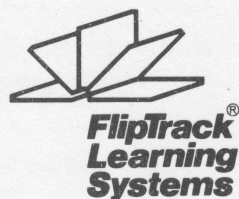


HOW TO OPERATE THE APPLE III[®]

*Written by Howard Manthei & Ann Baldrige
& Produced by Lee McFadden*

Operator's Guide



HOW TO OPERATE THE APPLE III®

By Howard Manthei & Ann Baldrige
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FlipTrack® Learning Systems

Glen Ellyn, IL 60137

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If replacement components are not available from your local dealer, write FlipTrack Learning Systems, P.O. Box 711, Glen Ellyn, IL 60137, for pricing information.

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INTRODUCTION

You are about to sit down with a personal tutor who will "talk you through" the essential operations of an Apple /// computer. In four "hands on" training sessions of a couple of hours each, you will learn how to:

- Set up your computer and use each special key
- Run both Apple /// and Apple II programs
- Copy diskettes and files
- Create subdirectories
- Modify programs
- Install "drivers" for your peripherals
- And much more!

No Programming Required

You don't need to be a programmer to operate a computer, any more than you need to know how to design a car to drive one. Our purpose is to put you in the driver's seat of your Apple computer so that you can confidently use existing programs . . . enter your own data . . . organize your files . . . and protect them. If you later decide to take up programming, you'll have the necessary background for doing so.

Teach Yourself. Train Others.

This course is designed for the first-time computer user and assumes no technical knowledge whatsoever. An experienced computer user will find it useful for review, for an introduction to the Apple ///'s Sophisticated Operating System, or for training others, such as staff, colleagues, clients, customers, students or family members.

Hardware Requirements

System requirements include an Apple /// computer with at least one disk drive, the System Utilities diskette and the Apple II Emulation Mode diskette. Your video monitor can be either color or black and white. A second disk drive is optional, as is the ProFile hard disk system and a printer.

The only other requirement is an audio cassette player, which will be used strictly for spoken voice instruction. No computer hookup is needed. Our unique FlipTrack format works best if your player has a digital counter, but even that is optional.

Why Audio Instruction?

Simple. It's human, It's interactive. It's multi-sensory. It's self-paced. It's patient. And it works!

Unlike a *manual*, an audio cassette delivers carefully sequenced instruction in conversational language. Unlike a *printed tutorial*, it leaves your eyes free to concentrate on the screen and keyboard. Unlike a *lecture*, it lets you learn by actual practice on your own machine. Unlike a *live tutor*, it lets you learn without embarrassment and at your own convenience. Unlike a *teaching diskette*, it leaves your computer free to be the object of instruction. And unlike *video*, it is inexpensive.

The FlipTrack® Difference

Best of all, our patented FlipTrack cassette format can adjust to a variety of special interests and configurations. For example, optional instruction is available at a flip of the tape for users with a second disk drive, the ProFile hard disk system, or a printer.

You save time and avoid confusion by learning just the procedures that relate to your system, or listening to just the topics that interest you. The choice of whether to follow a "full" or "fast" track through the program is always yours.

The "File Cabinet" Program

File Cabinet /// is a small, general purpose data base management system we include as a teaching demonstration you may find personally useful. The diskette also contains files you will use at key points in the course.

The Operator's Guide

Keep this handy booklet near your computer, and use it as you would a "cookbook". The key points from each lesson are briefly outlined for your review and *indexed* for quick access to important terms, commands and procedures. In effect, we've done your notetaking for you.

The Quizzes

An optional quiz concludes each lesson to provide reinforcement and a practical self-check. If you'd like to try the quiz before taking a lesson, you can do so by turning the tape over and beginning on the back side.

How to Get Started

Insert Tape 1 into your cassette player, and push PLAY. Have fun!

1

Key Ideas from Lesson 1:**GETTING ACQUAINTED**

System Requirements: Apple /// Computer
 Monitor (*either color or B&W*)
 System Utilities Diskette
 "File Cabinet" Diskette

Options: External Floppy Disk Drive
 ProFile Hard Disk System
 Printer
 System Utilities Data Disk

Setting Up the SystemFlipTrack
Option

- With power switch off, plug power cord into Apple and then into grounded, 3-prong wall socket.
- Attach monitor to B/W video port or color video port.
- Connect separate floppy disk drive to "Floppy Disks" port.

Caring for Diskettes

Avoid fingerprints, dust, heat, tobacco smoke or bending.

Avoid static electricity.

Label with felt tip marker, not hard ball point pen.

Store properly in box or binder.

Booting from the Power Switch

(Getting started with a diskette by turning on the computer)

1. Turn monitor on.
2. Put diskette into built-in disk drive, called Drive 1 (.D1), then close door. (*Insert oval first, label up.*)
3. Turn power switch on. (*Located in back of computer on the left.*)
 This is the **cold boot** method.

Note that computer is on when power light (*just beside space bar*) lights up.

Booting with Control-Reset

If computer is already on, attempt to start up a diskette by holding down the Control (CTRL) Key while pressing the RESET key. This is known as the **warm boot** method. (*Note: Some programs require special program commands.*)

Understanding Computer Memory

Internal (*main*) memory, stored on "chips," is **temporary**. Quickest access to data.

External (*auxiliary*) memory, stored on disk or diskette, is **permanent**. Largest capacity.

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Option

Using a Menu-Driven Program

1. Select menu option by:
 - Typing number or letter. (*Usually, either upper or lower case will work, using Shift and Shift Lock*).
 - Or using arrow keys to move **cursor** to selected option.
2. Press **Return** or **Enter** if nothing happens immediately.
3. Follow on-screen **prompts**, which vary from program to program. (*Examples: Switching between menus, inputting data, printing, exiting program, etc.*)
4. Override **defaults** (*assumed choices*) by changing the entries, or accept them by pressing Return.

Note: The **Escape**, **Control**, **Open Apple** and **Closed Apple** keys can perform different functions in different programs. All but **Escape** are used with one or more keys.

Correcting Typing Mistakes

1. Use **arrow keys** to position cursor at error.
2. Type over mistake, using **space bar** to eliminate unwanted characters.
 - All keys automatically **repeat**, including Return and Enter. Use short, snappy keystrokes to avoid unwanted entries.
 - Do not use O for Ø or lower case "L" for 1.
3. Use of left or right arrow keys often needed to return cursor to end of line before pressing Return or Enter.

