

MP Software **GRAPHICS** **PACKAGE plus**



*Includes High Resolution Drawing,
Shape Table Design,
and 2 demonstration programs: Slot Machine and Applesoft Invaders.*

With the High Resolution Drawing program you can use any of the Apple Hi-Res colors for drawing, with the paddles, or for your background. You can draw a line connecting any pair of points on the screen, fill areas on the screen, or use any of a set of nine "brushes" provided (or define your own brushes). You can also draw with, or plot, shapes that you define, with the capability of rotation or scaling. Furthermore, you can save drawings and they can be recalled by ANY other program. That means you can create graphics that your other programs will be able to use!

The Shape Table Design program allows you to define shapes without having to worry about binary and hexadecimal coding, as described in the Apple reference manuals. Shapes are defined in low resolution graphics mode, with the paddles or by keystroke. The program makes the necessary conversions to a high resolution shape. Shape tables created with this program can be used by the High Resolution Drawing program, or they can be used directly by your own programs.

The High Resolution Drawing program will recognize the following commands:

L : Line Mode. Set your blinking cursors on two points, push one of the paddle buttons, and a line is drawn connecting the points. The ending point of the line becomes the starting point of the next line. If you want to change the starting point, position the movable cursor with the paddles and press the other paddle button.

F : Fill Mode. This is basically the same as Line Mode, except when a line is drawn, the starting point does not change. This means that if you hold down the button that draws the lines while moving the cursor, you will fill in an area.

P : Paint Mode. After choosing this option you will be asked to specify brush 1, 2, or 3. Instead of a pair of cursors, the selected brush will blink at its location. One paddle button sets the brush down, the other raises it.

T : Gets a Shape Table. You will be asked to specify the name of a table you had previously created and saved with the Shape Table Design program.

U : Use a Shape -- Shape Mode. After you have loaded a shape table with the 'T' command, you may use any of those shapes in your drawings. You will be asked to provide the number of the shape in the table, if your table contains more than one. The paddle button that allowed you to draw lines will now cause the shape to be plotted. The other paddle button puts you into Rotate/Scale mode, in which the paddles control size and rotation of the shape. Pressing any key returns you to normal Shape Mode.

C : New Drawing Color. You may select color 0-7 with which to draw. The colors are: 0&4-black, 3&7-white, 1-green, 2-violet, 5-orange, 6-blue, but they may vary with individual systems.

B : New Background Color. This option clears the screen to the background color specified (0-7).

S : Save Picture on Disk. If you have a disk system, this option will save the current picture from the screen onto disk. You will be asked to give the picture a name.

G : Get Picture from Disk. Gets a previously saved picture from disk. You will be asked for the name of the picture you desire. The copy on disk is not affected, so if you make changes to your drawings you must resave it.

<ESC> : Full Screen Switch. During normal operating mode, at the bottom of the screen are displayed the current mode, drawing color, background color, and whether the brush is up or down, if in Paint Mode. There are graphics under those text lines, just waiting to set out! The <ESC> key has the special function of deleting the text lines if you want to see the bottom portion of the screen. Pressing the <ESC> key a second time replaces the text (but the graphics still hide under there waiting for you).

H : Help. This will display, in short form, the options available.

If you save a picture and wish to use it in another program, inserting the following lines in your program will load the drawing:

```
HGR  
PRINT D#;"BLOAD name"
```

where 'name' is the name you save the picture when you saved it, and D# has the value Control-D, as described in the DOS Manual.

The Shape Table Design program allows you to create shapes with one of two distinct methods: Accu-draw or Quickdraw. Quickdraw is faster and easier, allowing you to use the paddles for drawing shapes. It will usually take more storage, however, and give worse results if the shape is scaled larger. With Accu-draw you use the keyboard to key in the moves necessary to create a shape. It will usually give clearer results, but it takes more time and thought. You may view the shape in hi-res mode when you are done, and may redraw the shape if you do not like the results. When viewing in hi-res, the paddles control rotation and scale, as they do in the High Resolution Drawing program.

You may save the table at any time and modify it later. Remember that if you modify the table, you must resave it for the modifications to become permanent.

When creating a new table, you will be asked the following questions:

What is the maximum number of shapes that you will put in the table?

What will the width and height of your largest shape be?

These initialize space in memory for your table. (Each shape in your table will take width*height/2+3 bytes.) Note that your answer to the second question does not necessarily limit either of your dimensions. As long as width times height never exceeds the maximum you are setting, the shape will fit. (So if you specify a 4 by 4 maximum, you can still have a shape that is 2 by 8, since in both cases width times height is 16.)

Exact instructions for using Accu-draw and Quickdraw are provided within the program. A few notes should be made about Accu-draw, however. Because of the way shape tables are stored, the counter (giving how many moves will fit in the room remaining for a shape) will occasionally decrease by 3 if you make 2 vertical moves without plotting. This is not a bug in the program, it is simply an internal correction that must be made. The image you see on the screen may also differ slightly from the actual shape. What you see are the points from which line segments have been plotted. A shape is actually made of small line segments rather than points.

To use a shape table in one of your own programs, you must include the following commands:

```
POKE 232,0 : POKE 233,64
PRINT D$;"BLOAD name"
```

where D\$ is a Control-D, as described in the DOS manual, and 'name' is the name you save the table when you saved it through the Design program.

It should be noted that not only are there commands in the High Resolution Drawings program that let you draw with Shapes created in the Design program, but the "brushes" used by the Drawings program are actually from a shape table called BRUSHES. You may change this set of brushes by modifying the BRUSHES shape table with the Design program.

The two demonstration programs, BANDIT and INVADERS, were included to give you some idea of how graphics from High Resolution Drawings and Shape Table Design can be used for other programs. BANDIT uses a drawing called MACHINE, and a shape table called SLOTS, which were both created by the graphics programs in this package (and both can still be accessed with those programs). The same situation is true with INVADERS, which uses a drawing called INVADERS LOGO for the beginning display, and a shape table called MARTIANS. INVADERS is written in Applesoft and is a facsimile of the arcade game, using all of Apple's colors and adding a few twists.

Some technical information: the Design program puts the shape table between hex addresses #4000 and #5600, which is between Hi-Res page 1 and DOS on a 32K system. (Decimal addresses are 16384 and 22016). To change these locations you must change 3 program lines:

```
200 UL = 22016
```

sets the upper bound. Change 22016 to the upper limit you desire. (Those with a 48K system will want to change this to 38400.)

```
210 L1 = 16384  
220 POKE 232,0 : POKE 233,64
```

set the lower bound for the table. In line 210 change 16384 to your desired lower bound. Line 220 pokes the numbers 64 and 0 into memory. These are equivalent to the hexadecimal numbers #40 and #00, which when put together form the hexadecimal number #4000, the equivalent of decimal 16384. If it sounds confusing, it is; but if you know enough to care where in memory the shape table is put, you probably know how to do the conversions.

All of the programs in this package, and this documentation, are copyright, 1980, by Mark Pelczarski, and distributed by MP Software.