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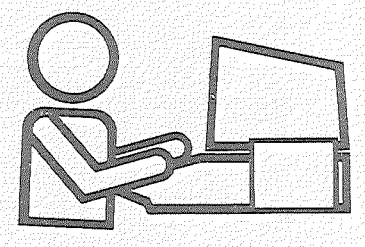

HOW TO OPERATE THE APPLE IIe

By Howard Manthei
and Lee McFadden

Operator's Guide

FlipTrack® Learning Systems

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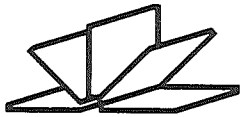

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INTRODUCTION

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

- Use each special key and essential command
- Load and run programs
- Save programs and data
- Copy programs or diskettes
- Protect programs
- Modify programs
- Use your computer as a super calculator
- 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 //e, or for training others, such as staff, colleagues, clients, customers, students or family members. Use it again and again.

Hardware Requirements

System requirements include an Apple //e computer with a Disk II drive, the System Master 3.3 diskette and the Sample Programs diskette. Your TV or monitor can be either color or black and white. A second disk drive is optional, as are a printer, an 80-column card and game controllers.

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 *other media,* 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:

- Color video
- A printer
- A second disk drive
- An 80-column card

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 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 //e Computer
TV or Monitor *(either color or B&W)*
Disk II Drive *(either 1 unit or 2)*
System Master 3.3 Diskette
Sample Programs Diskette

Options:
"Apple Presents . . . Apple" Diskette
Printer
Game Controllers
80-Column Card

Caring for Diskettes

Avoid fingerprints, dust, heat or bending.

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

Store properly in album or box.

Booting from the Power Switch

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

1. Turn TV or monitor on.
2. Put diskette into Disk Drive #1, then close door. *(Insert oval first, label up.)*
3. Turn power switch on. *(Located in back of computer on the left.)*

Note that computer is ready to receive instructions when you see a right bracket] ***(prompt character)*** followed by a blinking square □ ***(cursor).***

(Booting from the power switch is called a ***cold boot.*** *See Page 9 for* ***warm boot*** *from the keyboard.)*

Running a Program

If loading from diskette, type **RUN** PROGRAM NAME [R] *.

If program is already in computer's memory, type **RUN** [R].

Note: Once program is in computer's memory, diskette can sometimes be removed while using program.

* [R] means to press the **RETURN** key. This tells the computer your instruction is complete.

1

Correcting a Mistake

1. Use left and right **arrow keys** to position cursor over mistake.
2. Type over mistake, and use right arrow key to return cursor to end of line before pressing Return.

Some Error Messages

SYNTAX ERROR means computer does not recognize command, as typed. Example: RUM instead of RUN, or **run** instead of RUN.

FILE NOT FOUND means computer does not recognize program name, as typed. Check for spelling, spacing and upper case.

Using a "Menu-Driven" Program

(such as PHONE LIST on Sample Programs diskette)

1. Select menu option by typing number or letter indicated. Then press Return *(sometimes not required).*
2. Read all instructions carefully to learn format of input required, how to return to main menu, how to exit program, etc. These instructions can differ for every program.

Typing Rules

Type all commands and file names with Caps Lock in down position for upper case.

Even with Caps Lock in down position, you must use Shift Keys to access symbols above the numbers and punctuation marks.

Do not use capital "O" for zero or lower case "L" for "1."

"Yes" and "No" answers can usually be abbreviated "Y" and "N."

To **repeat** any key, simply hold it down.

Adjusting Color

1. Type **RUN** COLOR TEST [R] on Sample Programs diskette.
2. Type 1 [R] to view Standard Color Names *(Menu Option #1).*
3. Turn TV auto switch off, volume down.
4. Start with dark screen, and turn up brightness and contrast—or picture—knobs without letting colors "bleed." Use color knob to control intensity and hue knob for color balance.
5. Note that Apple's low resolution graphics offer 16 colors, numbered 0 through 15.