Understanding Printers

Types

- **Daisywheel:** Produces copy that looks like typewritten originals. Usually the most expensive.
- **Dot Matrix:** Characters formed by tiny dots. Fast, less expensive, well suited to graphics.
- **Thermal:** Quiet. Least expensive, and well suited to graphics. Special paper required, which fades over time.

Control Names

Like any peripheral, a printer must have a control name, which is always preceded by a period or "dot". Example: Call the Silentyper ".SILENTYPE". Any other printer (*especially one plugged into Port C*) is generally called ".PRINTER". Names can be changed by the user.

Connecting the Hardware

- Plug Silentyper into **Port A**.
- Use **Port C** for any printer requiring a "serial port" (*i.e., one using a RS-232-C connector*).
- Or connect other printers to one of the four slots inside the computer, using appropriate **interface card**.

Connecting the Software

See Lesson 3 for configuring each application diskette to use your printer setup.

Using the System Utilities Diskette

A group of utility (*i.e., "housekeeping"*) programs, organized as follows:

- **Device Handling Commands** deal with a whole diskette (*also called "volume"*) and all the files on it.
- **File Handling Commands** deal with individual files on a particular diskette.
- **System Configuration Program** tells your computer how to use peripherals connected to computer with each program.

Viewing a Business BASIC Program Listing

To run or list a program written in Business BASIC, the Business BASIC language must be loaded into computer, either manually or automatically.

You know you are in Business BASIC if you have a **greater than sign prompt** beside the cursor.

1. To view the entire program, type LIST^{*}.
2. To stop and restart the listing, hold down the Control key, and type the number 7 on the numeric keypad.
3. To view a single line, type (for example) LIST 2050^{*}.
4. To view a range of lines, type LIST 2000,2020^{*}.
5. To clear the screen, type HOME^{*}.

Note that proper **syntax** requires that each program statement have at least two parts: A **line number**, followed by a **key word**. A statement can also have a third part, consisting of anything from everyday English to a complex formula.

^{*}^{*} means to press the **RETURN** or **ENTER** key. This tells the computer your instruction is complete.

Formatting a Diskette

(2 disk drives)

1. Boot System Utilities diskette from Drive 1.
2. Put blank diskette to be formatted (*or one you are willing to erase*) into Drive 2. Remove write-protect tab, if present. Do *not* format ProFile hard disk!
3. Choose Option D for Device Handling Commands, then Option F to **Format a Volume** (*i.e., diskette*).
4. Press Return to accept the default of **.D2** (*i.e., drive 2*) as the location of the diskette to be formatted.
5. Press Return to accept the default name "**blank**". Or override the default with a name of your own, and press Return. (*Same applies for 2-digit number default.*)

If you make a mistake, you can back up one "field" (*i.e., one prompt*) at a time by holding down Control and pressing Return. Command called **Control-Return**.

6. When screen says "Formatting successful", remove and label the newly formatted diskette.

Note: If you continue formatting additional diskettes, the program will automatically increase the volume number by one (1) each time.

Formatting a Diskette

(1 disk drive, with or without ProFile)

1. Boot System Utilities diskette from Drive 1.
2. Choose Option D for Device Handling Commands, then Option F to **Format a Volume** (*i.e., diskette*).
3. Remove System Utilities diskette, and replace it with the diskette to be formatted.
4. Change default drive **.D2** to **.D1**, and press Return.
5. Press Return to accept the default name "**blank**". Or override the default with a name of your own, and press Return. (*Same applies for 2-digit number default.*)
6. When screen says "Formatting Successful", remove and label the newly formatted diskette.

Getting Caught Without a Formatted Diskette

Imagine entering important data, then being told "Directory Full" when there's no more room on your diskette.

If you have a supply of formatted diskettes on which to save your data, no problem. If you don't, you could lose irreplaceable data and hours of keyboarding time.

Reason: Your computer can only hold one program at a time. So there is no way to use your System Utilities diskette to format a blank diskette without losing the contents of memory you are trying to save.

Moral: Always be prepared with a supply of formatted diskettes.

FlipTrack
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Quiz

Note that you can try the quiz before taking the lesson, if you like, by starting the tape on the FlipTrack side. Turn the tape over and rewind the backside completely to start the self-checking quiz.

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Key Ideas from Lesson 2: **HANDLING FILES**

Duplicating Diskettes

(2 disk drives)

1. Boot System Utilities diskette in Drive 1, and put formatted diskette into Drive 2.
2. Choose Option D for Device Handling Commands, then Option C to **Copy One Volume onto Another**.
3. Remove System Utilities diskette, and place **original** diskette to be copied into **Drive 1**.
4. Use right arrow key to change prompt default to reflect location of **original** diskette in **.D1**. Then press Return.
5. Press Return to confirm **.D2** default for **formatted** diskette.
6. Press Return to accept name to be given to the copy. Or change it, and press Return.
7. Answer "Y" for yes to destroy old data on the formatted diskette. *(Otherwise, answer "N" for no, and change .D2 diskette.)*
8. When notified that copying was successful, remove the duplicated diskette and label it.

If you try to copy onto an unformatted diskette, you will get a message telling you the destination volume is not formatted. You can replace the source volume with your System Utilities diskette, then press the Space Bar to format the diskette in Drive 2. When formatting is complete, simply replace the System Utilities diskette with your original source volume in Drive 1, and press the Space Bar to complete the copying.

If you are unable to copy certain commercial software, it's because some manufacturers put special codes onto their diskettes to prevent unauthorized duplication.

Duplicating Diskettes

(1 disk drive)

1. Boot System Utilities diskette in Drive 1.
2. Choose Option D for Device Handling Commands, then Option C to **Copy One Volume onto Another**.
3. Remove System Utilities diskette, and place original **write-protected** diskette to be copied into Drive 1.
4. Use right arrow key to change both prompt defaults to .D1, and press Return after each change.
5. Press Return to accept the name to be given to the copy. Or change it, and press Return.
6. When prompted to insert "destination volume", replace the original or "source" diskette with a **blank, unformatted** diskette. Then press the **space bar**.

Note: It is not suggested that you try to copy onto a formatted diskette with this 1-drive procedure. Start with a diskette that is completely blank. *(This is exactly opposite to the 2-drive procedure.)*

7. Swap diskettes when prompted, pressing the **space bar** each time. Be prepared for many swaps.
8. When notified that copying was successful, remove the duplicate diskette and label it.

If you do not have a blank diskette, you can copy onto a formatted diskette by pressing the Escape key to Quit when the computer beeps and keeps asking you to insert the destination volume. Insert your original or "source volume", and reconfirm .D1 drive references. Then type in a name different from the one being displayed. And follow the prompts for swapping.

