

OWNER'S MANUAL

The Imagination Machine



Personal Computer System
From **APF** Electronics

The Imagination Machine

With the APF Personal Computer System your life will never be the same. Computer power that cost millions of dollars only a few years ago is now yours with the IMAGINATION MACHINE and your color or black and white TV.

And what can you do with your new personal computer? The possibilities are endless...

IMAGINE a full-time assistant to help you organize your home finances and budget.

IMAGINE a personal tutor to make learning new skills easier and faster for you and your family.

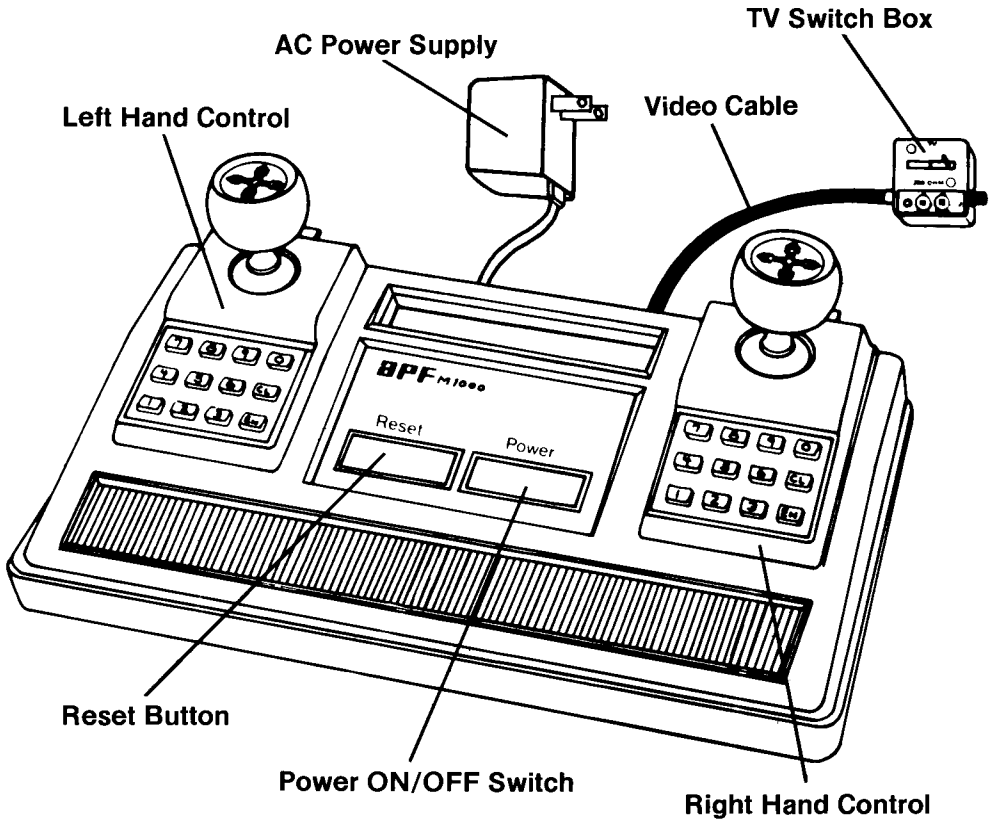
IMAGINE a home entertainment system that uses the full power of a computer to create interactive adventures.

The APF Personal Computer is designed to match your imagination with optional computer programs that are useful, educational, and fun.

CONTENTS

	PAGE
CONNECTING THE MP 1000 CONSOLE.....	4
CONNECTING THE COMPUTER CONSOLE.....	8
USING PLUG-IN CARTRIDGES.....	10
LOADING PROGRAMS FROM CASSETTES.....	12
WRITING YOUR OWN PROGRAMS.....	14
SAVING PROGRAMS ON CASSETTES.....	16
TROUBLE SHOOTING.....	18

CONNECTING THE MP 1000 CONSOLE

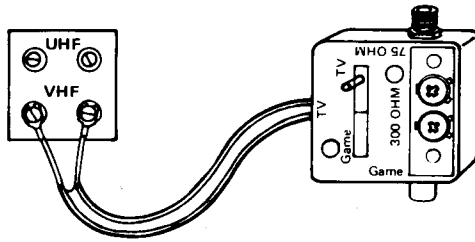


Connect TV Switch Box

The switch box allows you to watch either regular TV programs, or to use the MP 1000. To attach the switch box:

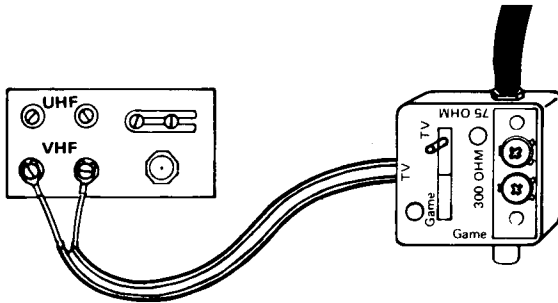
- Make sure the television is turned off.
- Using a screwdriver, remove the wires going to the VHF input on your TV set. Connect these two wires to the two screws on the switch box.
- Connect the twin lead wires that are permanently attached to the switch box to the VHF inputs on your TV.