Checking Game Controllers

1. Type RUN COLOR TEST [R] on Sample Programs diskette.
2. Type 4 [R] to view Sketching Screen *(Menu Option #4).*
3. Determine direction of movement for each dial: 1(X) horizontal, 0(Y) vertical. Then use controller buttons to clear screen, change color.
4. Note that Apple's low resolution graphics offer a matrix of 40 rows and 40 columns, numbered 0 through 39 in each direction.

Using Computer without a Diskette

(in calculator mode)

1. Turn on computer.
2. Press Control/Reset to stop disk drive from spinning.
3. Use computer as usual, but without ability to save programs or data.

Note: Avoid inserting or removing a diskette while red light of disk drive is on.

Using the Special Keys

ESC	Escape Key is used with other keys to perform special functions, which can vary from program to program. Example: ESC with arrow keys moves cursor in any direction. *(Press ESC again, or any other key, to turn off cursor movement.)*
TAB	Used in certain programs, such as word processing and data base management, to position cursor on the screen.
CONTROL	Used with other keys to perform special functions, which can vary from program to program. Example: Control/G sounds "bell."
SHIFT	Gives access to capital letters and upper set of characters when held while pressing another key.
CAPS LOCK	When down, lets you type only upper case letters. Does *not* give access to symbols above the numbers and punctuation marks.
OPEN & SOLID APPLES	Used with other keys to perform special functions, which can vary from program to program. Can be used for help messages and game control, as well as for certain Control/Reset commands *(see below).*

Special Keys

ARROW KEYS	Left and right arrow keys used to correct mistakes. When ESC key is pressed, all four arrow keys move cursor without erasing characters.
RETURN	Moves cursor to next line or tells computer your instruction is complete.
DELETE	Used in certain programs, such as word processing, to erase characters.
RESET	Used with other keys to perform the following operations: CONTROL/RESET often stops execution of a program and sometimes reboots the diskette. Stops disk drive from spinning if no diskette is present. OPEN APPLE/CONTROL/RESET always stops execution of a program and always reboots the diskette. This procedure is called a **warm boot.** *(See page 13 for alternate warm boot method.)* CLOSED APPLE/CONTROL/RESET initiates a built-in **diagnostic self-test.** Test should result in "KERNEL OK" message. Otherwise, record error codes and contact dealer for service. Reboot after test is completed. *(Note that stopping a program may result in lost or damaged data. Rebooting and running a self-test always erases memory.)*

Edit Functions

CONTROL X cancels last line typed.
ESC E clears screen from cursor to end of line.
ESC F clears screen from cursor to bottom of screen.
ESC @ clears screen *(similar to HOME command, page 11).*

Setting Up the System

Turn power off before opening computer.

Before touching anything, touch power supply to get rid of static electricity on fingers.

Plug **Disk II Interface Card** firmly into Slot 6 with Drive 1 cable in upper pins and Drive 2 cable in lower pins. Label front of each drive.

Continue . . .

Setting Up the System (continued)

Plug **Printer Interface Card** firmly into Slot 1.

Always be sure components on cards face away from power supply. Secure cables with clamps.

Attach **Game Controllers** to game sockets, as follows: Older 16-pin connectors attach inside; newer 9-pin connectors attach outside *(in back).*

Attach **TV** to antenna leads through RF modulator. *(Internal connection required.)*

Attach **Monitor** directly to external video output jack.

Plug **Cassette Recorder** into external input or output jacks.

Plug **80-Column Card** firmly into Auxiliary Slot.

Using an 80-Column Card

(for optional 80-column text display onscreen)

To turn on the card: *(cursor changes to solid rectangle)*	Type PR#3 R
To switch to 40 columns after card is on:	Type ESC 4 R
To switch to 80 columns after card is on:	Type ESC 8 R
To turn off the card: *(checkerboard cursor returns)*	Type ESC Control-Q R

Arithmetic Symbols

+	to add
-	to subtract
*	to multiply
/	to divide
^	to raise to a power
( )	to control order of operations

Truth Symbols

(1 if true, 0 if false)

<	less than
>	greater than
<=	less than or equal to
>=	greater than or equal to
=	equal to
<>	not equal to

Numeric Keypad *(for speed and accuracy)*

10 numerals in standard calculator format.

