

RAMbrandt

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Developed for ANTIC by the PITTSBURGH ATARI COMPUTER ENTHUSIASTS
(PACE)

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1 INSTRUCTIONS

1.1 HARDWARE REQUIREMENTS

1. Atari computer with 48k min. RAM (Mosaic Ramselect optional)
2. Atari-compatible disk drive
3. Input Device - Joystick/Touchpad (ATARI or KOALA)

1.2 STARTING UP

Turn on your disk drive. Insert the RAMBRANDT diskette and turn on the computer. In a few seconds the title screen will appear. Press <START> for the main menu. This menu allows you to select the graphics mode you want to use and the type of touchpad you have.

1.3 GRAPHIC MODE SELECTION

RAMBRANDT supports FIVE different graphics modes. The conventions used to label the modes are different from the standard mode labels, as shown below:

RAMB.		ATARI		
MODE	MODE	COLORS	LUM.	RESOLUTION
0	7+16	4		160 ACROSS X 96 DOWN
1	9	1	16	80 ACROSS X 192 DOWN
2	10	9		80 ACROSS X 192 DOWN
3	11	16	1	80 ACROSS X 192 DOWN
4	15+16	4		160 ACROSS X 192 DOWN

Some of the Graphic Modes are compatible with other programs.

- MODE 0 - MOVIE MAKER background files
- MODE 4 - MICROPainter/MICROILLUSTRATOR (7+) (KOALA)

To change Graphic Modes, press the <OPTION> key until the arrow points to "mode". Then, press <SELECT> until the mode you desire is displayed on the screen.

1.4 TOUCHPADS

RAMBRANDT can use the two types of Touchpads available for the Atari computer - ATARI or KOALA. By using the <OPTION> key to move the arrow to PAD, the <SELECT> key chooses either the ATARI or KOALA touchpad. No matter what pad you choose to use, you'll always enter RAMBRANDT in joystick mode. You can switch back and forth by pressing shift S (stick) or shift P (pad).

2 LET'S PAINT

We can now begin painting. For now, select graphics mode 4. Press <START> to get the drawing screen. When the screen first appears you will see a mostly blank region with COLOR BARS across the top, a CURSOR in the middle, and a yellow COMMAND LINE along the bottom. The top row displays the colors available with which you can paint. The entry defaults are set to white, red, blue, and yellow. At the upper-right corner is a small square which shows the color and pattern in your brush. In the middle of the screen is a small square with the letter "P" next to it. This is your CURSOR and shows you where you are on the screen. The CURSOR can be toggled on or off by pressing "shift O".

Along the bottom are two COMMAND LINES with COMMAND BOXES that you pick by moving the CURSOR to them and pressing the button. There are several additional commands contained in the bottom COMMAND LINE. These can be toggled by picking <Nxt> at the bottom right corner. Also, you can toggle the COMMAND LINES on or off by pressing "shift B". On the top command line to the far right are two numbers that tell you the position of the cursor. The first number is the horizontal position and the second is the vertical position. There are many additional commands that only can be accessed by the keyboard. By pressing "shift ?" you get a HELP MENU containing most of the commands. For details on any command, this manual has been arranged in alphabetical order for easy access to that command.

2.1 INPUT DEVICES

For your convenience, RAMBRANDT can be used with a JOYSTICK in PORT 1 and a TOUCHPAD in PORT 2. Before beginning, you may choose either the joystick or the touchpad. However, at any time, you can switch to the joystick in PORT 1 by pressing "shift S" or you can switch to the touchpad in PORT 2 by pressing "shift P". When you begin, the stick is always active, so if you want to use the pad instead, press "shift P". Note: If you are using an Atari Touch Tablet, RAMBRANDT only recognizes the buttons on the tablet itself, not the pencil.

2.2 COMMAND ENTRY

Commands to RAMBRANDT are entered in any of the following ways.

1. By the KEYBOARD
2. By placing the CURSOR with the ARROW keys on the command box and pressing the PERIOD key
3. By placing the CURSOR with the JOYSTICK/PAD on the command box and pressing the BUTTON

The second method, pressing the arrow keys "+*-=", is for real fine control when used in conjunction with the position numbers. (must be used in joystick input mode) The rest of this manual will cover all the tools in alphabetical order by category. This should eliminate most of the stumbling around, hunting for a particular tool or command when you want it. However, there are 8 basic tools that should be read FIRST. These tools can be selected either thru the keyboard or with the command lines. The basic tools or commands are:

1. BOX
2. CIRCLE/ELLIPSES
3. COLOR
4. DRAW LINE
5. FILL
6. PLOT
7. TEXT
8. UNDO **

Once you're familiar with using the above tools, go through the following commands one-by-one to familiarize yourself with the program.

3 RAMBRANDT COMMAND GUIDE:

3.1 ANIMATION

RAMBRANDT allows you to animate small regions on the screen which will appear in the upper left corner of the screen. Using the Window command, you define a small rectangle, your "camera". When prompted with the Window menu, press "A". The size of this window is limited, and if it is too big, you will hear a buzz. Try again. Now let's create a mini-epic. Create an animation window by getting the window tool. When prompted by the window menu, press "A". To define a sequence of pictures, press "ctrl D" and a rectangular box will appear along with a small letter "A". If a window has not been defined, you will hear a buzz. This rectangle is your camera. Take pictures of objects by pressing the button after placing your camera over the object. Up to 32 frames are allowed. For stable movement, you may want to switch to joystick input mode at this time.