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Write-Protecting a Diskette

By placing an adhesive tab over the "write-protect notch" on the side of a diskette, you can protect the entire diskette against accidental erasure or change. Example: You cannot unlock, save, rename or delete programs on the System Utilities diskette because there is no notch on the side.

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Checking Out a New Copy

Method 1: Booting (or Listing Files)

If your new copy will boot, it is probably a good copy. Place it into Drive 1, and try either a "cold boot" from the power switch or a "warm boot" using Control-Reset. Note: If your copy contains data files only, it will not boot. But you can list its directory (see page 17) to compare contents.

Method 2: Verify a Volume

1. Boot System Utilities diskette in Drive 1, and place diskette to be verified in Drive 2.
2. Choose Option D for Device Handling Commands, then Option V to **Verify a Volume**.
3. Press Return to accept the default of **.D2** (i.e., Drive 2) as the location of the diskette to be verified.
4. Press Return to verify each **block** on the diskette.
5. Make a note of any bad blocks (*by number*), along with the names of any files affected.
6. If a bad diskette contains your only copy of important data, transfer the good files to a new diskette. (See page 14 for file copying procedure.)

Renaming a Volume

1. Boot System Utilities diskette from Drive 1, and put diskette to be renamed in Drive 2. (Be sure diskette to be renamed is not write-protected.)
2. Choose Option D for Device Handling Commands, then Option R to **Rename a Volume**.
3. Press Return to accept the default of **.D2** (i.e., Drive 2) as the location of the diskette to be renamed.
4. Type a slash / followed by the new name, using either capital or lower case letters, and press Return.
5. Change diskette label to reflect new name.

Setting Time and Date

(Requires built-in clock)

1. Boot System Utilities diskette in Drive 1.
2. Choose Option D for Device Handling Commands, then Option T to **Set Time and Date**.
3. Follow directions in the prompts: Date line must start with a number; month must be a 3-letter abbreviation; year must not exceed 2000; each must be separated by a hyphen, including hour, minute and second.

Listing Devices Configured

(Inventory of peripherals for which diskette is configured)

1. Boot System Utilities diskette from Drive 1, and put diskette to be inventoried in Drive 2.
2. Choose Option D for Device Handling Commands, then Option L to **List Devices Configured**.
3. Press Return to accept default of "printing" the list to CONSOLE (*i.e.*, screen), rather than to PRINTER.
4. View list.

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Listing a Directory

1. Boot System Utilities diskette from Drive 1, and put diskette whose directory will be listed in Drive 2.
2. Choose Option F for **File Handling Commands**, then Option L to **List Files**.
3. Press Return to accept the default of **.D2** for a Drive 2 directory listing. Or change to **.D1**.
4. Press Return to accept the default of viewing **all directory levels**. Or specify level number. (*See pages 20 and 21.*)
5. Press Return to accept the default of "printing" the directory to CONSOLE (*i.e.*, screen). Or specify printer by name. Example: **.SILENTYPE**.
6. View directory listing.

Interpreting the Directory Listing

- Top line shows name of diskette.
- Bottom line summarizes number of blocks available and number of blocks contained.
- Asterisk ★ to the left of name means file or program is locked (*i.e., protected from accidental deletion or change*).
- **Individual file names** are followed by number of "blocks" used by file data, time and date, file type (*or language used*), E-O-F (*end of file*) statistics, and physical size (*in "blocks"*) occupied by entire file.

Example: 273 of 280 blocks on a 5-1/4 inch diskette are available for file storage.

Considering Peripherals

Printer: (See page 10 for printer types.) In addition, a memory buffer can be added that will let you print while typing. And a forms tractor can be used with a typewriter-quality printer to handle continuous forms, mailing labels, etc.

Modem: Permits communication between computers over telephone lines, thereby providing access to remote information sources.

Plotter: Produces "hard copy" of schematics, graphs, charts, etc.—even in color.

CP/M Card: Makes it possible to use a wide variety of software developed for other makes of computers.



Marking Files Using Arrow Method

(To automate multiple file handling)


1. Type drive designation, slash, down arrow key to obtain list of files.
2. Use up and down arrow keys to highlight selected files.
3. "Mark" choices with right arrow key. (*Left arrow de-selects.*)

Copying Individual Files

(One or more at a time)

1. Boot System Utilities diskette from Drive 1, choose Option F for File Handling Commands, then select Option C to **Copy Files**.
2. Replace System Utilities diskette with your "source" diskette, and put your formatted "destination" diskette into Drive 2. *(Destination diskette cannot be write-protected, see page 15.)*
3. **Method for Single File:** Type drive designation, slash, name of file to be copied, and press Return. Example: **.D1/FILENAME** .
Note: Change file name, if desired. Example: **.D2 / NEWNAME** .
Method for Multiple Files: Mark files to be copied using **arrow method** (see page 18). Press Return twice.
4. Change Drive 2 default to **.D1**, if you are using a one-drive system. Press Return.
5. When copying is complete, check your Drive 2 directory (see page 17) to verify success.

Changing File Names

1. Boot System Utilities diskette from Drive 1, choose Option F for File Handling Commands, then select Option R to **Rename**.
2. Place diskette containing file to be renamed in Drive 2. *(Neither file nor diskette should be write-protected, see pages 15 and 20.)*
3. Type drive designation, slash, old name, and press Return.
Example: **.D2/OLDNAME** .
Or mark file to be renamed using the **arrow method** (see page 18). Press Return.
4. Enter new name following the slash *(using space bar to get rid of any extra characters)*.
5. Check your directory (see page 17) to verify renaming success.

Write-Protecting Files

(One or more at a time)

1. Boot System Utilities diskette from Drive 1, choose Option F for File Handling Commands, then select Option W to **Set Write Protect**.
2. Place diskette containing file(s) to be locked or unlocked in Drive 2. (*Diskette itself must not be write-protected, see page 15.*)

3. **Method for Single File:** Type drive designation, slash, file name, and press Return. Example: **.D2/FILENAME**␣.

Method for Multiple Files: Mark files to be write-protected using arrow method (see page 18). Press Return.

4. Type "Y" to turn write protection on, "N" to turn it off.
5. Check your directory (see page 17) to verify an asterisk ★ for locked files, no asterisk for unlocked files.

Editing File Names

To delete characters, hold down the **Open Apple** key while pressing the **left or right arrow** key.

To insert characters, hold down the **Open Apple** key, and press the letter "I". A special cursor (*shaped like an upside-down "T"*) is placed to the left of the highlighted letter. Insert text, and Press Return.

