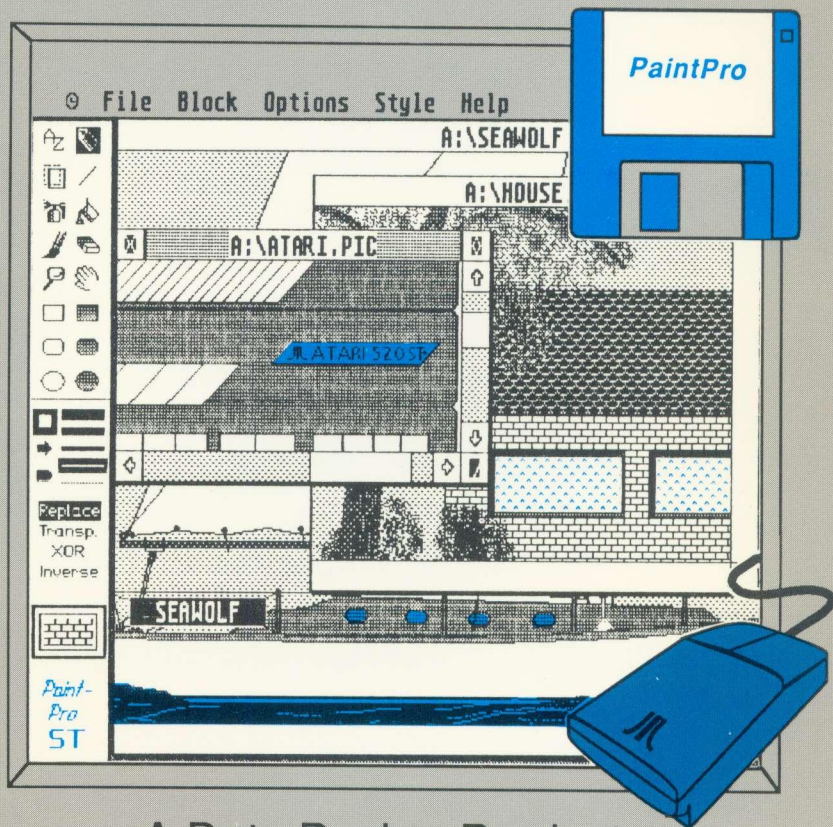


# PaintPro

For creative illustrations on the Atari ST

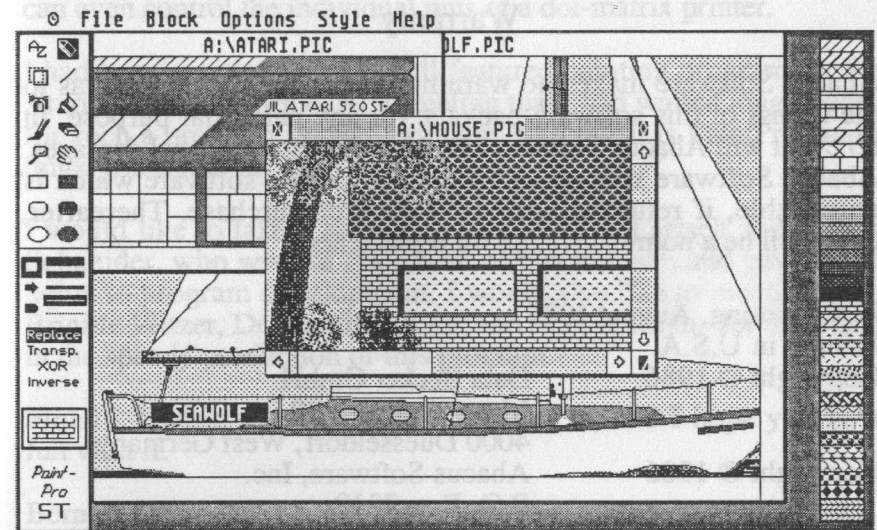


A Data Becker Product

You Can Count On  **Software**

# PaintPro

Graphic design package for the Atari ST



Bernd Lohr

A Data Becker Product from

Abacus  Software

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## Preface

If you ask the average man-on-the-street what he knows about windows, you'll probably be told that they are made of wood, glass, plastic, and metal. You, however, are an ST owner, and know that a window is also a screen display that can be as large or small as you want. Windows can be resized, exchanged or duplicated. Working with them is easy.

The pictures or images in ST PaintPro are "bit-mapped". These pictures are composed of individual pixels- thousands of them. The TALL format offers you over half a million points (512,000). You can even control the individual pins of a dot-matrix printer.

I had been wanting to use a full featured painting program for the Atari ST for some time. After feeling that I had waited long enough for such a program I wrote my own. The result is PaintPro, and I think you'll like it.