Special keys for arithmetic operations, enter, other functions.

Regular keyboard use not affected.

Calculating

1. Use **PRINT** command or **?** key to enter each problem.
2. Press Return instead of using equals sign when answer is desired in calculator mode.
3. Computer rounds answers of more than 9 significant digits and uses scientific notation.

Examples:

```
PRINT 5.653 * 4 + 3.2          Answer:  25.812
PRINT 4.38/3.65 - 1.023        Answer:  .177
  ?   4.1 ^ 5                  Answer:  1158.56201
  ?   0075 >= .00897           Answer:  0
```

Order of Arithmetic Operations *(left to right for each "pass")*

1. Operations inside parentheses, starting with innermost parentheses first.
2. Exponents.
3. Multiplication and division *(without preference for either).*
4. Addition and subtraction *(without preference for either).*

Displaying Text

Type **PRINT** "NAME" R or **?** "NAME" R to display the word NAME.

About 6 lines of text may be displayed following a single PRINT command, using quotation marks.

Clearing the Screen

Type **HOME** R to place the prompt character and cursor in the upper lefthand corner of the screen.

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.

2

Key Ideas from Lesson 2:
USING DISK STORAGE

Displaying the Catalog

Type CATALOG [R] to list the contents of a diskette. If list is too long for one screen, scroll to the end by pressing any key, such as the space bar.

Controlling a Printer

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:

   Type PR#1 [R] to direct all computer output to printer plugged into peripheral Slot No. 1.

   Type PR#0 [R] to stop output to printer.

Interpreting the Catalog

✳ **Asterisk** means 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 on one side of each diskette.)*

A The letter "A" indicates a program written in the **Applesoft** BASIC language. Standard on all Apple II Plus computers. Capable of floating point decimal arithmetic.

I The letter "I" indicates a program written in the **Integer** BASIC language. Language must be loaded from System Master or Sample Programs diskette. Fast execution, especially for graphics, but cannot do decimal arithmetic.

B The letter "B" indicates a program written in **binary code** *(machine language)*. Runs on any Apple computer, using special commands of the form: BRUN. Most efficient in terms of speed and economical use of memory.

T The letter "T" indicates a **data or text file,** not a program at all. It is used by other programs, but cannot be run independently.

Switching Between Applesoft BASIC and Integer BASIC

Before switching can take place, Integer BASIC must be loaded into memory by booting either the System Master or Sample Programs diskette.

Switching is **automatic** when you run a program in either language. Prompt character changes from righthand bracket] *(Applesoft)* to "greater than" symbol > *(Integer)*.

Switching can be done **manually:**

Type FP [R] to switch to Applesoft BASIC from Integer.
Type INT [R] to switch to Integer BASIC from Applesoft.

Note: Switching languages erases any program in memory.

Initializing (or Preparing) Diskettes

1. Boot System Master 3.3 diskette.
2. Type NEW [R] to erase memory.
3. Replace System Master with diskette to be initialized.
4. Type INIT HELLO [R].
5. Check catalog and try booting to verify initialization.

Note: HELLO is the traditional "greeting" program name, but you could use any name.

Booting from the Keyboard

If computer is already on, type either **Open Apple/Control/Reset** or PR#6 [R] to boot whatever diskette is in the disk drive. PR#6 method assumes disk drive is plugged into peripheral Slot No. 6.

*(See Page 6 for **cold boot** method from the power switch.)*

Customizing the Initialization Procedure

1. Boot System Master 3.3 diskette.
2. Type **NEW** [R] to erase memory.
3. Replace System Master with diskette to be initialized.
4. Enter the following program, as an example:
   10 HOME [R]
   20 PRINT "YOUR NAME TODAY'S DATE" [R]
   30 PRINT "PURPOSE OR CONTENT" [R]
   40 END [R]
5. Type RUN [R] to check screen format.
6. If corrections are needed, type **LIST** [R] 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, V1** [R] to assign Volume No. 1 to diskette. *(Without appending V1, the highest volume number—254—will be assigned automatically.)*
8. Check catalog and try booting to verify initialization.