To use "wildcards" in file names for selective copying, directory listings, etc., use an **equals sign (=)** in place of any character or group of characters.

Example: **/SOS.=** calls up all SOS files.

File Name Rules

File names must start with a letter, contain no spaces, and not exceed 15 characters in length.

Deleting Files

(One or more at a time)

1. Boot System Utilities diskette from Drive 1, choose Option F for File Handling Commands, then select Option D to **Delete a File**.
2. Place diskette containing file(s) to be deleted in Drive 2. (Neither file nor diskette should be write-protected, see pages 15 and 20.)
3. **Method for Single File:** Type drive designation, slash, name of file to be deleted, and press Return. Example: **.D2/FILENAME**®.
Method for Multiple Files: Mark files to be deleted using **arrow method** (see page 18). Press Return.
4. Answer "Y" for yes to update the directory.
5. Check your directory (see page 17) to verify deletion.

Setting Up Computer Filing System

- Diskette = File Drawer
- File and Subdirectory Names = File Folders
- Security = Backup Procedures, Write-Protection

FlipTrack
Option

Using Subdirectories

(To improve file organization)

- **Root names** always appear first—at the far left in a directory listing. Up to 51 root names allowed.
- **Subdirectory names** are indented one or more steps under the root name, according to **level**. No limit on number of subdirectories, but each requires at least 2 blocks.

Example: SUE

```

FORECAST
  SALES
    CALIFORNIA
    WASHINGTON
    OREGON
  ACTUAL
BRIAN
  FORECAST
    SALES
      JANUARY
  
```

```

Root name, Level 1
Level 2 subdirectory
Level 3 subdirectory
Level 4 subdirectory
Level 4 subdirectory
Level 4 subdirectory
Level 2 subdirectory
Root name, Level 1
Level 2 subdirectory
Level 3 subdirectory
Level 4 subdirectory
  
```

Using Pathnames

Selected files (*or groups of files*) under a root directory name can be **copied, renamed, write-protected or deleted**, with a single command, using the root name or **pathname**. (See page 19 for *Copy Files and Rename*, page 20 for *Write-Protect and Use of "Wildcards,"* and page 21 for *Delete*.)

Example: **.D2/SUE** would include Sue's root directory file and *all* the subdirectory files it contains.

.D2/SUE/FORECAST would include Sue's Forecast file, plus the Sales and State files it contains.

.D2/SUE/FORECAST/SALES would include Sue's Sales file, plus the State files it contains.

.D1/SUE/FORECAST/SALES/OREGON would include Sue's Oregon file only.

See **Listing a Directory** on page 17 for way to specify the directory level desired.

Making a New Subdirectory

1. Boot System Utilities diskette from Drive 1, choose Option F for File Handling Commands, then select Option M to **Make a New Subdirectory**.

Note: Some commercial software allows subdirectories to be created while using the program itself.

2. Place formatted diskette on which new subdirectory is to be created in Drive 2. (*Neither file nor diskette should be write-protected, see pages 15 and 20.*)
3. Enter appropriate pathname. Example: To give Brian a new subdirectory for Expenses on the same level as his existing one for Sales, enter

.D2/BRIAN/FORECAST/EXPENSES␣

Note: When building a new pathname, only one subdirectory name can be added at a time.

4. Press Return to reserve space for 25 files (*the default value*). Or specify a different number and press Return.
5. Check your directory (see page 17) to verify the placement of your new subdirectory.

Quiz

Note that you can try the quiz before taking the lesson, if you like, by starting the tape on the FlipTrack side. Turn the tape over and rewind the backside completely to start the self-checking quiz.

FlipTrack
Option

3

Key Ideas from Lesson 3: **MANAGING PERIPHERALS**

Installing Peripheral Devices

Each peripheral device requires a **hardware** connection of some kind, usually an interface card and/or a cable. But it also requires a **software** connection.

The software connection is called a **device driver**. The driver is a special SOS program that links each application program (*i.e., spreadsheet, word processing, etc.*) with the specific peripherals it needs (*i.e., disk drives, a printer, a modem or whatever*).

Whenever you add a new peripheral device, you must generally reconfigure your `sos.driver` program on each application program diskette that uses it. Likewise, whenever you acquire a new application program, you may have to configure a special `sos.driver` program for it. To do this, you will use the **System Configuration Program** on your System Utilities diskette. Before making changes, be sure you preserve a copy of the original `sos.driver` for safety's sake.

Reading a Driver

(Loading `sos.driver` into temporary memory)

Note: If you will be making changes, be sure neither the diskette whose `sos.driver` program you are going to read, nor the `sos.driver` program itself, is **write-protected** (see pages 15 and 20).

1. Boot System Utilities diskette, and choose Option S for **System Configuration Program (SCP)**.
2. Place the program diskette whose driver you wish to read into Drive 2. Then select Option R to **Read a Driver**.
3. Change the prompt to confirm **.D2/SOS.DRIVER**. Then press Return.

CAUTION: Do *not* allow the Return key to repeat, or you could overload memory. You should see about 7 names, but if you have double that amount with names repeated, you should press Escape, followed by Q—the Quit Option—to start the procedure over.

4. View list of drivers currently configured. *(An asterisk ★ beside any device name means that it is **inactive**, not write-protected.)*

Editing Driver Parameters

1. Read in the **sos.driver** of the program diskette whose parameters you wish to edit (see page 24).
2. Press Escape to go back to the System Configuration menu, and choose Option E to **Edit Driver Parameters**.
3. Select the device driver to be edited, either by typing its number or by moving the cursor to it and pressing Return.
4. Change its **status** (i.e., *active/inactive*), its **name** or **other parameters** by moving your cursor to the appropriate number, and press Return. Then follow onscreen prompts for making entries and pressing Return.
5. **Generate new system** onto your program diskette (see page 27).
6. **Write-protect** your edited **sos.driver** program (see page 20).
7. Boot diskette to test new driver.

Adding a Device Driver

1. Read in the **sos.driver** of the program diskette to which you wish to add the new driver (see page 24).
2. Read in the driver of the new device you are adding (see page 24).
3. **Change system parameters** and/or **edit driver parameters**, as necessary (see pages 25 and 26).

Example: If new device plugs into Slot 3, you may have to override the default Peripheral Slot Assignment of 1.

4. **Generate new system** onto your program diskette (see page 27).
5. **Write-protect** your reconfigured **sos.driver** program (see page 20).
6. Boot diskette to test new driver.