I would like to take a moment to thank Dirk Larisch and Jochen Schneider, who wrote a good deal of this manual, and gave many hours to program development. I would also like to mention Frau Brigitte Witzer, Dr. Achim Becker and Marius Heyn, for their help in the speedy production of this program.

Finally, I wish you luck with ST PaintPro, and I hope you have fun with it.

Bernd Lohr  
April 1986

Preface

Copyright

If you ask the average man-on-the-street what he knows about computers, you'll probably be told that they are made of wood. You'll also hear that they are slow, expensive, and difficult to use. In fact, a window is like a screen display that can be changed at will by your window manager. You can even control the individual pixels of a dot-matrix printer.

I had been waiting to see a full featured painting program for the Atari ST for some time. After looking at the Atari ST, I was convinced that such a program would be available. I was wrong. The only program I could find was a simple drawing program. I had to write my own. I would like to take a moment to thank Dr. Achim Becker and Markus Hoyer for their help in the speedy production of this program.

Finally, I wish you luck with STPaint, and I hope you have fun with it. I would like to thank Dr. Achim Becker and Markus Hoyer for their help in the speedy production of this program.

STPaint is a trademark of Atari Corp.

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Table of Contents

	Preface	i
Chapter 1	Starting Out	1
1.1	The Screen Areas	7
1.2	The Window	9
1.2.1	Window Size	9
1.2.2	Cropping	10
1.2.3	Moving the window	11
1.2.4	Closing the window	12
Chapter 2	The Menu List	13
2.1	Clock Symbol	15
2.2	File	16
2.2.1	Open	16
2.2.2	...abandon...	16
2.2.3	...save...	17
2.2.4	...close	17
2.2.5	Save as...	17
2.2.6	Load DOODLE pic	17
2.2.7	Save DOODLE pic	17
2.2.8	Delete file	18
2.2.9	Print Picture	18
2.2.10	Quit	18
2.3	Block	19
2.3.1	Copy	19
2.3.2	Cut	20
2.3.3	Paste	21
2.3.4	Load Block	21
2.3.5	Save Block	21
2.3.6	Negative	22
2.3.7	Horizontal Mirroring	23
2.3.8	Vertical Mirroring	23
2.3.9	Rotate	24

2.4	Options	25
2.4.1	Undo	25
2.4.2	Full Screen	25
2.4.3	File Format	26
2.4.4	Brush Types	26
2.4.5	Spray size	27
2.4.6	Clear screen	27
2.5	Style	28
2.5.1	Font Type	28
2.5.2	Direction	29
2.5.3	Size	30
2.5.4	Bold, Italics, Underlined, Outlined	31
2.6	Help	32
<b>Chapter 3</b>	<b>The Toolkit</b>	<b>33</b>
3.1	Pencil	35
3.2	Text	35
3.3	Mark Block	35
3.4	Line	36
3.5	Spray	36
3.6	Fill	36
3.7	Brush	37
3.8	Eraser	37
3.9	Zoom	37
3.10	Block Functions	39
3.11	Geometric Figures	40
3.12	Line Thickness	41
3.13	Line Ends	41
3.14	Drawing modes	42
3.14.1	Replace	42
3.14.2	Transparent	42
3.14.3	XOR	42
3.14.4	Inverse	44
3.15	Fill pattern	44
Appendix A	Error Messages	47
Appendix B	Printer Adaptations	48
Appendix C	Adding your own printer driver	50

Starting Out

ST PaintPro requires the following minimal hardware:

- 520 ST or 1040 ST
- 1 floppy disk drive
- Monochrome or color monitor, depending on PaintPro version
- And mouse
- Printer: See

## Chapter 1

### Starting Out

To insure that you should read this chapter first. It contains the most important information for you to know about the program. You should also check the diskette and see the README.TXT file which contains additional information for you to know about the program. You should also check the diskette and see the README.TXT file which contains additional information for you to know about the program.

First, a word about program requirements. The program diskette requires a minimum of 520K of free space on your hard disk. You may want to check to make sure your printer will work with ST PaintPro (see Appendix B).

Insert the ST PaintPro diskette into drive A and move the mouse arrow to the FILE menu. Click the left mouse button to open the FILE menu. Move the mouse arrow to the OPEN menu. Click the left mouse button to open the OPEN menu. Move the mouse arrow to the FILE menu. Click the left mouse button to open the FILE menu.

If you have never opened a disk before (no time to learn like the old days), here is another method:

Move the mouse arrow (pointer) until it is positioned over the FILE menu. Press the left mouse key. The word FILE will change color to indicate that it has been selected. Move the mouse arrow to the OPEN menu. Press the left mouse key. The word OPEN will change color to indicate that it has been selected. Move the mouse arrow to the FILE menu. Press the left mouse key. The word FILE will change color to indicate that it has been selected.

Move the mouse arrow within the FILE menu until it is positioned over the OPEN menu. Press the left mouse key. The word OPEN will change color to indicate that it has been selected. Move the mouse arrow to the FILE menu. Press the left mouse key. The word FILE will change color to indicate that it has been selected.