Note: You may devise any identification program you wish. In fact, any program in your computer's memory at the time you initialize a diskette will run automatically when you boot that diskette.

Copying an "A" or "I" Program from One Diskette to Another *(See Lesson 3 for copying "A," "I," "B" or "T" files.)*

1. Put source diskette into disk drive.
2. Type **LOAD** PROGRAM NAME [R].
3. Replace source diskette with initialized diskette to which program is being copied.
4. Type **SAVE** PROGRAM NAME [R].
5. Check catalog or run program to verify transfer.

Note: Program still exists on original diskette.

Copying an "A" or "I" Program Using Two Disk Drives

(See Lesson 3 for copying "A," "I," "B" or "T" files.)

1. Put source diskette into Drive 1 *(the default drive).*
2. Put initialized diskette to which program is being copied into Drive 2.
3. Type **LOAD** PROGRAM NAME. [R] *(Computer will automatically use Drive 1 unless instructed to do otherwise.)*
4. Type **SAVE** PROGRAM NAME, D2. [R] *(By appending D2, you will direct the computer to Drive 2. Computer will continue to use Drive 2 until redirected to Drive 1.)*
5. Check catalog or run program to verify copy.

Note: If you direct the computer to an empty disk drive, you will receive an I/O ERROR *(input/output error)* message.

Some Error Messages

FILE LOCKED means the file is protected against accidental deletion or change. Locked files are marked by an **asterisk** * in the catalog display.

WRITE PROTECTED means the entire diskette is protected against accidental erasure or change. Example: You cannot unlock, save or delete programs on the System Master diskette because there is no notch on the side. You can "write protect" any notched diskette by putting an adhesive tab over the notch.

FILE TYPE MISMATCH means the computer cannot use the type of file you have named with the command you have given. Example: You cannot RUN a "T" *(text or data)* file.

Unlocking and Locking Programs

Type **UNLOCK** PROGRAM NAME [R] to permit changes or deletions.

Type **LOCK** PROGRAM NAME [R] to prevent writing over a file or accidental deletion.

Verify that file is **locked** *(* asterisk)* or **unlocked** *(no asterisk)* by checking catalog display.

Deleting Programs

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

Guidelines for 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** [R]	UNLOCK PROGRAM,**D1** [R]
LOAD PROGRAM,**D1** [R]	LOCK PROGRAM,**D2** [R]
SAVE PROGRAM,**D2** [R]	DELETE PROGRAM,**D2** [R]
RUN PROGRAM,**D1** [R]	RENAME OLD,NEW,**D1** [R]

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.

Changing a Program Name

Method 1: When transferring a program from one diskette to another, **LOAD** the old name, but **SAVE** under a new name.

Method 2: Type **RENAME** OLD NAME,NEW NAME [R] to change a program name without transferring from one diskette to another.

Note: You can rename any kind of file—Applesoft, Integer, Binary, or Text—provided it is unlocked.

Regardless of method, verify the new name in the catalog.

Putting Secret Codes in Program Names

Use either renaming method just described, but put invisible characters anywhere in the name by holding down the CTRL key and typing any other letters or symbols or numbers. *(Exceptions: Some keys cannot be used with CTRL, such as X, M, H, etc.)*

The computer will remember where you have placed the CTRL characters, but they will not show in the name or on the catalog display. However, anyone trying to use the program without including them will get a FILE NOT FOUND message and be unable to use the program.

Using Both Sides of a Diskette

Cut a matching notch out of the opposite edge of a diskette by using a second diskette as a model. Outline where the notch should be with a felt tip pen. Then use a sharp razor blade or knife to cut it out.

If you can initialize and catalog the back side, the diskette is probably safe to use—at least for making back-up copies.

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.