Deleting a Device Driver

1. Read in the **sos.driver** of the diskette from which you wish to delete the device driver (*see page 24*).
2. Press Escape to go back to the System Configuration menu, and choose Option D to **Delete a Driver**.
3. Move your cursor to the driver to be deleted, press Return, and type "Y" for yes to confirm the deletion.
4. **Generate new system** onto your program diskette (*see page 27*).
5. **Write-protect** your reconfigured **sos.driver** program (*see page 20*).
6. Boot diskette to test new driver.

Changing System Parameters

1. Read in the **sos.driver** of the program diskette on which you wish to change system parameters (*see page 24*).
2. Press Escape to go back to the System Configuration menu, and choose Option C to **Change System Parameters**.
(Changes you can make include the **number of disk drives**; **peripheral slot assignments** for a plotter, a printer, a modem, etc.; **character set** (i.e., type style) for your monitor display; **keyboard layout**; and **inverse display**.)
3. Select the system parameter you want to change by typing its number or moving cursor to it and pressing Return. Respond to other prompts, as necessary.
4. **Generate new system** onto your program diskette (*see page 27*).
5. **Write-protect** your reconfigured **sos.driver** program (*see page 20*).
6. Boot diskette to test new driver.

Generating a New System

(Saving reconfigured sos.driver to diskette)

This procedure follows adding a device driver (*page 25*), deleting a device driver (*page 26*), editing driver parameters (*page 25*) or changing system parameters (*page 26*).

1. Choose Option G to **Generate a New System**.
2. Change or confirm the disk drive designation and Driver File Name prompt. Then press Return.
3. Answer "Y" for yes to delete the old driver and replace it with the new one. (*Assumes driver file is not write-protected; see page 20.*)
4. Boot diskette to test new driver.

Using the System Utilities Data Diskette

(Not to be confused with the System Utilities diskette)

This diskette contains a collection of standard device drivers: console, RS-232-C port, Qume printer, audio, graphics, Silentype printer, both Sholes (QWERTY) and Dvorak keyboard layouts, and the four available display fonts—Standard, Apple, Roman and Byte.

Example: To change to the Apple font, follow the procedure for **Changing System Parameters** (*see page 26*). Choose Option C to **Change the Character Set**, and enter the pathname `.D2/FONTS/APPLE`.

FlipTrack
Option

Installing Controller (or Interface) Cards

1. Turn off computer and monitor, and disconnect all cables and connectors, including the computer's power cord.
2. Stand computer on its back so that the front edge points up.
3. Use a standard (*not Phillips-head*) screwdriver to turn the two screws that connect the top—one on each side—a quarter turn to the left (*counterclockwise*). The top will "pop" loose.
4. Put computer back down, and use both hands to remove the top.

Continue . . .

2. Remove appropriate slot cover, and push the controller (or interface) card firmly in place. Avoid touching electronic components, as fingers carry both oil and static electricity. Input-Output (or I/O) slots correspond to the cable openings in the back. They are numbered from 1 to 4, left to right.
6. Put top back on, and re-attach it by turning the screws clockwise until firmly seated.
7. Reconnect power cord and all other cables.
8. Perform **System Check**:
 - Boot System Utilities diskette in Drive 1.
 - Put a diskette into Drive 2, and list a directory.
 - Print out the directory.

Using the ProFile Hard Disk

(Professional Filing System)

- Turn on ProFile before turning on computer, so that it can come up to speed. *(Flickering light changes to steady red glow when it is ready.)*
- If computer is being used throughout day, leave ProFile on, even if computer and monitor are turned off and on.
- Never turn off computer or ProFile while light is flickering (i.e., storing and retrieving data).
- Use **.PROFILE** as drive designation in prompt lines.
- Follow identical procedures for copying files, deleting them, renaming them, etc., as with floppy diskettes.
- Because of the large capacity (5 megabytes = about 35 floppy diskettes), the Directory can get quite large. Specify directory level 1, or use the "wildcard" to be selective about what you see.
- Back up the ProFile by saving to floppy diskettes.
- No need to ever handle ProFile's four, sealed hard disks. Nor do you need to use the Device Handling Commands for formatting or copying the hard disk.

Speeding Up Printing

You can turn off the monitor to save processing time so you can print up to 20 percent faster. Simply hold down Control and press the number 5 on the numeric keypad. Repeat this procedure to get the monitor display back.

Peeking at Asciifiles

(Without having to go through the program that controls them)

1. Boot System Utilities diskette in Drive 1, with diskette containing files you want to examine in Drive 2.
2. Check the Drive 2 directory (see page 17) to identify "Asciifiles" in the File Type column.
3. From the File Handling Commands menu, choose Option C to **Copy Files** (see page 19). But change the "To the Files" prompt to read **D1.CONSOLE** in order to "copy" the selected file to your screen.
4. Answer "N" for no to the question about adding a page of directory information before each file.
5. To get a printout, change the "To the File" prompt to the name of your printer (e.g., .SILENTYPE).

Quiz

Note that you can try the quiz before taking the lesson, if you like, by starting the tape on the FlipTrack side. Turn the tape over and rewind the backside completely to start the self-checking quiz.

FlipTrack
Option

4

Key Ideas from Lesson 4:

APPLE II EMULATION MODE**Getting into Emulation Mode**

(Making your Apple /// behave like an Apple II)

The Emulation Mode causes the Apple /// to emulate an Apple II with 48K of memory, as if the disk drives were connected to Slot 6, and with no additional memory or language system cards available.

1. Boot the **Emulation Mode diskette** in built-in disk drive.
2. Replace the Emulation Mode diskette with an Apple II **program diskette**.
3. Press Return to boot the Apple II program diskette.

NOTE: If program does not work correctly, perhaps it requires the **Integer BASIC** language, rather than **Applesoft BASIC**, which is the default. *(See page 32 for changing to Integer BASIC.)* Any program written in **Binary code**, the computer's native machine language, should always work.

Obtaining Standard Apple II DOS

(i.e., Disk Operating System)

- Boot the Apple II 3.3 System Master diskette.
- If you don't have the 3.3 System Master, try booting any Apple II program and exiting it by using its exit or quit option, or by pressing ESCape. You will know you have exited to standard DOS if you see either a **right bracket** and blinking cursor (*Applesoft BASIC prompt*) or a **greater than sign** and blinking cursor (*Integer BASIC prompt*).
- If you can **CATALOG** the diskette (see page 32), you have standard DOS.