NOTE: Make sure you switch the control lever on the switch box from TV to game when you use the MP 1000, and back to TV when you want to watch TV programs.



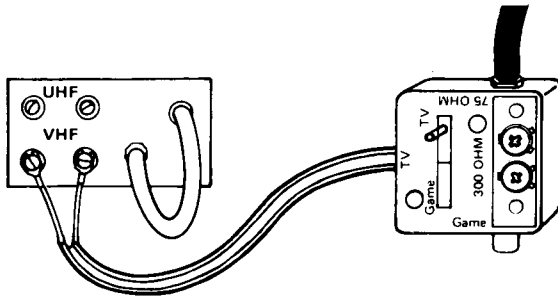
If the rear of your TV looks like this:

- Disconnect flat wire from TV and connect to "300 OHM" screw terminals on the switch box.
- Connect the twin lead wires that are permanently attached to the switch box to the VHF inputs on your TV.



If the rear of your TV looks like this:

- Move slider to make connection between screws.
- Disconnect cable from TV and plug into switch box at "75 OHM" connector.
- Connect the twin lead wires that are permanently attached to the switch box to the VHF inputs on your TV.



If the rear of your TV looks like this:

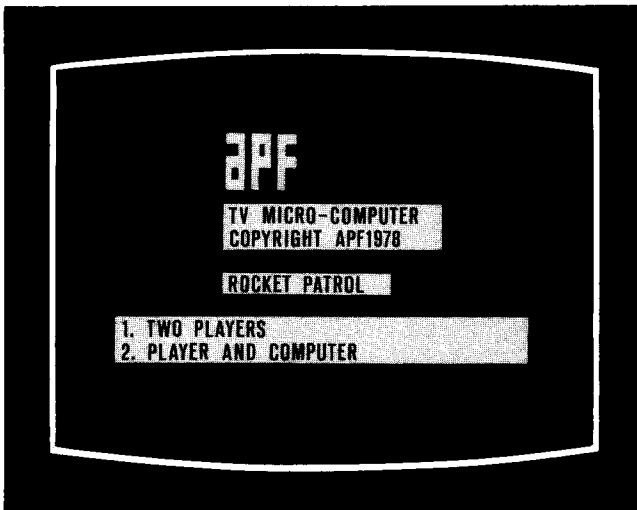
- Disconnect cable from TV and plug into switch box at "75 OHM" connector.
- Connect short loose-hanging cable from TV to the other input connector on back of TV set.
- Connect the twin lead wires that are permanently attached to the switch box to the VHF inputs on your TV.

Connect Video Cable

- Plug the video cable from the MP 1000 into the TV switch box game socket.
- Turn on TV and select channel 3.
- Make sure the control lever on the switch box is turned to the GAME position.

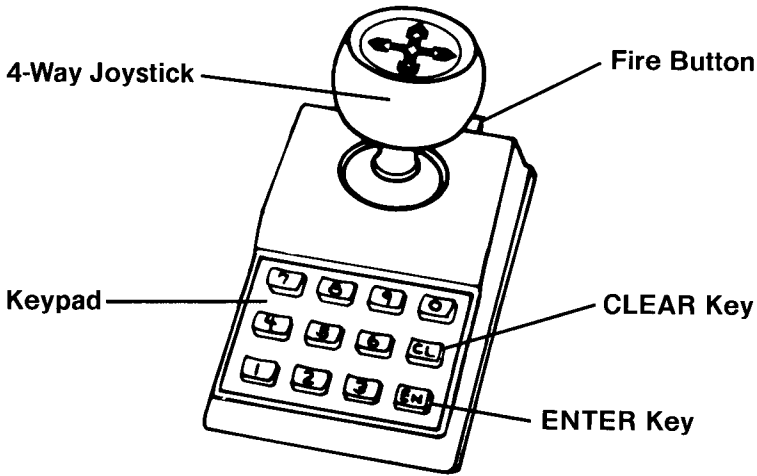
Connect AC Power Supply (Model T-7800)

- Plug AC power supply into 110/120 VAC outlet.
 - Plug AC power cable into the socket on the right rear of the MP 1000 console.
 - Press power ON/OFF switch on console to turn MP 1000 on.
 - If your TV has automatic fine tuning, turn it off and adjust TV for best picture.
- Your screen will show ROCKET PATROL menu.