DO NOT take any pictures in the upper left corner. They will not show up there because that's your movie screen. After taking a few pictures, you can "animate" them like flip cards by pressing "ctrl A". The sequence of pictures you took will be rapidly flashed in the upper left corner. You can slow this down by pressing the "+" key or

speed it up by pressing the "*" key. The action can be frozen by pressing the SPACE BAR. Press the SPACE BAR again to re-start the action. Only after freezing the action, pressing "ESC" will take you back to painting, etc. You can continue to add more pictures to your sequence until 32 are used. Clear the sequences by defining a new animation window. This tool is invaluable in creating "Movie Maker" cartoons.

3.2 BOX

Press "B" or pick <Box> on the command line. A small "B" will appear next to the cursor. Move to the drawing screen and press the button once. Move the cursor and notice the rubber box that follows it. Press the button again and a solid box will appear. You can get rid of rubber boxes by pressing the "DELETE" key or "ESC" key.

3.3 BRUSH

3.3.1 BRUSH - AIRBRUSH

Press "J" or pick <Air> on the command line to get the airbrush. The letter P will appear next to your cursor. This is like a can of spraypaint and only plots a small amount at a time.

3.3.2 BRUSH - USE

There are 5 pre-defined brush types to choose from. To try a new brush stroke, press "shift U" or pick <Brs> on the command line. The brushes will appear at the top of the screen. Press a number from 1 to 5 to get the desired brush. If you pick any other number a buzzer will sound and you must press "U" or choose again. You can use these brushes for everything but filling. Press "X" to get the normal brush.

3.3.3 BRUSH - DEFINE

Any of the 5 pre-defined brushes can be user defined. Use joystick mode to define brushes. To define a brush first press "shift M" and a small "M" will appear next to your cursor. Plot up to 20 points by pressing the trigger to create a brush stroke. When you are done (or have made more than 20 points) press "shift E" to end the brush definition. Follow with a number from 1-5 to store the brush. Now when you choose a brush, your new one will replace one of the default brush strokes. One recommendation is keeping brush 5, since it is used for the "Airbrush" command.

Some very strange effects are possible by making brushes out of points plotted far apart on the screen. When you draw circles/elipses, boxes, etc with these types of brushes, multiple objects will appear at each of the verticies you defined in your brush.

3.3.4 BRUSH - LOAD/SAVE

You can save to disk your 5 defined brushes by pressing "ctrl S". They will be saved to a small area on your picture diskette. Only one set can be saved per diskette. You can load then by pressing "ctrl L". There is a module (See MODULE) included on the disk which allows you to save your brushes etc. on a DOS diskette so that you can save up to 64 on one disk.

3.4 CIRCLE/ELLIPSE

Press "Z" (Zircle !) or pick <Cir> on the command line and a small Z will appear next to your cursor. Move the cursor to the point you want to be the center of the circle, press the button. As you move the cursor a series of rubber ellipses and circles will appear. Moving up and down changes the radius and left and right changes the shape. If you want perfect circles, press <Cir> or "Z" twice.

3.5 COLOR

3.5.1 COLOR - BARS

If you want to draw on the full screen, you can get rid of the color bars by pressing the space bar or picking <Bar> on the command line. This command also puts the bars back on the screen. Whatever you have drawn is saved so things drawn where the color bars are are not destroyed.

3.5.2 COLOR - CHANGE

The ATARI allows you to select colors from a palette of up to 256 possible colors. When you first start up the colors available are white, red, blue, and yellow in the four color modes; black, orange, green, turquoise, purple, white, red, blue, and yellow in the nine color mode; 16 shades of grey in mode 1; and 16 light colors in mode 3. If you want to select a different set of colors, press "C" or pick <Chg> on the command line and the cursor will jump up to the color bars across the top of the screen. Position the cursor over the color you wish to change and press the button. Move the joystick left to right to change luminance and up and down to change hue. When you have the color you desire, press the button again. Move to another color to change it. When you want to go back to painting again, press the ESCAPE key.

3.5.3 COLOR - SELECT

You can select a different color by moving the cursor to the color bars and selecting the desired color. The small square on the right indicates which color you have selected. You can also choose colors from the keyboard by pressing a number key: 0-color 0, 1-color 1, ... , 9-color 9, "shift 0"-color 10 , "shift 1"-color 11, ... , "shift 5"-color 15. If you pick a color number greater than the number of available colors, the last color will be chosen.

3.5.4 COLOR - HUNT (Search & Replace)

This is an extremely useful command and allows you to selectively draw, plot, etc. (except fill) the current selected color over a particular color. To use it, press "shift H" or pick <Hnt> on the command line. Follow this by choosing a color over which you wish to paint. Whenever you paint, no paint will be put on your picture unless you are over your chosen color. You can cancel this option by pressing "X" or changing tools.

3.5.5 COLOR - INTERRUPTS

MORE COLORS!!. RAMBRANDT allows you to take advantage of ATARI's superior graphics hardware by giving you access to "Display List Interrupts". You can change the color of any color register at any vertical level of the screen.

Here's an example. Choose a color, say color 2, and use the thick plotting tool to make a long vertical line from the top of the screen to the bottom of the screen. Now position the cursor somewhere below the color bars, anywhere is fine if you are in mode 0, otherwise, you must be on an even-numbered vertical line. Press the "I" key and the cursor will jump up to the color bars. If nothing happens, move up or down by one and press "I" again. Move over color 2 and press the button. The lower part of your thick vertical line will change to the background color. Move the stick up and down and left to right like you are changing colors and notice how the stripe changes colors, but only below the point where you pressed "I". When you have picked a nice color, press the button again. The color is locked in. Now press "ESC" to go back to plotting.