Operating Differences Between Apple /// and Apple II

- Apple II **display** is only 40 characters wide, versus 80 characters with the Apple ///.
- Color TV (as opposed to color monitor) requires special hardware modification with Apple ///.
- Apple II's keyboard is smaller and has fewer keys. No numeric keypad, for example.
- Key combinations involving @ ^ & (*) : + = - " ' are different on an Apple II, because key locations are different. (*Be prepared to translate program commands that require them.*)

Differences Between Apple II and Emulation Mode

- Cannot run languages requiring 64K in Emulation, such as Logo, Pilot, Fortran or Pascal. (*Exception: Run-time Pascal II programs can be recompiled to run in Emulation.*)
- Cannot use interface cards in Emulation to add a language, expand memory, create 80-column display, use Apple II's CP/M operating system, etc.
- Cannot switch between Applesoft BASIC and Integer BASIC using the INT and FP commands. Use the Configuration Option of the Emulation program menu instead (see page 33).
- Cannot use cassette tape storage with an Apple ///, even in Emulation.

Cataloging an Apple II Diskette

Type **CATALOG** to list contents of an Apple II diskette.

- Example: Here are excerpts from the 3.3 System Master catalogs of the . . .

APPLE II PLUS

DISK VOLUME 254

★A 006 HELLO
 ★I 018 ANIMALS
 ★T 003 APPLE PROMS
 ★I 006 APPLESOFT
 ★I 026 APPLEVISION
 ★I 017 BIORHYTHM
 ★B 010 BOOT13
 ★A 006 BRIAN'S THEME
 ★B 003 CHAIN
 ★I 009 COLOR DEMO
 ★A 009 COLOR DEMOSOFT

APPLE //e

DISK VOLUME 254

★ A 003 HELLO
 ★ I 003 APPLESOFT
 ★ B 006 LOADER.OBJ0
 ★ B 042 FPBASIC
 ★ B 042 INTBASIC
 ★ A 003 MASTER
 ★ B 009 MASTER CREATE
 ★ I 009 COPY
 ★ B 003 COPY.OBJ0
 ★ A 009 COPYA
 ★ B 003 CHAIN

- Apple II **filenames** can have spaces, be longer than 15 characters and have any punctuation, other than a comma.
- If the catalog listing is **too long for one screen**, scroll to the end by tapping any key, such as the Space Bar.

Interpreting an Apple II Catalog

- ★ **Asterisk** means the file or program is locked or protected from accidental deletion or change.

Numbers indicate "sectors" of storage occupied on the diskette.
(There are 560 sectors—not blocks—on one side of each diskette.)

- A The letter "A" indicates a program written in the **Applesoft** BASIC language, which is the Emulation mode default.
- I The letter "I" indicates a program written in the **Integer** BASIC language. *(You can switch to Integer BASIC from the Configuration menu of the Emulation diskette.)*
- B The letter "B" indicates a data file *(or program)* stored in **Binary code** *(machine language)*. Runs on any Apple II computer, using special commands of the form: **BRUN** .
- T The letter "T" indicates a data or text file, which usually stores information for use by other programs. Cannot be run independently.

Running an Apple II Program

(In Applesoft or Integer BASIC)

- With the appropriate language prompt showing, type **RUN PROGRAM NAME** .
- Type **RUN** without program name if that program is already in memory.
- If the program does not offer an easy exit, press the Control key and the letter "C" at the same time. Then press Return, if necessary. That's **CTRL-C** .

Controlling a Printer in Emulation Mode

1. Turn on printer, and be sure it is "on line" with computer.
2. Use **menu option** to start and stop the printing, if program offers one.
3. Otherwise, use **manual** method:
 - If printer is connected to RS-232-C serial port, type either **PR#7** or **PR#5** .
 - If printer is connected to an interior slot, use slot number 1, 2, 3 or 4 in the above command. Example: If you have a Silentype printer, connect it with a Silentype interface card to Slot 1 (*not Port A*) in Emulation Mode. Then type **PR#1** .
 - To turn off output to the printer, type **PR#0** .

FlipTrack
Option

Using the Emulation Mode Configuration Menu

1. Select menu option with up or down arrow keys.
2. Use **left or right arrow keys** to highlight choice within selected menu option. Then press Return.

Option Examples:

- Select Applesoft or Integer BASIC language.
- Select between printer or communications modem.
- Reset the baud rate.
- Keep the line feed enabled.
- Turn the Carriage Return delay on.
- Change line width to 40 columns (*allows you to view file while it is being printed*).

FlipTrack
Option

Initializing a Diskette

(Formatting it to store Apple II programs)

1. Boot 3.3 System Master or otherwise obtain standard DOS.
2. Type **NEW** ☐ to clear current program out of memory (*but not BASIC language or DOS*).
3. Put diskette to be initialized into Drive 1.
4. Type **INIT HELLO** ☐. (*Greeting program can have any name you wish, but HELLO is the traditional one.*)
5. Check CATALOG, and try booting to verify initialization.

Emulating Apple II's "Warm Boot"

Type **PR#6** ☐ to boot whatever diskette is in the disk drive. (*Simulates Apple II's Slot 6, which is the usual connection for disk drives.*)

Using Two Disk Drives

1. In general, you can direct action to a specific disk drive by typing in the command, the name of the program (*if applicable*), a comma, and D1 or D2. Examples:
CATALOG,D2 ☐ **RUN PROGRAM,D1** ☐
2. Once your computer has been directed to a specific disk drive, it will continue to use that disk drive until redirected. Thus, you do not have to append a D1 or D2 to each command.
3. Because it is so easy to delete from the wrong diskette or save to the wrong diskette, you should place a tab over the "write protect" notch of your source diskette, whenever possible.

Customizing the Greeting Program

1. Get into standard DOS by booting 3.3 System Master or another program of your choice in Drive 1.
2. Put diskette to be initialized into Drive 2.
3. Type **NEW**␣ to clear current program from memory.
4. Enter the following typical program:

```
10 HOME␣  
20 PRINT "YOUR NAME, TODAY'S DATE"␣  
30 PRINT "PURPOSE OR CONTENT"␣  
40 END␣
```
5. Type **RUN**␣ to verify screen format.
6. If corrections are needed, type **LIST**␣ to list the program. Then retype any lines that need correcting, along with their line numbers. Corrected lines will replace the originals automatically when program is run.
7. Type **INIT HELLO,D2**␣ to initialize the diskette in Drive 2. *(The number 254 will be assigned automatically. To change it, use INIT HELLO,V1,D2␣.)*
8. CATALOG and/or use "warm boot" method to verify initialization.