NOTE: Using an AC power supply other than the T-7800 can cause permanent damage to your microcomputer console, and void your warranty.

MP 1000 Console Check Out



- Press button one or button two on either hand control. Rocket Patrol game will start.
- Use joystick (left and right) and FIRE button to test system. If game starts and hand controls respond, turn to the next section (page 8) and connect the computer keyboard.

Rocket Patrol

This can be played by one or two players. The object of the game is to destroy the most space ships within a one minute period.

One Player

In this mode your opposition is the computer. For the first minute the computer will fire at the space ships trying to accumulate the most points. For the second minute, you have your chance to beat the computer. To fire a missile, push the fire button located on the rear of the controller. You have the added advantage of being able to move your firing station to the left or right along the bottom of the screen with the joystick.

When a missile is fired or a rocket is destroyed the sounds can be adjusted by the volume control on your TV.

The score for the computer will appear on the upper right side of the screen. Your score will be on the left side.

Two Players

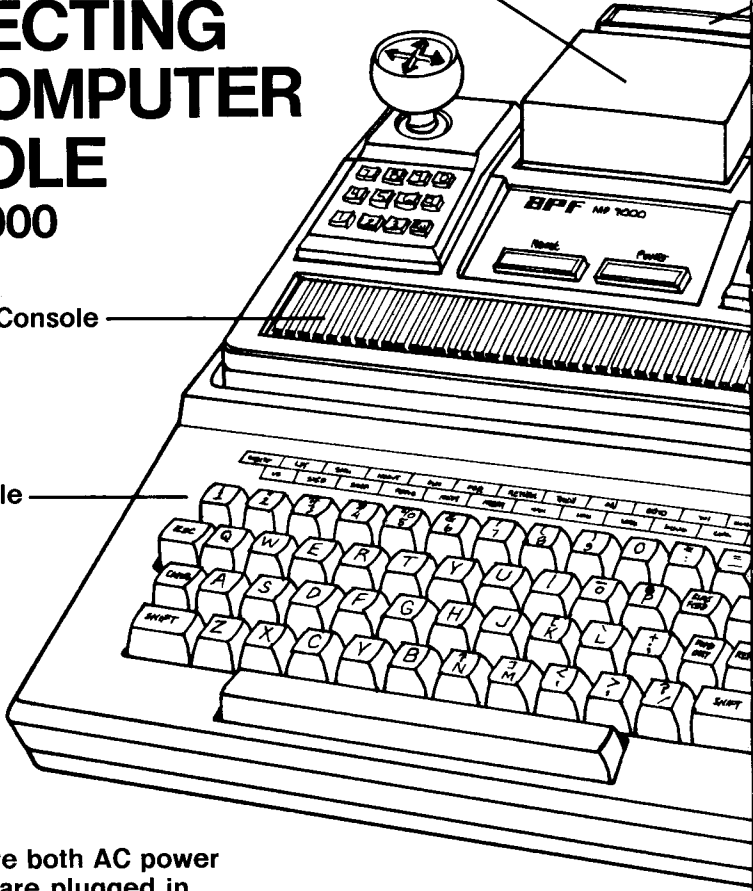
In this mode, you are competing against another person. Each player is given one minute time period. The player with the highest score wins.