2.4	Options	23
2.4.1	Undo	23
2.4.2	Full Screen	23
2.4.3	File Format	23
2.4.4	Brush Types	23
2.4.5	Spray size	23
2.4.6	Clear screen	23
2.5	Style	24
2.5.1	Font Type	24
2.5.2	Direction	29
2.5.3	Size	30
2.5.4	Bold, Italic, Underline, Outline	31
2.6	Help	32
Chapter 3	The Toolkit	33
3.1	Pencil	35
3.2	Text	35
3.3	Mark Block	35
3.4	Line	36
3.5	Spray	36
3.6	Fill	36
3.7	Brush	37
3.8	Eraser	37
3.9	Zoom	37
3.10	Block Functions	39
3.11	Geometric Figures	40
3.12	Line Thickness	41
3.13	Line Ends	41
3.14	Drawing modes	42
3.14.1	Replace	42
3.14.2	Transparent	42
3.14.3	XOR	42
3.14.4	Inverse	42
3.15	Fill pattern	42
Appendix A	Error Messages	47
Appendix B	Printer Adaptation	48
Appendix C	Adding your own printer driver	50

## Starting Out

ST PaintPro requires the following minimal hardware:

520 ST or 1040 ST  
 1 floppy disk drive  
 Monochrome or color monitor,  
 depending on PaintPro version  
 Atari mouse  
 Printer: See Appendix B

To insure trouble-free operation of ST PaintPro, you should read this chapter. It explains how to start ST PaintPro and use its features. You should also check the diskette and see the README.TXT file which contains additional information not found in this manual.

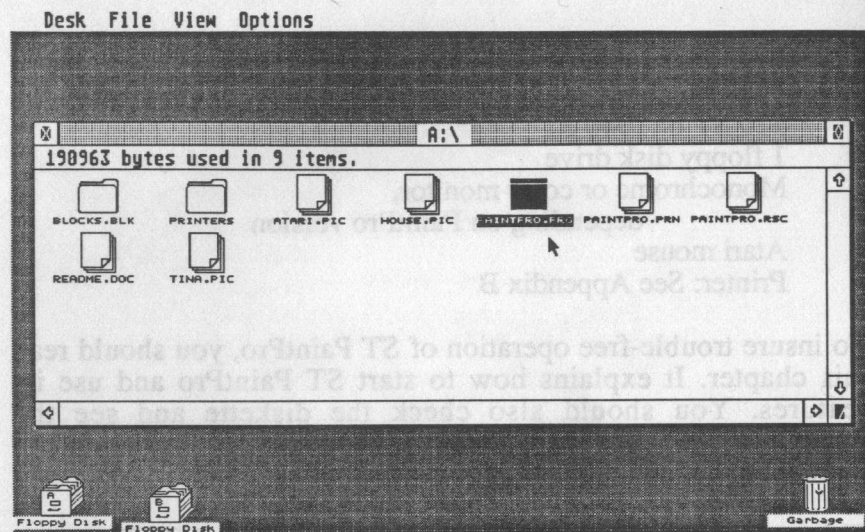
First, a word about printer configuration files and ST PaintPro. The program diskette contains a number of printer configuration files for different printers. You may want to check to make sure your printer will work with ST PaintPro (see Appendix B).

Insert the ST PaintPro diskette into drive A and move the mouse arrow to the FLOPPY DISK A icon on the screen. Click the left mouse button twice in rapid succession; this opens a window and shows the directory of the ST PaintPro distribution diskette.

If you've never opened a disk before (no time to learn like the present), here is another method:

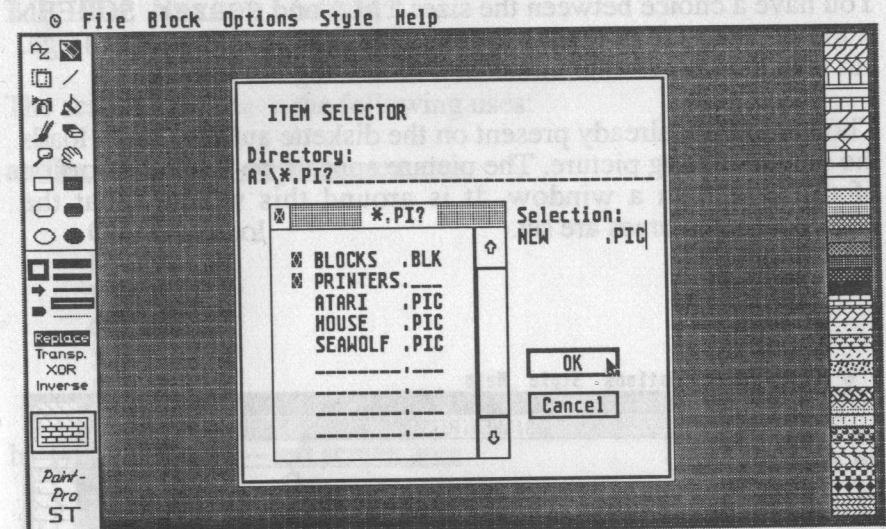
Move the mouse arrow (pointer) until it is positioned over the FLOPPY DISK A icon, and press the left mouse key. The icon will change color to indicate that it has been selected. Move the mouse pointer to the menu title FILE. A drop-down menu will appear.