You can put up to 90 interrupts on a picture. To get rid of an interrupt, position the cursor at the exact point where it begins and press "W". Erasing the screen gets rid of all the interrupts. The color changes created with the interrupts are always saved with your picture.

3.5.6 COLOR - ORIGINAL/DEFAULT

Press "O" to get the original colors back.

3.5.7 COLOR - PROBABILITY/RANDOM

You can create random textures for filling, drawing, etc. with RAMBRANDT. Press "Y" to create a random assortment of colors. A long thin stripe will appear along the bottom of the color bars. Move to the far left of the stripe and select a color with the number keys. Move the cursor to the right. The distance you move it is proportional to the amount of the selected color in your random mixture. Press the trigger and select another color. Move and press again until you have filled up the stripe. The stripe will disappear and your random mixture will be created.

To see what it looks like, press the space bar a few times and watch the color blob change. This mixture remains in memory until you create a new mix. Any time you

wish to use your mixture, press "A" or pick <Prb> on the command line. You can get rid of it by pressing "X" or choosing a new tool.

3.5.8 COLOR - TRANSPARENT

This command makes color 0, the background color, transparent. Thus, you can superimpose two patterns by choosing one of the colors in the pattern to be color 0 and using the transparent option. This command is used by pressing "<" or picking <Trn> on the command line. You can also use it to with a random color mixture to create strange multicolor airbrush effects. You cancel this mode by pressing "X" or by changing painting tools.

3.6 DRAW LINE

To draw straight lines, press "D" or pick <Drw> on the command line. A small "D" will appear next to the cursor. Move to the drawing screen and press the button once. Move around and watch the rubber line follow. Press the button again and a straight line is drawn. You can change colors as in plotting. If you want to get rid of a rubber line, press the "DELETE" key.

3.7 EXCLUSIVE OR

To paint with an exclusive or brush, press "shift X". Normally, color is put on the screen by replacing each pixel with the color in the brush. Exclusive or painting performs a logical EOR with the pixel and the contents of the brush and puts this on the screen. This command is useful when used in conjunction with "wipes". Cancel this type of painting by pressing "X" or by changing tools.

3.8 FILL

The fill command allows you to fill in any enclosed region with patterns and colors. Press "F" or pick <Fil> on the command line and a small "F" will appear next to your cursor. Position the cursor inside a closed region and press the button. The region will fill with the color you have in your brush. Undo the fill if you do not like it. If you have not completely enclosed a region, color can leak out. You can stop the fill immediately by pressing the "START" key. Then you can undo it. You cannot fill a region which is the same color as one of the colors in your paint brush.

3.9 FONT

3.9.1 FONT - CHARACTER AS PATTERN

You can access many different patterns by taking advantage of a command that converts any text character into a pattern. Thus if you want to fill a square with the letter "A", first make a square. Get the Fill tool by pressing "F", choose your text letter by pressing "control F" and then choose your desired letter. Pick two colors and fill the square. Note that there is a special font on this disk which contains about 50 different patterns – like the MACINTOSH. You can use these patterns just like the stripes and checks.

3.9.2 FONT - LOAD

SPECIAL BONUS! The RAMBRANDT disk comes with 4 fonts (taken from ART-DOS's 20 fonts – PD043) in addition to the usual ATARI font. To use a new font, press "shift A" and then insert your RAMBRANDT program disk into the drive. Press <RETURN> and a directory of fonts will appear. Pick one and you will return to the screen. Now when you write text, it will be in your new font. Note that you cannot load a font if your cursor has the letter "R" on it.

3.10 GRAPHIC MODE CHANGE

Press "Q" to get to the main menu. Since this destroys your picture, you will be asked if you are sure. Press "Y" and the main menu will appear, otherwise, you will return to your picture.

3.11 MIRROR

Mirrors allow you to draw simultaneously in four corners at once or on the left and right or on the top and bottom. Press "TAB" or pick <Mir> on the command line. Follow this with "V" for the vertical mirror, "H" for the horizontal mirror, or any other key for the 4 way mirror. You can exit mirror drawing by either pressing "TAB" or picking <Mir> again or by turning on the color bars.

3.12 MODULE

(SEE APPENDIX)

3.13 PATTERN

RAMBRANDT shows it's versatility by providing lot's of patterns to choose from and patterns you can define. You have 3 types of fixed patterns, 10 user defined patterns, and 5 user defined brush types (See BRUSHES). Also, font characters can be uploaded and used as patterns (See FONTS). The fixed patterns are checks and horizontal and vertical stripes. The user defined patterns are quilts and tiles.

3.13.1 PATTERN - CHECKED/MIX

Checked patterns are fixed two-color patterns in checked format. Checked patterns are chosen by pressing "M" or picking <Mix> on the command line. Any time you change tools or press "X" you will get solid colors again.

3.13.2 PATTERN - QUILT

QUILT - USE Quilts are user defined patterns that can have any two colors in any pattern. There are 5 pre-defined quilts to choose from. Press "shift F" or pick <Qlt> and 5 two-color patterns will appear at the top of the screen. Pick 1-5 to choose your pattern and then choose any two colors. Any time you change tools or press "X" you will get solid colors again.