CONNECTING THE COMPUTER CONSOLE and MP 1000

Console Connector

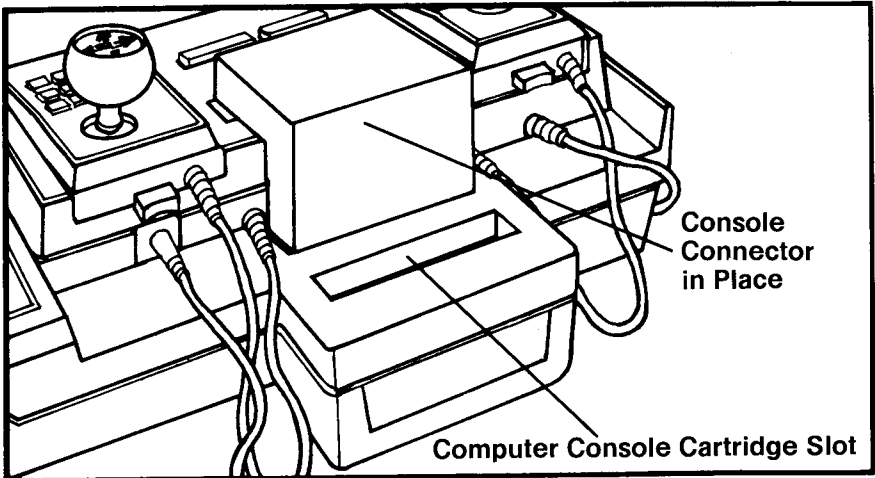
MP 1000 Console

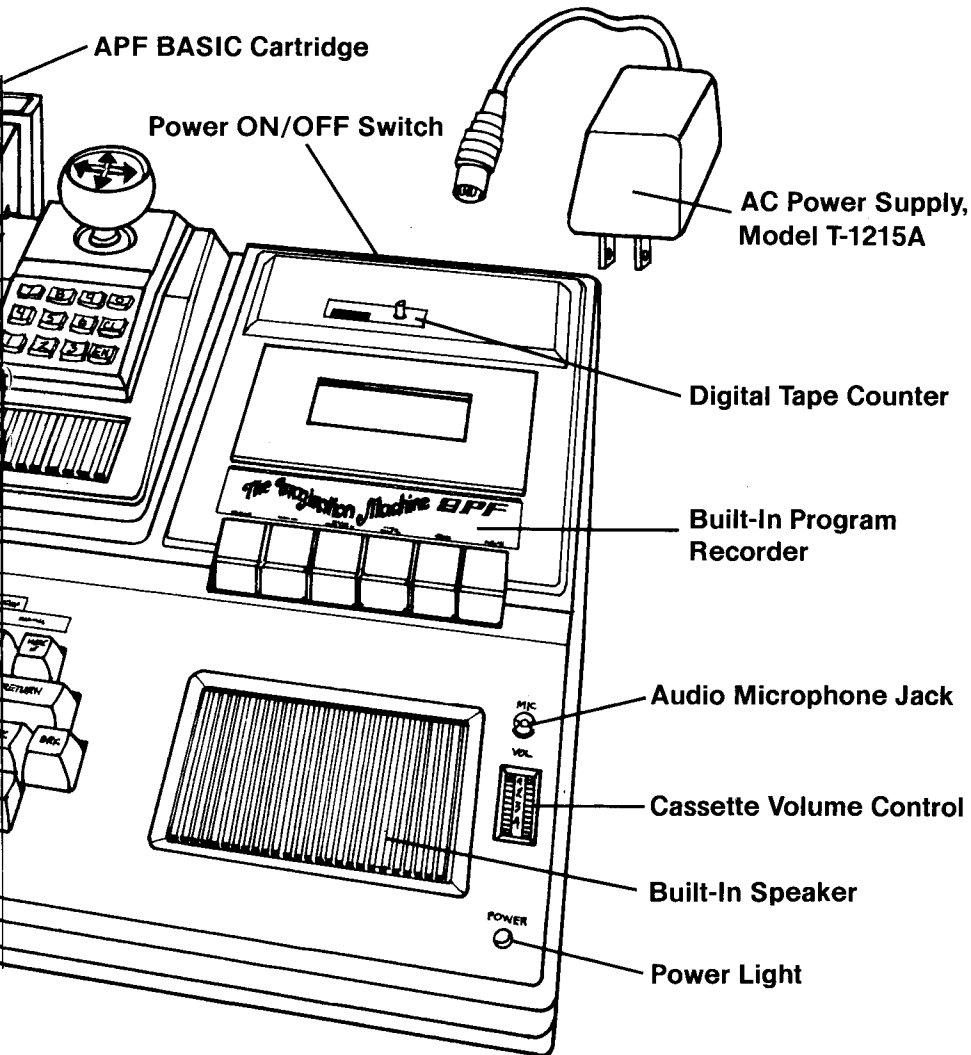
Computer Console



NOTE: Make sure both AC power supplies are plugged in.