3

Key Ideas from Lesson 3:

MAKING COPIES AND PROGRAM CHANGES

Duplicating Diskettes with the COPY Program

(1 disk drive)

The COPY program copies the contents of an entire diskette *("A," "I," "B" and "T" files)*, provided it has not been specially programmed to prevent duplication. Procedure:

1. Boot System Master diskette.
2. Type RUN COPY [R].
3. Set ORIGINAL SLOT: DEFAULT = 6 [R]
   DRIVE: DEFAULT = 1 [R]
4. Set DUPLICATE SLOT: DEFAULT = 6 [R]
   DRIVE: DEFAULT = 1 [R] *(Override DEFAULT=2.)*
5. Put **original** diskette to be copied in disk drive.
6. Follow prompts for swapping of **original** and **duplicate** diskettes through several cycles. *(Be sure duplicate has not been "write protected.")*
7. When finished, CATALOG [R] the copy to verify duplication.
8. Use felt tip pen to label diskette.

Duplicating Diskettes with the COPY Program

(2 disk drives)

1. Boot System Master diskette in Drive 1.
2. Type RUN COPY [R].
3. Set ORIGINAL SLOT: DEFAULT = 6 [R]
   DRIVE: DEFAULT = 1 [R]
4. Set DUPLICATE SLOT: DEFAULT = 6 [R]
   DRIVE: DEFAULT = 2 [R]
5. Put **original** diskette *(to be copied)* in Drive 1 and **duplicate** in Drive 2. *(Duplicate must not be "write protected.")* Press Return.
6. To verify copy, type CATALOG, D2 [R].
7. Use felt tip pen to label duplicate.

3

Copying Files with the FID (or FILEM) Program

(1 disk drive)

The FID *(or FILEM)* program copies any type of file *("A," "I," "B" or "T")* without having to copy the entire diskette. *(See LOAD and SAVE commands on page 14 for easiest way to copy "A" and "I" files.)*

1. Boot System Master diskette.
2. Type BRUN FID [R] or RUN FILEM [R]
3. Type 1 [R] for Copy Files option.
4. Set SOURCE SLOT 6 [R]
   DRIVE 1 [R]
   DESTINATION SLOT 6 [R]
   DRIVE 1 [R]
5. Enter FILENAME [R]. *(You may use equals sign as "wild card.")*
6. With "wild card," answer Y or N to "prompting" question.
7. Put **source** diskette in disk drive. Press Return.
8. Put **destination** diskette in disk drive. Press Return. *(Be sure destination diskette has been initialized.)*
9. Return to FID menu after file(s) have been copied.
10. CATALOG **destination** diskette, using Option 2.

Cataloging Files with FID (or FILEM)

(1 or 2 disk drives)

Menu Option 2 allows you to see catalog without exiting program.

1. Type 2 [R] for Catalog option.
2. Set SOURCE SLOT 6 [R]
   DRIVE 1 [R] or DRIVE 2 [R]
3. Return to FID menu.

Using "Wild Card" File Names with FID (or FILEM)

Equals sign (=) can take the place of any part of a file name. 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.

Copying Files with FID (or FILEM)

(2 disk drives)

1. Boot System Master diskette in Drive 1.
2. Type BRUN FID [R] or RUN FILEM [R]
3. Type 1 [R] for Copy Files option.
4. Set SOURCE SLOT 6 [R]
   DRIVE 1 [R]
   DESTINATION SLOT 6 [R]
   DRIVE 2 [R]
5. Enter FILENAME (R). *(You may use equals sign as "wild card.")*
6. With "wild card," answer Y or N to "prompting" question.
7. Put **source** diskette in Drive 1 and **destination** diskette in Drive 2. Press Return. *(Be sure destination diskette has been initialized.)*
8. Return to FID menu after file(s) have been copied.
9. To verify copy, CATALOG the **destination** diskette in Drive 2.

Switching Between Drives with FID (or FILEM)

(2 disk drives)

Computer will continue to use last default slot and drive until redirected. **Option 1** *(Copy Files)* always asks for new default values, but the other menu options do not. If you need to switch between drives for any option other than copying, use **Option 7** *(Reset Slot and Drive) to cancel existing default values.*

Example: To check Drive 1 catalog after checking Drive 2 catalog, use Option 7 to cancel Drive 2 default.

Checking Space on Disk With FID (or FILEM)

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

Other FID (or FILEM) Menu Options

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 [R]. *(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.