QUILT - DEFINE Any one of the 5 pre-defined quilts can be user defined. Quilts are defined with only 2 colors allowed. To define a quilt press "shift D" and follow with a size number 1-3. There are 3 different sized quilts: 2x2, 4x4, and 8x8. A small box appears in which you draw your pattern. You must always use the plotting tool to define a quilt. One of the colors used must be the background color, color 0. The zoom feature in the 4-color mode may be helpful. When you are done plotting press "shift R" and follow with a number from 1-5 to store your defined pattern in memory.

QUILT - LOAD/SAVE You can save to disk your 5 defined quilts by pressing "ctrl S". They will be saved to a small area on your picture diskette. Only one set can be saved per diskette. You can load then by pressing "ctrl L". There is a module (See MODULE) included on the disk which allows you to save your quilts etc. on a DOS diskette so that you can save up to 64 on one disk.

3.13.3 PATTERN - STRIPE

You pick horizontal stripes by pressing "H" or picking <Hrz> on the command line. The square in the upper right of the color bars will indicate which color stripes appear. Pick the two colors you want your stripes to be. You can draw, fill, make circles, etc with these stripes. Pick vertical stripes by pressing "V" or picking <Vrt> on the command line.

3.13.4 PATTERN - TILE

TILE - USE Tiles are user defined patterns that can have as many colors as you want in any pattern. There are 5 pre-defined tiles to choose from. Tiles are obtained by pressing "shift T" or picking <Til>. Five multicolor patterns will appear on the screen. Choose 1-5 to get your pattern. Any time you change tools or press "X" you will get rid of the tiles and you will get solid colors again.

TILE - DEFINE Any one of the 5 pre-defined tiles can be user defined. Tiles are multi-colored. To define a tile, press "shift C" and follow with a size number 1-3. The 3 sizes are: 2x2, 4x4, and 8x8. A small box will appear inside which you plot a multicolor pattern. You must always use the plotting tool to define a tile. The zoom feature in the 4-color mode may be helpful. When you are done, press "shift L" and follow with a number from 1-5. Your tile will be stored in memory and you can use it like the regular tiles.

TILE - LOAD/SAVE You can save to disk your 5 defined tiles by pressing "ctrl S". They will be saved to a small area on your picture diskette. Only one set can be saved per diskette. You can load then by pressing "ctrl L". There is a module (See MODULE) included on the disk which allows you to save your tiles etc. on a DOS diskette so that you can save up to 64 on one disk.

3.14 PICTURE

3.14.1 PICTURE - ERASE

You can clear your paint screen by pressing "E". You will be asked if you are sure. Press "Y" and the screen will be erased. Pressing any other key returns you to painting.

3.14.2 PICTURE - LOAD/SAVE

RAMBRANDT uses a simple sector storage routine which is not compatible with ATARI DOS.

APPENDIX II gives technical information on how pictures are stored. First you must have a blank DOS 2.0S FORMATTED diskette available. To save your creation, press "S" or pick <Sav> on the command line. A menu will appear. Insert a blank formatted disk and press I. This sets up the directory (only needed to do once) and initializes your picture disk. It is not necessary to do this but the directory looks nicer if you do. Now to save your picture by pressing a number from 0-9 corresponding to where you want your picture saved. It will write over any other pictures already occupying that space. After it is saved the program will prompt you for a name. You can use up to 32 letters. After typing in the name (and the mode number for your reference) press <RETURN> to save the name and return to drawing.

You can load in new pictures by either picking <Loa> on the command line or pressing "L". Pick 0-9 or get a directory first by pressing "D". You can get the directory printed out by pressing "P". To abort a load or save just press the <START> key.

In APPENDIX I a module is described that can be loaded from the program which allows you to save pictures in "MICROPAINTER", "KOALA" and "MOVIE-MAKER" formats as well.

Included with your diskette are some utility programs for loading pictures in BASIC. See APPENDIX III for details.

3.14.3 PICTURE - RAMDISK

If you have one or more MOSAIC 64K SELECT boards in your computer, then you can transfer pictures from the screen to this extra memory. Thus, you can work on several pictures at one time (up to 10), moving parts of one to the other ones with rubber stamps. For each 8K you have above the normal 48K RAM you can save a picture. To put your picture in this buffer, press "shift up arrow" and follow with a number from 0-9. If do not have this extra memory, a buzzer will sound. Otherwise, you'll hear a click and the picture is saved to RAMDISK. To load it, press "shift down arrow" and follow with a number 0-9. Your picture will appear on the screen immediately.

Future versions of RAMBRANDT will support the Axlon and 130XE Ramdisks as well. Watch the catalog for updates.

3.14.4 PICTURE - SHIFT

Sometimes you begin drawing and you realize that your picture is not properly centered. To remedy this, position the cursor to the portion of your picture you want moved to the upper left hand corner. Press "K" and the picture will be slowly moved. If you want to stop (it takes a while to move), press "*" and the move will stop. You can undo this if you want.

3.15 PLOT

The plotting tool for freehand doodling is chosen by pressing "p" or moving the cursor over the letters <Plt> on the command lines and pressing the button. A small "p" will appear next to your cursor to indicate you are plotting. Move the stick around while pressing the button and you will leave a trail of color behind.

3.15.1 PLOT - THICK

Thick lines can be plotted by pressing "T" or picking <Thk>. This gives you a plotting tool with a thick line and is great for fast painting.