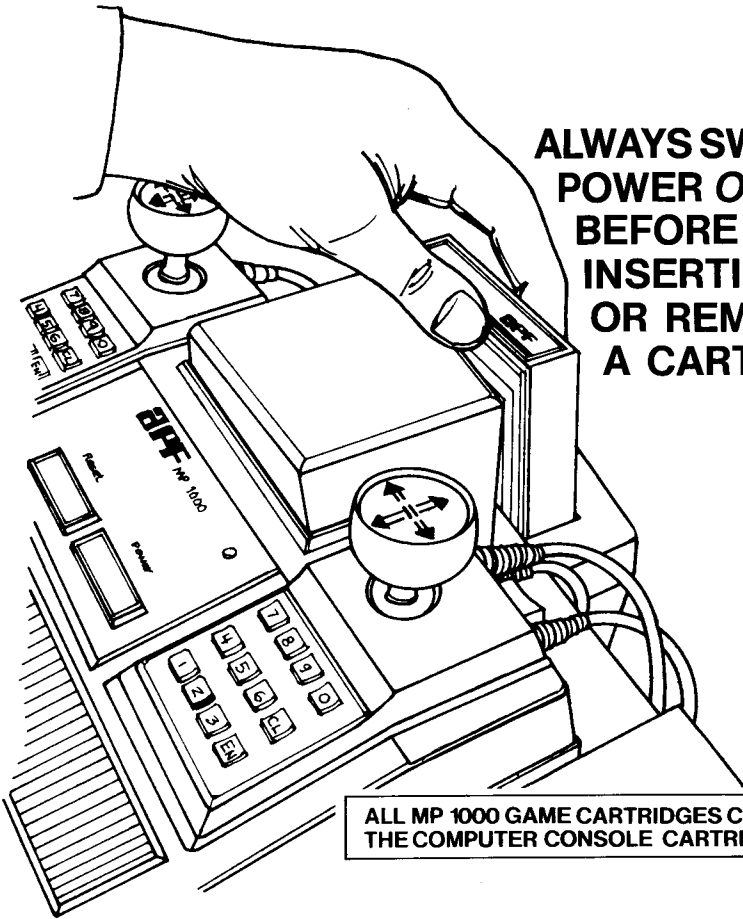
REAR VIEW





- If you have not already connected and operated the MP 1000 console, please follow the installation and check out instructions on page 4.
- Turn off the MP 1000 by pressing the ON/OFF switch.
- Place the MP 1000 Console into the cavity on the computer console.
- To electrically connect the MP 1000 Console and the computer console, insert the metal grounding clip into the MP 1000 cartridge slot after you have **CAREFULLY READ THE INSTRUCTIONS ATTACHED TO THE GROUNDING CLIP**. After the grounding clip is in place, carefully insert the console connector, as shown at left.
- Plug the computer AC power supply (Model T-1215A) into 110/120 VAC outlet.
- Plug AC power cable into the socket on the right rear of the computer console. Make sure the pins on the connector line up properly with the holes in the socket.

Using Plug-In Cartridges



**ALWAYS SWITCH
POWER OFF
BEFORE
INSERTING
OR REMOVING
A CARTRIDGE!**

ALL MP 1000 GAME CARTRIDGES CAN BE USED IN THE COMPUTER CONSOLE CARTRIDGE SLOT.

- Turn both MP 1000 and computer console power OFF.
- Hold the cartridge so that the name is towards you, and reads right side up.
- Insert the cartridge carefully into the computer console cartridge slot in the reartop of the computer console.
- Be sure the cartridge is firmly seated, but do not try to force it.
- If the cartridge is not properly seated, pull it out, and re-insert it into the slot.
- When removing the cartridge, check to see that all power is off, and pull the cartridge straight up out of the slot.
- Each cartridge comes with complete operating instructions.

Computer Check-Out

- Insert the APF BASIC cartridge into the computer console cartridge slot.
- Press power switch to turn on MP 1000 Console.
- Press power switch to turn on computer console power light.
- Press RESET, your TV will display: APF BASIC.

NOTE: If your TV does not show APF BASIC, Check all connections and see that the console connector is properly seated and press RESET again. Also make sure both power switches are turned on.

- Press the En key on either hand control. Your TV will show a small square (called the cursor) in the upper left corner of your TV screen.
- Type HELLO on the keyboard. The cursor will move right as the letters are printed on the screen.
- Press the **RETURN** key. The computer will say WHAT this is because HELLO is not one of the words your computer understands.
- To get your computer to print HELLO, you must give it a command, like PRINT.
Type:

PRINT HELLO

and press **RETURN** . The computer will print 0 . This time the computer didn't understand because you didn't use quotation marks around the word you wanted to be printed on the screen. Now Type:

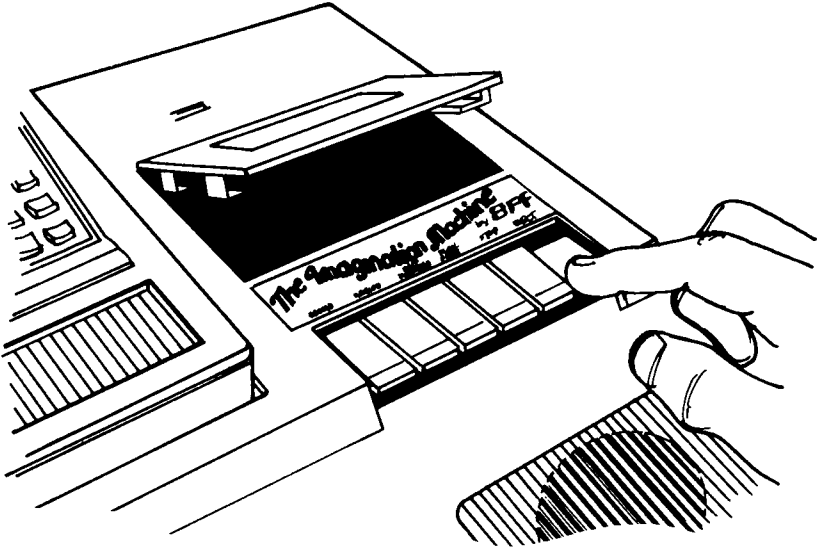
PRINT "HELLO"

and press **RETURN** . Your computer now understands what you wanted, and you now know how to print words on your TV with your computer.

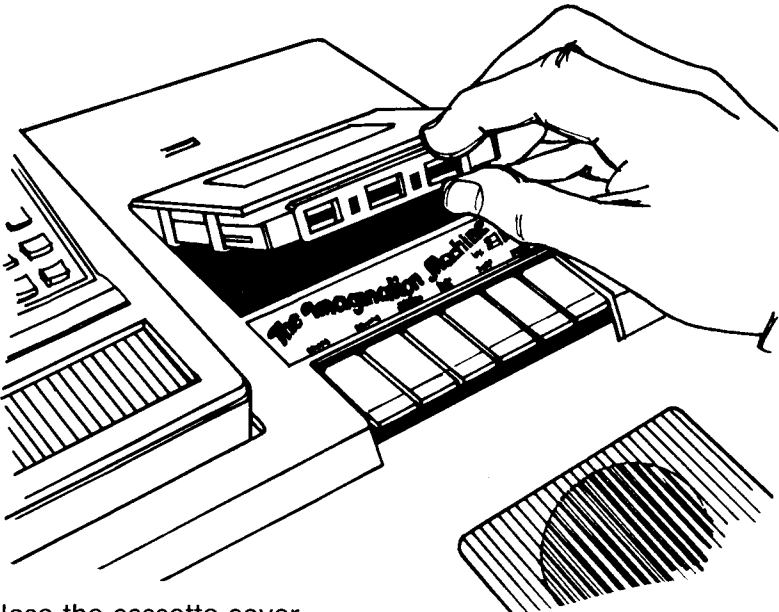
Now you can continue learning more on how to program your computer by going to page 14, or go onto the next section to learn about loading programs from the cassette.

Loading Programs from Cassettes

- With the APF BASIC Cartridge inserted into the computer console cartridge slot, turn on the MP 1000 Console and your computer console (P 11).
- Press the En key on hand control.
- Press the EJECT button to open the cassette cover.



- Insert a pre-recorded cassette with the side you wish to play facing up.

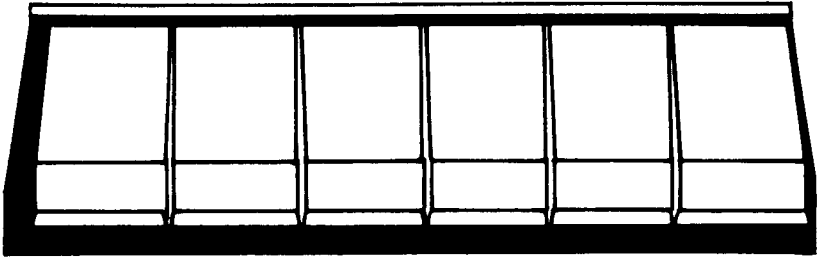


- Close the cassette cover.

The Imagination Machine

by **APF**

RECORD REWIND FAST FORWARD PLAY SAVE STOP EJECT



NOTE: Specific program instructions come with each program cassette. Please read the instruction folders carefully.

1. Hold down the CTRL key and press **RETURN** or type CLOAD on the computer console keyboard.
2. Press **RETURN**. (The screen will show REWIND TAPE, PRESS PLAY, THEN **RETURN** KEY.)
3. Press REWIND. When the tape stops, press the STOP button.
4. Press the PLAY/SAVE button on the cassette player and then immediately press **RETURN**.
 - The tape will run automatically as the program loads into the computer. If there is audio on the tape, adjust the volume control next to the keyboard speaker to a comfortable level.
 - When the word OK appears on the left side of the screen, type RUN and press **RETURN** to begin.
 - If OK does not appear on the screen, repeat steps 1 through 4.