Move the mouse within the FILE drop-down menu until it is positioned over the OPEN and press the left mouse key again. The entire directory of the program diskette is displayed on screen:

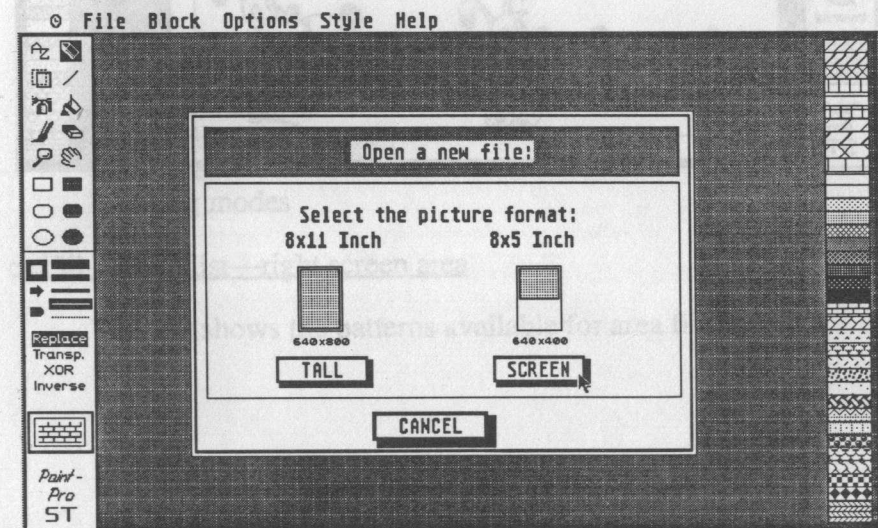


Starting the program `PAINTPRO.PRG` is much like calling up the directory. Move the mouse pointer to the `PAINTPRO.PRG` icon and start the program by double-clicking the left mouse key. You can also choose the program icon with the mouse pointer. Click the left mouse button once and choose `OPEN` from the `FILE` menu.

A few seconds pass, and the program begins with an item selector screen. See the following illustration. The program waits for a name for the first window to be opened. The default name is `NEW.PIC`. You can choose this name by pressing `<RETURN>`, or you can erase `NEW.PIC` using the `<BACKSPACE>` key and type in a new name. If you want to use a picture that has been designed previously, click on the picture's name (it will appear in the file box) and press `<RETURN>`. For now simply select the `OK` box to create a `NEW.PIC` picture.

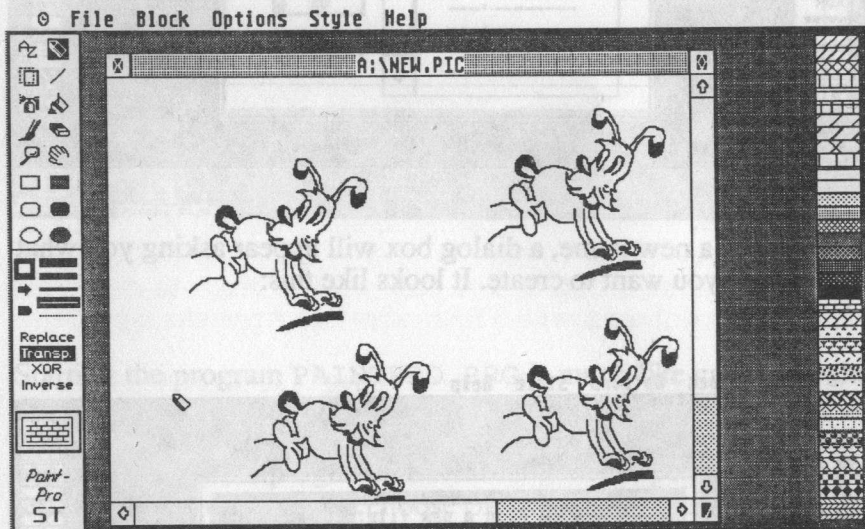


If you input a new name, a dialog box will appear asking you what size picture you want to create. It looks like this:



You have a choice between the sizes TALL and SCREEN. SCREEN is the normal size of the screen and TALL is really twice as large, but may be viewed one screen at a time using the scroll bar.