3.16 SCALING

This unique command lets you grab a rectangular piece of your picture and scale it to fit into a different rectangle somewhere else on the screen. Draw a blob on the screen. Press "shift Z" or pick <Scl> on the command line. A small "S" will appear next to your cursor. Move the cursor to the upper left of your blob and press the trigger. Move to the lower right so that the blob is surrounded by a rectangle. Press the trigger again. Now move to another part of the screen and press the trigger. Move down and to the right. Press again and your blob will be scaled to fit into this second rectangle.

You must always first move to the upper left, then to the lower right. If you do not do this a buzzer will sound and you must start all over. Pressing "U" or picking <Und> undoes this after you have done it once. Sometimes it takes a while to complete the picture. Note that you can stop the scaling once it has started by pressing "*".

3.17 STAMP

With RAMBRANDT, you can pick up small pieces of your picture and move them around or duplicate them wherever you'd like. You can have up to 3 small or 1 large stamp at once. Press "R" to define a stamp. Follow with a number (1-3 for small stamps or 4 for a large stamp) Any time you pick 1-3 stamp then #4 stamp is erased and anytime you pick #4 stamp, then stamps 1-3 are erased. A small "R" will appear on your cursor. Move to the upper left hand side of the part of your picture you want to move and press the trigger. A rubber box will appear. Surround the area you want stamped by moving to it's lower right corner. Press the trigger and if the picture is small enough, it will disappear and the dangle at the end of your cursor.

If the picture is too big a buzzer will sound and you must start again. If you get the picture at the end of your cursor, you can now duplicate it wherever you'd like by pressing the trigger. Each time you press it the image is painted on your picture. If you do not like the fact that the stamp is initially erased, you can restore the erased spot with the "undo" command. You can get out of this mode by picking a new tool, such as "P". You can re-use this stamp almost anytime you'd like by pressing "N" or picking <Stp> on the command line and selecting 1-4.

WARNING!!! Stamps #1 and #4 are destroyed whenever you perform a fill. There is also a conflict with stamps 2-4 when you use a fancy font.

TEXT

RAMBRANDT allows you to print text on the screen in several sizes and in many fonts. To print text, press "," (comma) or pick <Txt> on the command line.

Next, press a number from 1 to 4. #1 is the shortest size and #4 is the tallest size. If you press some other key, a buzzer will sound and you will not have the text tool. If you select a proper key, the letter "T" will appear next to your cursor. Move the cursor to some spot on the screen and press the button.

You may now type and whatever you type appears on the screen. You can type until the right edge of the screen is reached or until you press the escape key "ESC". A buzzer will sound and you will have control of the cursor again. You can select different colors before you select Text and the text will plot in the selected color.

3.18 WINDOW

RAMBRANDT allows you to rotate images, flip them, and wipe large rectangular blocks with color and patterns.

Let's experiment. Make a little shape on the screen with different colors. Use the rubber stamp to make copies of them and put them around the screen. We can now

do our experiment. Press "shift W" or choose <Wnd> on the command line to get the window tool. A small "W" will appear next to your cursor. Move to the upper left of a picture on the screen and press the button. Move to the lower right surrounding the picture with a rectangle and press again. A menu will appear:

```
(W) WIPE
(E) EXIT
(V) VFLIP
(H) HFLIP
(R) ROTATE
(A) ANIMATE
```

You must pick one of these keys. Pressing "E" takes you back to your picture with no changes. You must then start over.

3.18.1 WINDOW - WIPE (W)

Wipe fills the rectangle you have created with whatever color is currently in the paint brush. Use this in conjunction with "Hunt" to selectively remove colors from your picture. You can achieve dramatic effects when you use it with the "Transparent" or "Exclusive Or" options.

3.18.2 WINDOW - VFLIP (V)

This flips your picture about a vertical axis at the center of the window:

```
----> <----
before after
```

3.18.3 WINDOW - HFLIP (H)

This flips your picture about the horizontal axis at the center of your window:

```
^
|
|
|
|
v
before after
```

3.18.4 WINDOW - ROTATE (R)

This command lets you rotate your image about the center of your window. Note that it will often be somewhat distorted especially in modes 1-3 because the pixels are not square, but rectangular. When you press "R" a new menu will prompt you for the angle. Press the "*" and "+" keys to change it by increments of 5 degrees. When you have obtained the desired angle, press <START>. The rotation takes a while and you can stop it by pressing "*".

All of these commands can be undone in the usual manner by pressing "U" or <Und>

3.19 UNDO

The most powerful command you have is called "Undo". Each time you select one of the basic tools such as "Box", etc. the picture is copied and any subsequent things you do can then be undone by pressing "U" or picking <Und> on the command line. This command only undoes the previous operation.

3.20 ZOOM

For detailed work you can magnify or zoom your work area in the two 4-color modes by pressing the ATARI key. Press again to go back to normal size.

4 APPENDIX I - MODULES

In order to keep this program as flexible as possible, I have attempted to include modules which are small programs that are loaded in from the main disk. The main diskette presently contains two powerful modules, a color printer module and a "DOS" module. To load a module, insert the main diskette and press "G". You will be asked for a directory or to load a module. Press "D" and you will see two items, a printer module and a DOS utility module. Press either 0 or 1 depending on your choice. Press <START> to go back to painting. The module will be loaded into memory and the executed. At some later date, disks will be available which will contain support for other printers (only the EPSON MX80, C.ITOH, and OKIMATE 10 are currently supported), font editors, and various other modules.