Adjusting Audio Volume

- When a program is loading into the computer from a cassette it may have an audio sound track.
- Adjust the volume by turning the VOL control located next to the built-in computer console speaker.
- Sounds may also be built into the computer program, in which case they would play through the TV speaker.
- To adjust the sounds from your TV, turn the VOL knob on the front of your TV set.

WRITING PROGRAMS IN BASIC

With the APF BASIC Cartridge inserted, the Imagination Machine can run programs written in BASIC. This computer language uses words like RUN and GOTO to explain the programmer's ideas to the computer. Here's how to tell the computer to print HELLO on the screen:

Type this on the keyboard:

PRINT "HELLO"

If you make a mistake, use the special RUB OUT key to back up and correct it. When you press the **RETURN** key the computer will print HELLO.

Now ask your computer to do some arithmetic. Type this on the keyboard:

PRINT 2 + 3

When you press **RETURN** the computer will figure out the answer and print it. This way of using your computer is like using a calculator. Just remember to type PRINT in front of what you want to know and to press **RETURN** when you're done. To add, subtract, multiply, divide and raise a number to a power, use these keys: + - * / ^ . Now ask your computer to print a few more examples and remember to press **RETURN** after each one.

PRINT 125 - 43 + 17

RETURN

PRINT (5 - 3) * 6

RETURN

PRINT 44 / (2 + 9)

RETURN

PRINT 2 * 3

RETURN

A computer program is a numbered list of instructions. Copy this program into your computer by typing each line exactly as shown below. Press **RETURN** at the end of each line.

10 A=10

RETURN

20 PRINT A

RETURN

30 A=A-1

RETURN

40 If A=0 GOTO 60

RETURN

50 GOTO 20

RETURN

60 PRINT "BOOM!"

RETURN

70 END

RETURN

You can use the RUB OUT key to correct an error before you press the **RETURN** key. If you notice an error after you have pressed **RETURN**, you must retype the complete line to correct the error.

When you have finished typing your program, type LIST and press **RETURN**. The computer will list your program so you can check it.

If your program matches the one in the book, type RUN and press **RETURN** . If not, retype the line that needs to be corrected. When this program runs, the computer prints 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, BOOM! on the screen.

How this program works.

In the first line the computer sets the value of A equal to ten. Then the value of A is printed on the screen. In line 30, A is reduced by one. Line 40 is a test. If A is not zero, the computer goes back to line 20, prints the value of A, and reduces A by one. If A has reached zero, the computer goes to line 60, prints BOOM! on the screen, and stops.

To see the program in your computer, type LIST and press **RETURN** . To see what the program *does*, type RUN and press **RETURN** . You can LIST and RUN any BASIC program you have entered on the keyboard or loaded in from the built-in cassette recorder.

You can also write your own computer programs to play music, draw pictures on the TV screen, solve problems, compute your taxes, create games, or almost anything else you can imagine.

The *APF BASIC Language Reference Manual*, included with the IMAGINATION MACHINE lists all the commands, functions, and features required to create extensive programs for any personal, educational or business applications.

Optional Programming Guide (Not Included)

BASIC Tutor™ is a complete course that makes learning to write your own programs fast, easy and fun.

The unique error-correcting feature helps you eliminate mistakes as you learn.

BASIC Tutor is a complete learning system. Programming aids and lessons on cassettes combine with the illustrated guide book to help you explore your computer and discover many of the things it can do. You can select any area of interest and BASIC Tutor takes you step-by-step and shows you what to do and how to do it.

You will also learn how to enter programs from books and magazines and even improve them to meet your specific requirements.

Registration Card

Please fill out and mail your registration card now so we can keep you informed of future programs and hardware expansion.

For more information, contact your dealer or write to APF Electronics, N.Y., N.Y. 10022.

Saving Programs on Cassettes

- You can save any BASIC program in your computer by recording it on a blank cassette tape.
- RUN your program to make sure it operates properly.
- Press the EJECT button to open the cassette cover.
- Insert a blank cassette with the side you wish to record your program on, facing up. The cassette should be labeled so you will know which program it contains.
- Close the cassette cover.
- Type CSAVE and press **RETURN** or press CTRL and LINE FEED and then press **RETURN**. The screen will show REWIND TAPE, PRESS PLAY, THEN **RETURN** KEY.
- Press REWIND. When the tape stops, press the STOP button.
- Press the PLAY/SAVE button only, *DO NOT* press the RECORD button (it only is used when recording audio).
- The tape will run automatically as the computer saves the program on tape in two sections; first it will save whatever is showing on the TV screen and then it will save the program itself.
- When the program has been recorded the cursor will appear on the screen, and the recorder will stop.
- It is a good practice to save two or three copies of a program.
- When you CLOAD your program the computer will display the recorded TV image first, while the program is being loaded into memory.