NOTE: If you have a program in memory at the time you initialize a diskette, it will automatically become the greeting (or "boot") program.

Loading a Program

Type **LOAD PROGRAM NAME**␣ to put that program into the computer's memory.

Listing a Program

Type **LIST**␣ to display the lines of a program already in memory.

Type **LIST 1,100**␣ to display a range of lines. *(You must separate the two values with a punctuation mark, such as a comma, period, dash, etc.)*

Type **LIST 100**␣ to display line 100 only.

Control over Scrolling

Control-S (CTRL-S) stops and starts the scrolling of a lengthy program listing.

Control-C (CTRL-C) stops the listing and restores the prompt character and blinking cursor. May require Return.

Saving a Program

1. Type **SAVE PROGRAM NAME**␣ to store program on a diskette.
2. Check CATALOG or RUN program to verify successful save.

NOTE: Saving under old program name replaces original.
Saving under new name sets up a new file.

Renaming a Program

Type **RENAME OLD NAME, NEW NAME**␣.

Unlocking and Locking Programs

Type **LOCK PROGRAM NAME**␣ to prevent mishaps.

Type **UNLOCK PROGRAM NAME**␣ to allow changes or deletions.

Verify that file is **locked** (★ *asterisk*) or **unlocked** (*no asterisk*) by checking CATALOG.

Deleting Programs

Type **DELETE PROGRAM NAME**␣ to erase an unlocked program from a diskette that is not "write protected."

Changing Program Lines

1. Type **UNLOCK PROGRAM NAME**Ⓜ.
2. Type **LOAD PROGRAM NAME**Ⓜ.
3. **LIST** line number(s) to be changed (see page 35).
4. Retype each line, including its line number, making any changes necessary.
5. Press Return to insert new or modified line into program.
6. **LIST** again to review change.
7. Type **RUN**Ⓜ (no program name) to verify program change.
8. Type **SAVE PROGRAM NAME**Ⓜ.
9. Type **LOCK PROGRAM NAME**Ⓜ.

NOTE: Using the same line number **replaces** the line.
Using a new line number **adds** the line.
Using a line number by itself **deletes** the line.

Flip Track
Option

Entering Published Software

(As listed in magazines, books, journals, etc.)

1. Make sure you have DOS (see page 30) and proper language prompt is in view.
2. Type **NEW**Ⓜ to clear current program from memory.
3. Enter program lines exactly as published.
4. Type **SAVE PROGRAM NAME**Ⓜ.
5. Type **RUN**Ⓜ to execute program.
6. Edit lines to "debug" program, then save it.

NOTE: Special editing software can eliminate the need to key in a lot of individual line changes, thus saving time while debugging a program.

Flip Track
Option

Copying Files with the FID Program

(Works with A, I, B or T files)

1. Boot 3.3 System Master diskette.
2. Type **BRUN FID** . (The "B" is necessary because FID is a Binary program.)
3. Type 1 for Copy Files option.
4. Set SOURCE SLOT 6
 DRIVE 1
 DESTINATION SLOT 6
 DRIVE 2 (With 1 drive, enter 1.)
5. Enter **FILENAME** . (You may use equals sign as "wild card" to select file(s) for copying.)
6. With "wild card," answer Y or N to "prompting" question.
7. Make sure **source** diskette is in Drive 1 and **destination** diskette is in Drive 2. Press Return. (The destination diskette must be initialized.)
8. Return to FID menu when finished.
9. Use Option 2 to **CATALOG** destination diskette. (Reset slot and drive numbers, if necessary.)

NOTE: You can use more than one "wild card" symbol with FID options. Examples:

- A= selects all files **beginning** with "A."
- =AB selects all files **ending** with "AB."
- =ABC= selects all files **containing** "ABC."
- = selects **all** files.

With **prompting**, you can accept (Y) or reject (N) each file chosen.

Using COPYA to Duplicate Diskettes

(Requires 3.3 System Master diskette)

COPYA copies the contents of an entire Apple II or Apple /// diskette (formatting, Applesoft, Integer, Binary and Text files), provided it has not been specially protected to prevent duplication.

1. Boot 3.3 System Master diskette.
2. Type RUN COPYA \square .
3. Set ORIGINAL SLOT: DEFAULT = 6 \square
 DRIVE: DEFAULT = 1 \square
 DUPLICATE SLOT: DEFAULT = 6 \square
 DRIVE: DEFAULT = 2 \square (With one drive, enter "1" to override default.)
4. Put original diskette to be copied into Drive 1 and duplicate into Drive 2. (Duplicate must not be "write protected.") Press Return.
5. To verify copy, type CATALOG ,D2 \square and/or boot the duplicate.
6. Use felt-tip pen to label diskette.

Using Other FID Menu Options

Option 3 (Space on Disk) calculates the number of sectors "free" and "used" on a diskette. (There are 560 sectors available.)

Options 4 (Unlock Files), **5** (Lock Files), **6** (Delete Files) and **8** (Verify Files) follow the same general procedure:

1. Select option, and press Return.
2. Set source slot and drive number.
3. Enter FILENAME \square . (You may use equals sign as "wild card.")
4. With "wild card," answer Y or N to "prompting" question.
5. Return to FID menu, and check catalog.

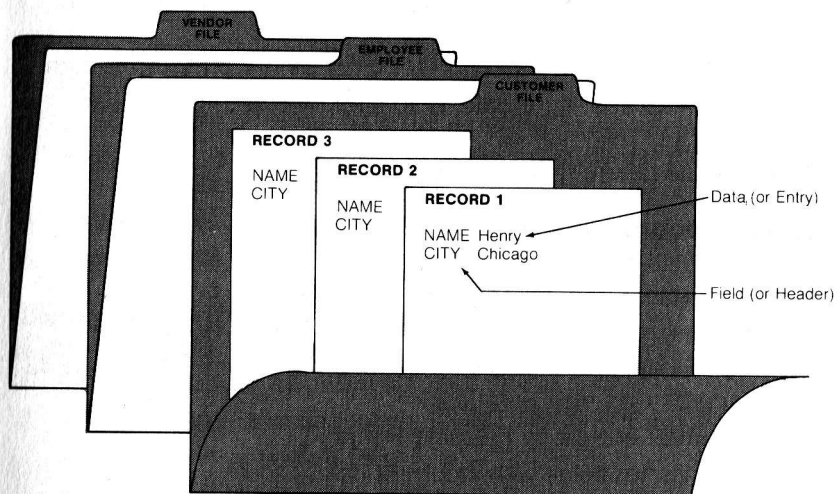
NOTE: All of the FID options work on the diskette in the last drive accessed. To switch drives, use **Option 7** (Reset Slot and Drive).

