrow keys to position the cursor in the 8-by-10 matrix of pixels. To turn a pixel ON, place the cursor in position and press period (.). This causes an asterisk to appear at the cursor position.

Add a dot to the letter o by positioning the cursor and pressing period. After you turn a pixel ON, the cursor moves in the direction of the last arrow key you pressed. To turn a pixel OFF, place the cursor in position, then press the spacebar.

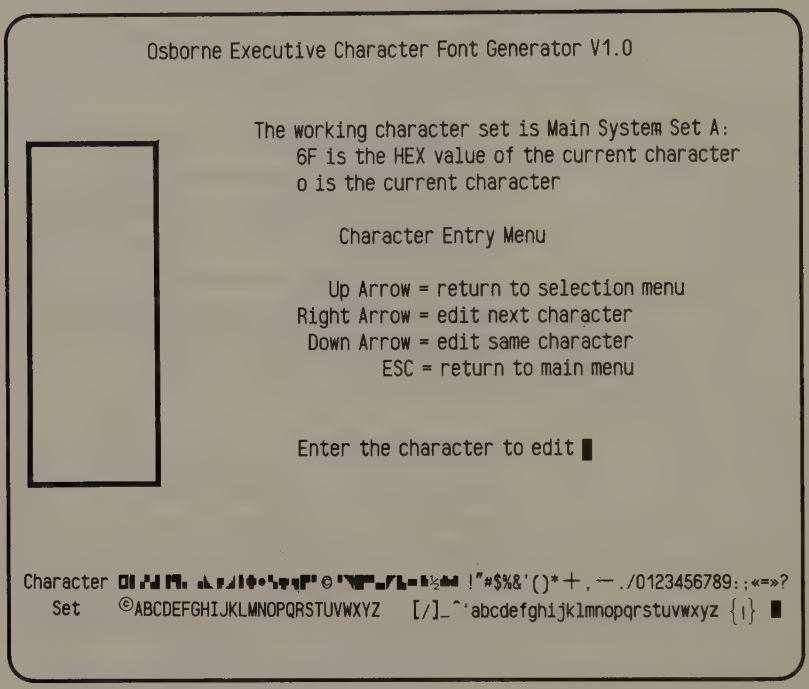
Besides turning pixels ON and OFF, the options on the right side of the character editing menu allow you to manipulate a group of pixels. For example, you can shift the entire 8-by-10 array by using one of the shift options. To see this work, press [L] to move the character presently in the box to the left. An R moves the character to the right, U moves it up, and D moves it down. If you shift a character far enough it will wrap around from the other side of the box.

In addition to shift commands, there are four commands that cause a blank row or column to be inserted or deleted at the position of the cursor. Place the cursor in the center of the character and press [N] to split the character horizontaly, then press [E] to delete the row you just inserted. Next press [S] to insert a column and split the character vertically, then press [T] to delete the blank column.

When you're finished altering one character, you can continue to the next. There are three options available:

- Pressing ESC stores the character as it currently looks, and provides options for selecting the next character.
- The C option allows you to select another character. A message will ask you to enter the character to copy. When using this option, you must specify the character in the same way you did for the first one (i.e., hexidecimal, decimal, or by character).
- To continue with another character without storing the one you've just created, you can press Q. This provides the same options for selecting the next character as does the ESC option but does so without keeping the present character.

Press [ESC] now and observe the screen:



From this menu, you can either return to the selection menu, edit the next character in sequence, edit the same character again, or return to the main menu. All of these selections are made by pressing the indicated arrow key. Press [ESC] to return to the main menu.

Saving the Character Set

The next step is to record this newly modified character set. There are three choices. You can write the character set to a file on a diskette, write it to the operating system on a diskette, or write the character set into the font RAM.

Write the character set to a file if you wish to save it on disk. In this way, you can store as many character sets as needed. When you use this option, a message asks you for the name of the file and the drive where it should be written. A CHR file type will automatically be assigned.

If you write the character set to the operating system, the newly created character will be accessible when you start the computer using that program diskette. When you select this option a message asks whether to write the character set to the area on the system tracks where the Main or Alternate character set is stored.

The option of writing to the font RAM allows you to place the character set directly in memory. It can be accessed there until the computer is turned OFF. Press [6] and you'll be asked whether to write the character set to the area of memory which contains the Main or Alternate character sets:

```
        Osborne Executive Character Font Generator V1.0

This program allows you to edit a character set in memory and
store it on various media.

    The working character set is Main System Set A:

Write to the Font RAM

Do you want to:

     1 - Use the Main System set
     2 - Use the Alternate System set
     3 - Exit to the Main System

     Enter selection
```

We'll send the character set to the Main set so that the new characters will be in effect while the computer is ON. Press [3] to return to the Main menu, then press [7] to leave the CHARGEN program.

Any characters that you type should appear as you modified them and will remain that way until you press RESET or turn the computer OFF.

Conclusion

In this Chapter you've seen how to specify the **Executive's** operating features using CP/M Plus. Knowing how to copy the operating system onto your program diskettes and to configure the computer with the SETUP program are essential steps. They prepare you to continue with any of the other *Osborne Executive Guides.*

Graphic Characters

00
01
02
03
04
05
06
07
08
09
0A
0B
0C
0D
0E
0F
10
11
12
13 ©
14
15
16
17
18
19
1A
1B
1C
1D ½
1E
1F
20

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