NOTE: Only use quality recording tapes. Avoid using discount tapes.

CARE OF YOUR COMPUTER

Please follow these common sense tips to keep your computer running at maximum efficiency:

- Never use any other A.C. Power Supply than the ones specifically designed for your unit.
- As with all fine equipment, protect your APF unit from shock, dirt, dampness, and abrasion. Never clean the unit with solvents such as paint thinner, use only a water dampened soft cloth.
- Never attempt to take your unit apart, this should be done only by qualified APF Service personnel. Any tampering with your unit will VOID your warranty.
- Always turn all POWER OFF before inserting or removing any cartridges.
- Don't try to force the cartridges into the Cartridge Slot.
- Your cartridges are fully enclosed and protected from normal wear and tear. However, care should be taken not to spill liquids on them.
- Do not pour liquids into the Cartridge Slot or onto the keyboard.
- Do not expose the Console, Controllers, or Cartridges to excessive or extreme heat.
- Do not pick up the console unit by the controller cables.
- Turn all POWER OFF when not in use.
- Never leave tape cassettes in the cassette player when not in use.
- Always rewind cassette tapes and keep in storage box.
- Never expose cassette tapes to extreme heat or a magnetic field like either A.C. Power Supply.

NOTE: To avoid the possibility of leaving phosphor-memory images on your TV screen, don't leave a static picture on your TV for an extended period of time.

TROUBLE SHOOTING

SYMPTOM	CAUSE & REMEDY
<p>No image on TV screen or whitish-gray screen.</p>	<p>Make sure antenna Switch Box is set to GAME position, is properly connected to TV, and has video cable properly inserted. TV on channel 3. A.C. Power Supplies should be plugged into wall outlet and computer. Check ON/OFF Switch on both consoles. Adjust TV fine tuning control. Turn off AFC control.</p>
<p>No Regular TV Programs</p>	<p>Switch Box should be set to "TV" not "GAME". Antenna Wire should be properly attached to 300 OHM screws on Switch Box. Twin lead wire should be attached to rear of TV.</p>
<p>Fuzzy image like weak TV station signal.</p>	<p>Check connections at antenna terminals of TV set or Switch Box.</p>
<p>If you press RESET and garbage appears on the screen.</p>	<p>Check console connector. Check both power supplies and connections. Make sure both power switches are on.</p>
<p>Rocket Patrol shows on screen - Basic does not appear.</p>	<p>Press RESET. Check console connector. Check to see if Basic Cartridge is inserted correctly.</p>

SYMPTOM	CAUSE & REMEDY
Image unsharp, unsteady	Adjust horizontal control on TV or adjust vertical control on TV. Tune fine-tuning control on TV set.
Top and bottom borders not equal distance from top and bottom edge of TV picture tube.	Adjust vertical height control on TV set.
Program stops running and garbage appears on screen.	Power OFF both consoles and restart.
No color on Color TV	Turn off auto fine tune, turn TV color control up, fine tune TV.
No sound from TV	Turn TV volume up or tune TV.

NOTE: Due to differences in color circuitry on various makes of TV receivers; activating the reset button of the MP 1000 may not always clear and reset the screen properly. If this occurs please turn the MP 1000 off for 2-3 seconds, and turn on again. On some receivers it may be necessary to repeat this 2-3 times.

WARRANTY

FULL THREE MONTH WARRANTY

APF will repair, adjust and/or replace (at its option) defects in material or workmanship, without charge, for a period of three (3) months from the date of first purchase, unless caused by the unreasonable use of this product.

To obtain service under this warranty, return this product to your Dealer with evidence of date of purchase, or return it directly to APF Service, prepaid, with proof of purchase date.

This warranty gives you specific legal rights which vary from state to state.

APF shall have no liability or responsibility to customer or any other person or entity with respect to any liability, loss or damage caused or alleged to be caused directly or indirectly by computer equipment or programs sold by APF, including but not limited to any interruption of service, loss of business or anticipatory profits or consequential damages resulting from the use or operation of such computer or computer programs.

**APF SERVICE CENTER
43-28 37th AVENUE
LONG ISLAND CITY NY 11101**

APF ELECTRONICS, INCORPORATED

NEW YORK, N.Y. 10022

PRINTED IN HONG KONG