4.1 MODULE 0

4.1.1 MODULE 0 - PRINTER SUPPORT

This module lets you make (1) fast black and white dumps with an EPSON MX80, (2) slow large grey plots with an ITOH or EPSON, and (3) slow multicolor pictures with an OKIMATE 10 color printer. When you load this module, you will be prompted for one of the 3 above modules. If you do not want to print, press <START> and you will return to your picture.

4.1.2 EPSON FAST DUMP

The first choice makes very fast small black and white pictures on an EPSON printer. If your printer is not plugged in, you will return to your picture. Once the graphic dump starts, you can stop it by pressing "*".

4.1.3 EPSON / C.ITOH SLOW DUMP

This option allows you to set the grey levels of your plot so that each of the four colors corresponds to a different pattern of printed dots. The pictures take a while longer to draw; if you have a printer buffer, things are much faster. Only the 4 color modes are supported; it will work with the other modes, but the results will not necessarily be what you expect. First you choose your type of printer. Choose (1) EPSON or (2) ITOH. Next you will be presented with a grey-scale menu. Each of the four colors 0-3 can be represented by one of 5 different black and white dot patterns.

- Pattern 0 is the lightest and is white
- Pattern 4 is the darkest and is black

The defaults are:

- Color 0 = White
- Color 1 = Light Grey
- Color 2 = Dark Grey
- Color 3 = Black

The luminance and hue are shown along with the color number. Pick a number from 0-4 or press <RETURN> to keep the default color. The current grey values will be listed and you will be asked to pick the next color. Continue this until you have selected all 4 colors. Press "Y" to begin printing, otherwise you must go through the color menu. You can halt the print by pressing "*" which will return you to your picture. Note that the display is turned off during printing to speed things up.

4.1.4 COLOR PRINTING

The color printing module is very sophisticated and also quite slow. It takes about 20 minutes to make a complete picture. The program is able to understand display list interrupts so that you can actually produce up to 46 different color patterns on one picture. The number of possible color patterns is huge. First, you will be asked for the width of your picture. I suggest using the largest width for modes 0 and 4. For modes

1-3, you should probably choose the narrowest because the horizontal resolution is so coarse. After you select a width a strange and beautiful menu appears.

Before describing its use, I will discuss the technique used for producing pictures. Each pixel on your picture is represented by 4 dots on the printer:

```
c1 c3
c2 c4
```

c1, c2, c3, and c4 are one of the eight solid colors the OKIMATE can produce. They are:

- 0) White
- 1) Yellow
- 2) Red
- 3) Orange
- 4) Blue
- 5) Green
- 6) Purple
- 7) Black

When you create a color, you choose which of these eight OKI-colors to use in each of the four color slots. For example, suppose you wanted to create light blue-green:

```
0 4
5 0
```

The top left color is white-0, the top right is blue-4, the bottom left is green-5, and the bottom right is white-0. This would show up as a light aqua blue on the printer. To make solid red, each of the 4 slots would be set to red-2:

```
2 2
2 2
```

The color menu consists of several lines of different colors; these colors correspond to the colors you have used in your picture. If you have more than 23 colors, another color menu will appear after you fill in this one. Across the top line are the words:

```
T LEFT B T RIGHT B
0      0 0      0
```

These words have zeros beneath them. T means top and B means bottom. Each zero corresponds to one of the 4 printer colors you can use. From left to right they are c1, c2, c3, and c4. Use the number keys 0-7 and the cursor keys to move around the menu and change the zeros to whatever color patterns you desire. Suppose you wanted the aqua color described above. Then you would press 0 4 5 0. For solid red, you press 2 2 2 2. After you have filled in the color chart, press <START>. Either a new menu will appear (if you have more than 23 colors) or you will be prompted to prepare the printer. After making sure everything is ready, press <RETURN>. The display will turn off and printing will begin. You can stop a print by pressing "*". After the program is done you are returned to your picture.

4.2 MODULE 1

4.2.1 MODULE 1 - DOS UTILITIES

This module allows you to load and save picture files in various well known formats. NOTE: You must always use drive #1 (This program does not understand any other drive numbers). There are two menus when you load this module. You will first be presented with the menu:

1. SAVE
2. LOAD
3. DIR

To get a directory of a DOS disk press "3" and the directory will appear. Always remove the master diskette before doing this command, otherwise you will just get garbage. You can stop/start the directory listing by pressing "ctrl 1" as usual with the ATARI. If you want to save a file press "1" and if you wish to load a file from the disk, press "2". You will then be prompted for the name of the file. The name should always be in the standard DOS II form:

FILENAME.EXT

The FILENAME should be 8 or less letters and EXT is a 3 letter extender. Do not include the device, "D#", it will not be understood. Wild cards are not understood either so do not use * or ?. After typing in the name, press <RETURN>. If the file can be opened then the second menu will appear. If not, then a buzz will occur, an error # will be given and you must start over. The second menu shows you the 5 formats the program can accept:

1. MICRO
2. KOALA
3. RAMDOS
4. FONTS
5. USER
6. EXIT

"Exit" takes you back to the first menu. You may return to your picture from the first menu by pressing <START>. The other 5 numbers correspond to different ways of saving/loading pictures and other files.

MICRO This is the format for "MICROPAINTER" files and "MOVIEMAKER" background files. For the former, it is a 62 sector picture file and the latter a 32 sector file. I suggest using the extender ".MIC" for "MICROPAINTER" files and ".BKG" for "MOVIEMAKER" so you can keep them straight. The display list interrupts are not saved in this format.