Adding Integer BASIC to a Diskette

1. Replace HELLO program with HELLO from System Master diskette.
2. Copy both LOADER.OBJ0 and INTBASIC files from System Master diskette.

Listing Lines in a Program

The **LIST** command can be used to display an entire program, a range of lines, or a single line.

Examples: **LIST 340** [R] displays Line 340 only.
LIST 270,370 [R] displays a range.
LIST [R] displays an entire program.

Note: If the program listing is too long for a single screen display, the listing will automatically scroll from beginning to end.

Modifying a Program

1. Type UNLOCK PROGRAM NAME [R].
2. Type LOAD PROGRAM NAME [R].
3. TYPE LIST [R], followed by line number to be modified.
4. Retype each line in which a change is to be made. *(Include the line number.)*
5. Press Return when finished typing the line. This inserts the new or modified line into the program.
6. Type LIST [R], followed by the line numbers modified, to be sure they were entered correctly.
7. Type RUN [R] to be sure the program runs correctly. *(Do not follow RUN with the program name, or you will load the unmodified version from the diskette, thus losing the modified version in the computer's memory.)*
8. Type SAVE PROGRAM NAME [R] to replace the original version of the program with the new. *(Typing a new program name saves the new version, as well as the original.)*
9. Type LOCK PROGRAM NAME [R].

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.

Stopping and Starting a Program Listing

CTRL S stops and starts the scrolling of a lengthy program listing.

CTRL C aborts the listing and restores the prompt character and blinking cursor. It also can be used to exit a program. May require Return. *(See pages 7-8 for other exit options.)*

Running a 13-Sector Diskette

(on a 16-sector system)

1. Boot System Master diskette.
2. Type BRUN **BOOT13** [R] or RUN **START13** [R].
3. Replace System Master diskette with 13-sector diskette, and press Return.

Converting Files from a 13-Sector Diskette

(onto a 16-sector diskette).

1. Boot System Master diskette.
2. Type BRUN **MUFFIN** [R] or RUN **CONVERT13** [R].
3. Type 1 [R] to Convert Files.
4. Set SOURCE SLOT 6 [R]
   DRIVE 1 [R]
   DESTINATION SLOT 6 [R]
   DRIVE 1 [R] or DRIVE 2 [R]
5. Enter FILENAME [R] with or without "wild card."
6. With "wild card," answer Y or N to "prompting" question.
7. Follow prompts for insertion of 13-sector **source** and 16-sector **destination** diskettes. *(Be sure new destination diskette has been initialized as a 16-sector diskette.)*
8. Boot 16-sector **destination** diskette to check it out.
9. If 16-sector diskette does not boot, some program changes may be necessary.

Note: Old 13-sector diskettes may be reinitialized in a 16-sector format when you are ready to erase them.

Modifying Screen Displays

SPEED= varies the rate at which characters are displayed. Simply set SPEED equal to any whole number from 0 (very slow) to 255 (almost instantaneous).

Example:
```
10 SPEED = 100 [R]
20 PRINT "TITLE" [R]
30 SPEED = 255 [R]
```

Statements display TITLE at slow reading speed, one character at a time, then reset display to normal.

INVERSE produces dark characters on a light background.

NORMAL switches off INVERSE mode.

Example:
```
10 INVERSE [R]
20 PRINT "TITLE" [R]
30 NORMAL [R]
```

Statements display TITLE in inverse letters, then reset display to normal.

FLASH makes characters alternate between light on dark and dark on light.

NORMAL switches off FLASH mode.

Example:
```
10 FLASH [R]
20 PRINT "TITLE" [R]
30 NORMAL [R]
```

Statements make the word TITLE flash, then reset display to normal.

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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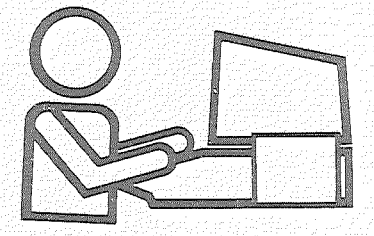

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Operator's Guide

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