Choosing a file already present on the diskette automatically loads the corresponding picture. The picture appears on the inner portion of the screen in a window. It is around this window that the different screen areas are set.



## 1.1 The Screen Areas

The screen areas have the following uses:

### a) The menu list—upper screen area

- Clock symbol
- File
- Block
- Options
- Style
- Help

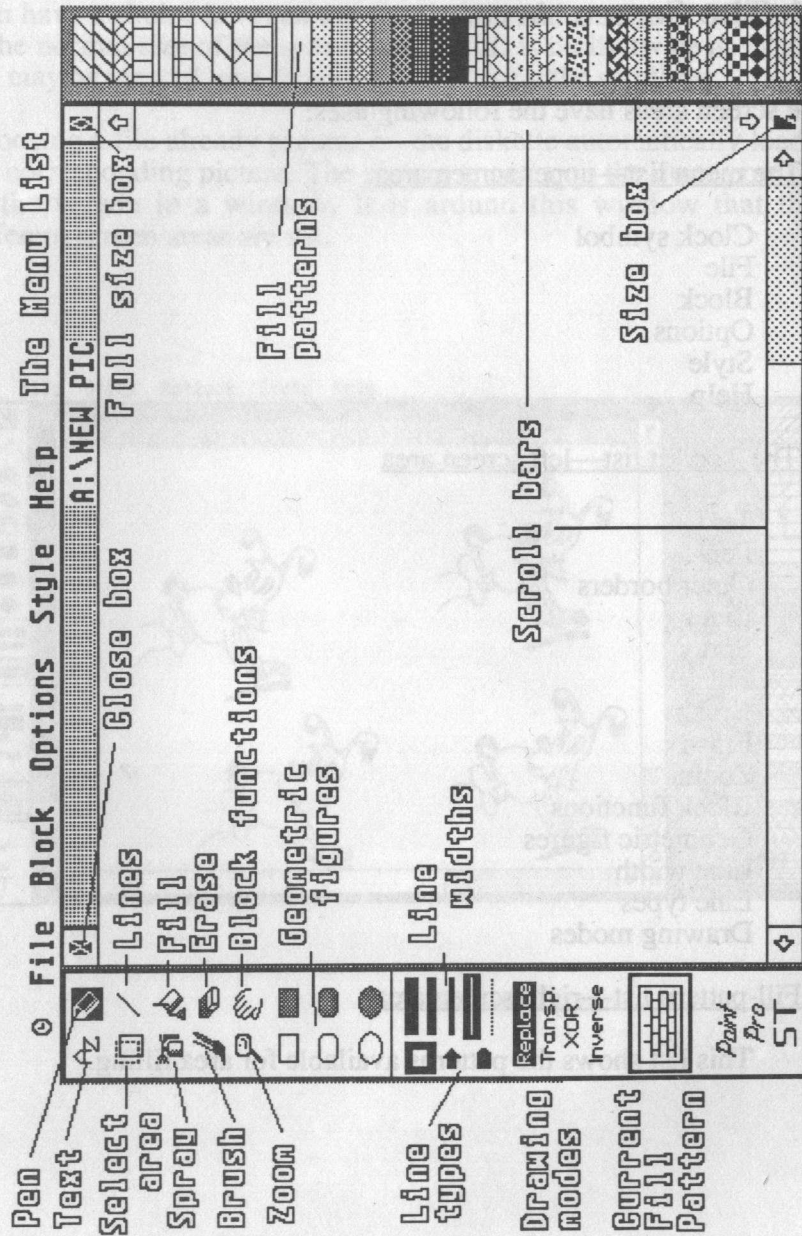
### b) The Toolkit list—left screen area

- Text
- Pen
- Outer borders
- Lines
- Spray
- Fill
- Brush
- Erase
- Zoom
- Block functions
- Geometric figures
- Line width
- Line types
- Drawing modes

### c) Fill-pattern list—right screen area

This list shows the patterns available for area filling.