KOALA This is the compacted picture format used by "MICROILLUSTRATOR" and "ATARI TOUCH TABLET" graphics programs. It takes a while to load and save this type of file (up to a minute), but you can fit many pictures on one disk. I suggest using the extender ".PIC" for files of this type. The display list interrupt routines are not saved in this format.

RAMDOS This is identical to Koala format except that there are 4 additional sectors added at the end of the file which contain information about the animation, colors, and display list interrupts. This way you can save DOS compatible files which contain all of the information in the normal RAMBRANDT picture. I suggest that you use the extenders ".RM0", ".RM1", ..., ".RM4", as the extenders for files in this format. The numbers refer to the mode numbers in RAMBRANDT.

FONTS This allows you to save and load standard 9 sector character set files to use in your picture as patterns or letters. I suggest using the extender ".FNT" for the various font types.

USER This allows you to save your custom brushes, quilts, and tiles on disk. All three user defined patterns are saved in the same file. This way you can give your friends your own custom patterns and brushes.

When prompted for a format, press 1-5 or 6 to return to the first menu. After your picture, font, etc. is saved or loaded, you will return to the first menu. You can load in or save other things before returning to your picture. Exit from this module by pressing <START>.

BE CAREFUL!! You could crash the program if you try to load a font into a picture file. This DOS is written in FORTH and is slower than the normal DOS, but is very compact (3K bytes). Some error checking is done. The error codes are:

1. Bad name

2. Bad disk #
3. Bad free space map
4. Bad file extender
5. Directory full
6. Disk full
7. Ambiguous name
8. File does not exist
9. End of file (not usually fatal)
10. Write protected

4.3 MODULE 2

4.3.1 MODULE 2 - GTIA 16-SHADE PRINT DUMP

This module is a 16-shade graphics dump routine that can be used on an Epson or Prowriter printer. It is suitable for large screen dumps of pictures made in the GTIA MODES: 1, 2, 3. In modes 1 and 3, color 0 is black/darkest and color 15 is white/lightest. In mode 2, color 0 is black/darkest and color 8 is white/lightest. There are no choices allowed so it is a good idea to change your picture colors accordingly. This routine can not be used with MODES 0 or 4. Hint: When using MODE 2, you may find that a negative image may be preferable. To create a negative image follow this procedure. First load the MODE 2 image in MODE 1. Then press "shift W" to get in window mode. Then press "shift X" for "exclusive or" and pick color 15. Now, get rid of top color bars by pressing the "space bar" and the command line by pressing "shift B". Then create the window with the joystick button - top left corner and then bottom right corner. When prompted, press "W" for wiping. There's your negative image.

5 APPENDIX II - ORGANIZATION OF PICTURE FILES

RAMBRANDT uses a simplistic sector storage technique which is accessible through the built-in ATARI disk operating system in valFORTH. Let n denote the picture number ranging from 0-9. Each picture begins on sector # $(64*n)+1$ with sectors ranging from 1-720. The first 60 sectors contain a complete byte map of the screen. If you are in a 192 row mode (1,2,3,4) then you will want to load all 60 sectors or 7680 bytes. In the 96 row mode, mode 0, you will only want to load the first 30 sectors, 3840 bytes. The picture information is arranged so that the first 40 bytes are scanline 1, the next 40 are scanline 2, and so on until scanline 96 or 192 is reached. The 61st sector contains only 9 bytes corresponding to the color information. These should be placed in registers 704-712.

Display list interrupt tables are in the last three sectors (62nd thru 64th). These are arranged in three 128-byte blocks. The first block contains the scanlines on which the interrupts occur. A zero means no interrupt and should be ignored. The next 128 byte block contains the table of color registers which are to be changed. It is indexed during the interrupt by VCOUNT (\$D40B) a hardware register which keeps track of the scanline currently being drawn. The last block also indexed by VCOUNT contains the color to be stuffed into the appropriate register.

6 APPENDIX III - LOADING PICTURES FROM OTHER PROGRAMS

Using your pictures in FORTH programs presents no problems and the listing below gives a set of words which can be used to do it. Simply put the picture number and the mode number on the stack and call LOADPIC. The program stays in an infinite loop until a console =key is pressed (WAIT). The pictures are saved using the usual FORTH sector organization, so to use a picture in a FORTH application, copy it to your application disk (use R/W for example) and change LOADPIC so that the variable SECPTR points to the first sector of the picture. The rest is done for you.

The BASIC program called LOAPPX.BAS on UTILITY DISK #1 accomplishes the same objective. Line 100 is the only one the user should change. PIC is the picture # and GMODE is the graphics mode (0-4). Line 10145 is an infinite loop which could be removed in most applications programs. To use these pictures in a DOS environment requires some precautions. One method is as follows. Copy your BASIC application to a blank formatted diskette. DOS always attempts to store data at the lowest available sector, thus you will likely have sectors 370 to 720 free (DOS keeps the directory and sector map around 360-370). Picture #7 starts at sector 422 so that you could safely put 7, 8, and 9 (i.e. 3 pictures) on a DOS disk. The best alternative to this rather difficult method would be to load the picture into memory, rewrite it on another diskette as a DOS file and then modify the listed program to load a DOS file instead of a FORTH file. Conversion programs exist in some of the ATARI magazines.

In the BASIC listing, the starting sector is $(64 * \text{pic\#}) + 2$ for sectors 0-719 while in the FORTH listing, it is $(64 * \text{pic\#}) + 1$ for sectors 1-720. The reason for this is that DOS starts at sector 0 and not sector 1 as is done in valFORTH.