Quiz

Note that you can try the quiz before taking the lesson, if you like, by starting the tape on the FlipTrack side. Turn the tape over, and rewind the backside completely to start the self-checking quiz.

Appendix: USING "FILE CABINET" PROGRAM

DATA BASE



Designing a New File

(Option 1 on Main Menu)

1. Boot File Cabinet diskette from Drive 1.
2. Choose option to CREATE A NEW FILE.
3. Select a file name that relates to type of records being stored:
 - Maximum length 14 characters
 - First character must be a letter
 - No spaces allowed
 - Pathnames allowed if using subdirectories
4. Decide on type of **fields** to be stored for each **record**, and enter a **header** for each type.
 - Up to 20 items (*headers or fields*) can be used for each record.
 - Number of records stored on a diskette depends on number of headers.
5. Press Return to signal end of design stage.
6. Press Return for "time field" prompt, if your system has no clock.
7. When disk drive stops, Main Menu is displayed.

Adding Records to a File*(Option 2 on Main Menu)*

1. Boot File Cabinet from Drive 1, and select file.
2. At Main Menu, choose Option 2: ADD RECORDS TO FILE.
3. Type entry for each header, as it is displayed. *(To skip a header, press Return.)*
 - Use left or right arrows to correct entry before pressing Return.
 - Answer **Y** to add more data, **N** to stop, or **R** to redo current entry.
4. Save your file before quitting *(see page 46.)*

Changing Records in a File*(Option 3 on Main Menu)*

1. Boot File Cabinet from Drive 1, and select file.
2. At Main Menu, choose Option 3: CHANGE RECORDS IN FILE.
(Note: You must know the record number in advance. (See page 43 to list records with their numbers.)
3. Bypass correct entries by pressing Return.
4. Retype entries for fields with incorrect data.
5. Answer **Y** if more records must be changed, **N** to return to Main Menu, or **R** to redo your last record.
6. Save your file before quitting *(see page 46.)*

Deleting Records from a File

(Option 4 on Main Menu)

1. Boot File Cabinet from Drive 1, and select file.
2. At Main Menu, choose Option 4: DELETE RECORDS FROM FILE.
(Note: You must know the record number in advance. See below to list records with their record numbers.)
3. Enter number of record to be deleted, then type Y to confirm deletion.
 - Once deleted, data is permanently lost.
 - Record numbers change when records are deleted, so obtain a listing of all records with their new numbers for future reference.
4. Return to the Main Menu by pressing Return.
5. Save your file before quitting (see page 46).

Listing Records on Screen

(Option 5 on Main Menu)

1. Boot File Cabinet from Drive 1, and select file.
2. At Main Menu, choose Option 5: LIST RECORDS FROM FILE.
 - Choose A to see all files.
 - Choose P for only part of the file, then type starting record number.
3. Press Return to continue, or Escape to end listing.

Viewing a Particular Group of Records

(Option 6 on Main Menu)

1. Boot File Cabinet from Drive 1, and select file.
2. At Main Menu, choose Option 6: SEARCH FOR RECORDS.
3. Enter field (*header*) number to be used.
4. Enter name or numeric value the computer should search for.
(Note: Fields containing partial matches—i.e., JohnSON and ThompSON—would appear in response to SON.)
5. Press Return at end of listing to return to the Main Menu.

Sorting (or Rearranging) a File

(Option 7 on Main Menu)

1. Boot File Cabinet from Drive 1, and select file.
2. At Main Menu, choose Option 7: SORT CURRENT FILE.
 - Enter field (*header*) number to be sorted.
 - Specify whether data is numeric (*e.g., zip code*) or alphabetic (*e.g., last name*). Note: Mixed data, such as a street address, is considered alphabetic.
 - Choose either ascending or descending order for sort.
3. At your option, you may type **Y** to save the file in its newly sorted order. Otherwise, type **N**.

Changing Headers in an Established File

(Options 10, 11 and 12 on Main Menu)

1. Boot File Cabinet from Drive 1, and select file.
2. At Main Menu, choose appropriate option, as follows:
 - 10 (*Add Headers to a File*) to add a new kind of information to each record.
 - 11 (*Change Headers in a File*) to change the wording or spelling of header.
 - 12 (*Delete Headers from a File*) to eliminate a type of information from each record.
3. You may make these changes to your present file on diskette, or create a new file without affecting the old one. Enter **N** for new or **S** for same.
 - If **new**, you must supply new name.
 - Regardless of whether you type **N** or **S**, data will automatically be saved to diskette in new format.
4. To continue, you must reload file from diskette.

NOTE: Be prepared to re-enter the header titles after you have performed Options 9, 10, 11 and 12. Make sure you have an exact listing of what each header is—or should be—prior to performing the above options.

Creating and Printing a Report

(Option 8 on Main Menu)

1. Boot File Cabinet from Drive 1, and select file.
2. At Main Menu, choose Option 8: GENERATE A REPORT.
 - This option allows you to print a columnar report of selected data with the spacing and order of your choice.
 - The report can be printed to **screen** or **printer**. If to screen, total screen width is 80 characters.
 - The report format may be saved to diskette for reuse later.
 - Many report formats can be designed for each file.
3. Indicate total number of headers to be included in each report format.
4. Enter number of each header to be used in report. *(First header will be Column 1, etc.)*
5. For each column, indicate number of spaces to be tabbed from the left edge of the paper or screen. *(Output width is 80 characters for the monitor and 80 or more for a printer.)*
6. For numeric data, enter **Y** if the column is to be totalled, **N** if not.
7. For each column, indicate whether data should be left or right justified.
8. Specify search criteria to select only certain records for the report. *(Two criteria may be used, and only records meeting both criteria will be printed. Pressing Return selects all records.)*
9. Enter **S** for screen output, **P** for printer output.

Printing Notes: For Silentype printers, enter 66 as total lines per page. For other printers, enter the number of characters per inch (*pitch*) and the number of lines per page.
10. Give the report format a name, if you wish to save it. Or press Return, if you do not wish to save it.
11. Type **N** for no more reports, if you wish to exit the report menu option.

Saving Your Data

(Option 9 on Main Menu)

1. Be sure diskette is not write-protected.
2. At Main Menu, choose Option 9: SAVE CURRENT FILE. Press Return.

NOTE: Several other menu options also give you the opportunity to save your data.

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