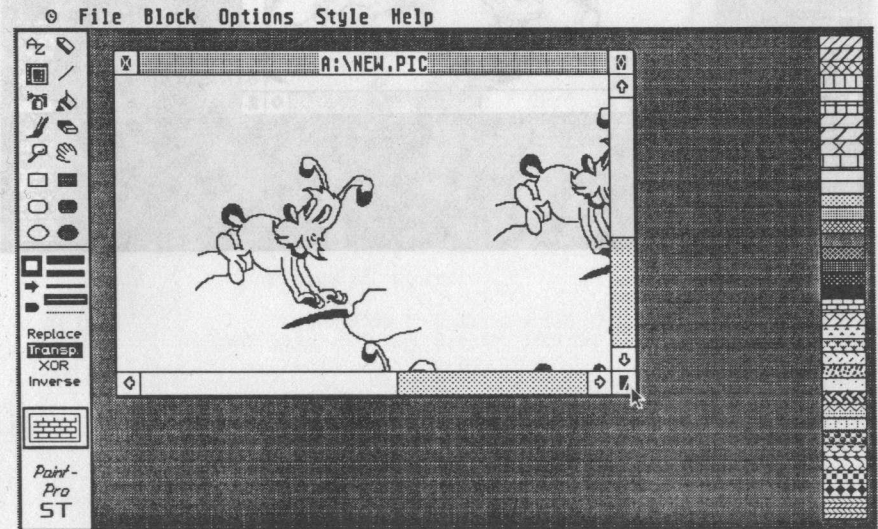


## 1.2 The Window

The space between the screen areas is the work area. It is also called a *window*. You can open and edit up to three windows at a time in ST PaintPro. To differentiate between each window, you can adjust them by SIZE and POSITION.

### 1.2.1 Window size

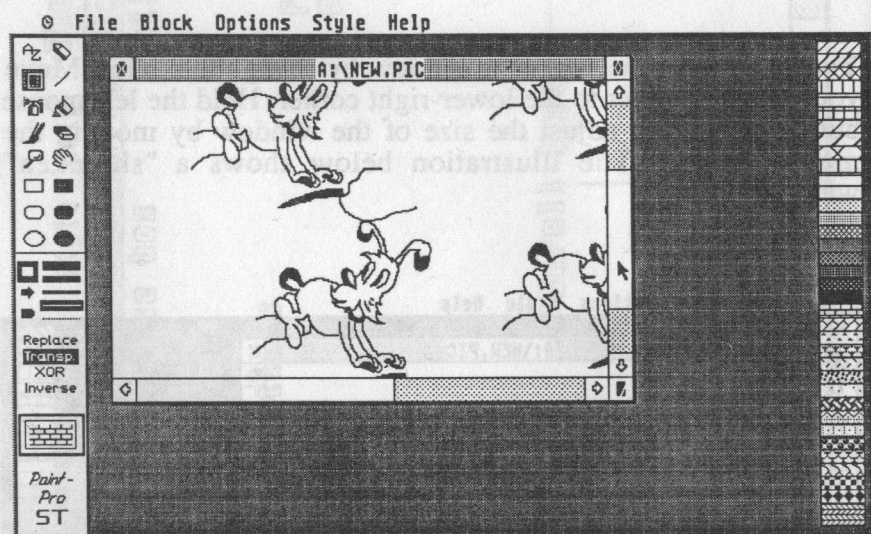
You can adjust the size of a window by using the mouse. Move your mouse pointer to the lower-right corner. Hold the left mouse button down and adjust the size of the window by moving the mouse around. The illustration below shows a "shrunk" window:



## 1.2.2 Cropping

You can specify the area of the window that is to appear by using the scroll bars to "crop" the picture.

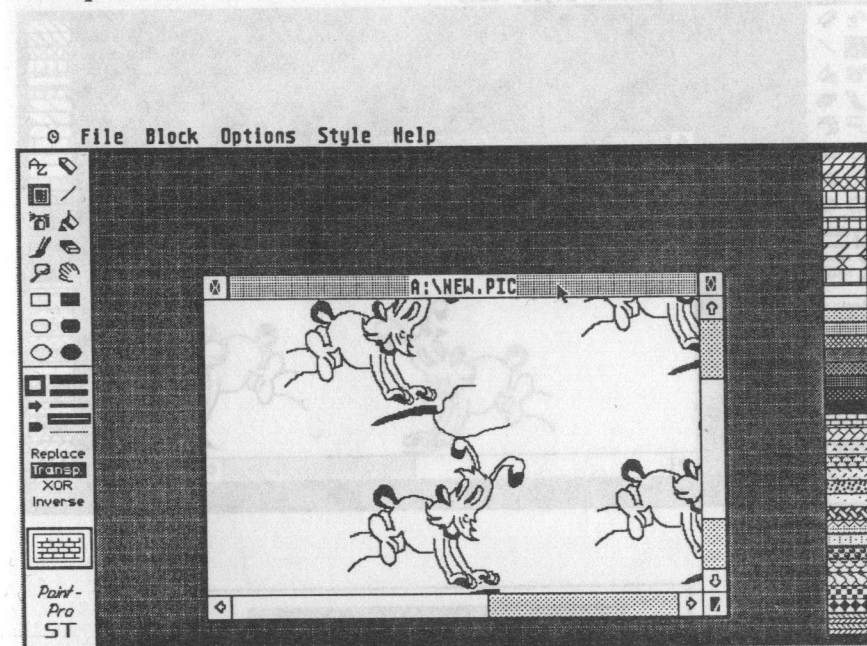
Move the mouse pointer to the white area at the the right window border. Hold down the left mouse button and move the white space up or down to see another area of the picture.