The assembly language routines in the BASIC program are fully relocatable and use only the 4 zero page locations: 203-206.

The display list interrupt routine can be figured out by disassembling the code on lines 10014-10015.

7 RAMBRANDT QUICK COMMAND GUIDE

```
(on-line help version: "?")
COMMAND ENTRY
1) KEYBOARD
2) <Place CURSOR with ARROW keys on command box and press PERIOD KEY>
3) <Place CURSOR with JOYSTICK/PAD on command box and press BUTTON>
4) Combinations of above
COMMAND LINE (On/off toggle) ----- shift B
ALTERNATE COMMAND LINE ----- <Nxt>
CURSOR (On/off toggle) ----- shift O
DEVICE (JOYSTICK or TOUCHPAD)
JOYSTICK (Port 1) ----- shift S
TOUCHPAD (Port 2) ----- shift P
HELP ----- shift ?
ANIMATION
Set up ----- (Define window) (Then A key)
Sequence Define ----- ctrl D
Animate ----- ctrl A
Speed ----- + key-slower or * key-faster
Freeze (On/off toggle) ---- SPACE BAR
Exit ----- SPACE BAR to freeze (Then ESC key)
(Then NEW COMMAND)
BOX ----- B or <Box>
Cancel ----- DELETE key or ESC key
BRUSH
AIRBRUSH ----- J or <Air>
Define (Start) ----- shift M (Then plot up to 20 points)
Define (End) ----- shift E (Then 1-5)
Load from Disk ----- ctrl L
Normal Brush ----- X
Save to Disk ----- ctrl S
USE ----- shift U or <Brs> (Then 1-5)
CIRCLE/ELLIPSE ----- Z or <Cir> (Once-ELLIPSE/ Twice-CIRCLE)
Cancel ----- DELETE key or ESC key
COLOR
BARS (On/off toggle) ----- SPACE BAR or <Bar>
CHANGE ----- C or <Chg> (Then color)
Exit ----- ESC key
HUNT ----- shift H or <Hnt> (Then color)
Cancel ----- X
INTERRUPT
Insert ----- I (See manual)
```

Delete ----- W (See manual)
Exit ----- ESC key
ORIGINAL/DEFAULT ----- O
PROBABILITY/RANDOM
Cancel ----- X
Define ----- Y (See manual)
USE ----- A or <Prb>
SELECT ----- 0-9,10-15(shift 0-5) or <Color Bars>
SOLID ----- X
TRANSPARENT (Color 0) ----- < or <Trn>
Cancel ----- X
DRAW LINE ----- D or <Drw>
Cancel ----- DELETE key or ESC key
EXCLUSIVE OR ----- shift X
Cancel ----- X
FILL ----- F or <Fil>
Stop immediately ----- START key
FONT
Cancel (To solid color) --- X
Character as pattern ----- ctrl F (Then character) (Then 2 colors)
Load from Disk ----- shift A (Will not load in Stamp Mode)
GRAPHIC MODE CHANGE ----- Q
(Erases picture)
MIRROR
Horizontal ----- TAB or <Mir> (Then H)
Vertical ----- TAB or <Mir> (Then V)
4 Way ----- TAB or <Mir> (Then ANY key but H or V)
Exit ----- TAB or <Mir> or SPACE BAR or <Bar>
MODULE (Load from Disk) --- G
Exit ----- START key
PATTERN
CHECKED/MIX ----- M or <Mix> (Then 2 colors)
FONT (See FONT)
QUILT (1-5)
Define (Start) ----- shift D (Then 1-3 for size)
(Then plot 2-color pattern)
Define (Cancel) ----- ESC key
Define (End) ----- shift R (Then 1-5)
USE ----- shift F or <Qlt> (Then 1-5) (Then 2 colors)
SOLID ----- X
STRIPE
HORIZONTAL ----- H or <Hrz> (Then 2 colors)
VERTICAL ----- V or <Vrt> (Then 2 colors)
TILE (1-5)
Define (Start) ----- shift C (Then 1-3 for size)
(Then plot multi-color pattern)
Define (Cancel) ----- ESC key
Define (End) ----- shift L (Then 1-5)
USE ----- shift T or <Til> (Then 1-5)
PICTURE
Erase ----- E
LOAD from Disk ----- L or <Loa> (Then 0-9)
Load from RAMDISK ----- shift "Down Arrow" (Then 0-9)
Shift (From cursor to
upper left corner) ----- K
Stop immediately ----- *
SAVE to Disk ----- S or <Sav> (Then 0-9)
Save to RAMDISK ----- shift "Up Arrow" (Then 0-9)
PLOT ----- P or <Plt>
THICK ----- T or <Thk>
SCALING ----- shift Z or <Scl> (See manual)
Cancel ----- ESC key
Stop immediately ----- *
STAMP (1-4)

Define ----- R (Then 1-3 for small or 4 for large)
Define (Cancel) ----- ESC key
Exit ----- NEW COMMAND
USE ----- N or <Stp> (Then 1-4)
TEXT ----- , or <Txt> (Then 1-4 for size)
Stop/Cancel ----- ESC key
WINDOW (Wipe,Vflip,Hflip,
rotate,Animate) ---- shift W or <Wnd> (See manual)
UNDO ----- U or <Und>
ZOOM (On/off toggle)
(Four Color Mode Only) ---- ATARI key