## 1.2.3 Moving the window

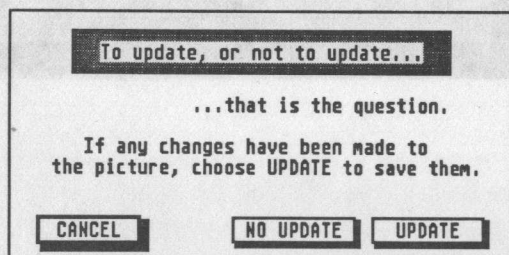
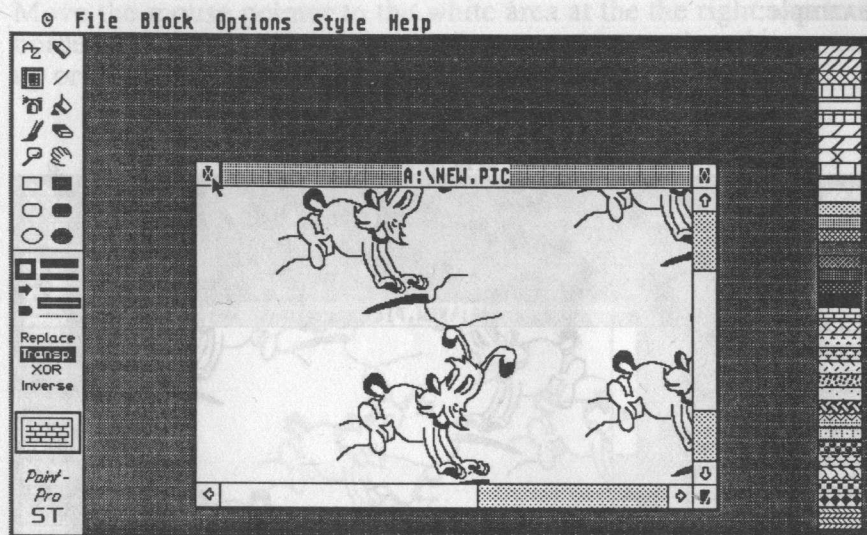
You can move an entire window.

Move the mouse pointer to the title bar of the window. Hold the left mouse button down, and move the window around. Here is an example:



## 1.2.4 Closing the window

You can close a window when you are done working with it. Click the close button in the upper-left corner of the window to close that window.



Here a message appears to remind you that the picture may not yet have been saved. Clicking **UPDATE** saves the picture under the name you specified when you opened the window.

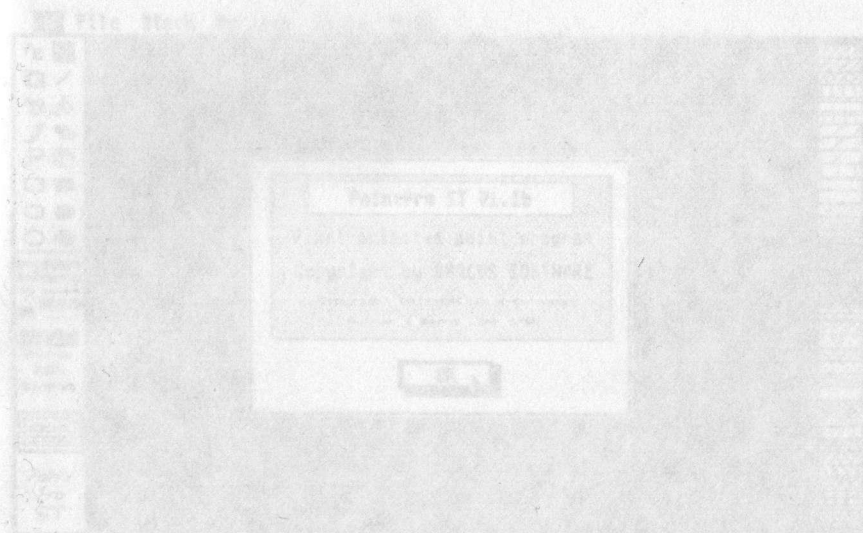
## The Menu List

## Chapter 2

### The Menu List

## 2.1 Click symbols

This selection gives you the following options:



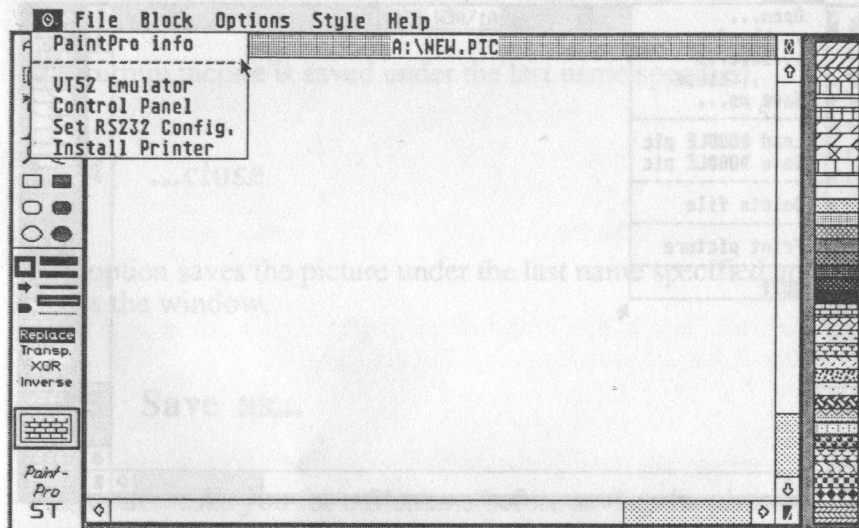
### 1.2.4 Closing the window

You can close a window when you are done working with it. Click the clock button in the upper-left corner of the window to close that window.



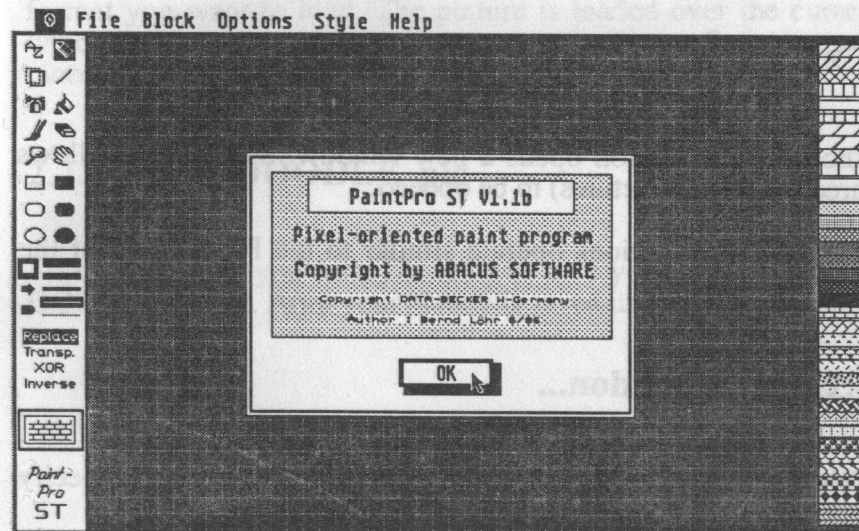
Here a message appears to remind you that the picture may not yet have been saved. Clicking UPDATE saves the picture under the name you specified when you opened the window.

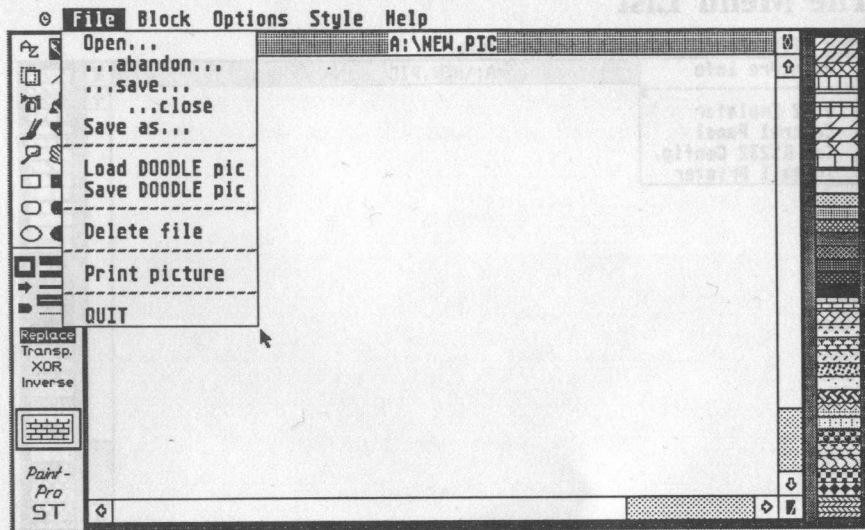
### The Menu List



### 2.1 Clock symbol

This selection gives you information about ST PaintPro.





## 2.2 File

This box contains all the file menu options. We will discuss these individually.

### 2.2.1 Open

Choosing this option opens a new window. ST PaintPro allows three windows (pictures) to be opened.

The following options operate similar to the FILE menu of the desktop.

#### 2.2.2 ...abandon...

This option re-loads the last saved picture without having to specify its name.

### 2.2.3 ...save...

The current picture is saved under the last name specified.

### 2.2.4 ...close

This option saves the picture under the last name specified and then closes the window.

### 2.2.5 Save as...

This option asks you for a filename before saving the picture.

### 2.2.6 Load DOODLE pic

This option asks you for the name of the picture in DOODLE format you want to load. The picture is loaded over the current window. The previous screen is overwritten (**Note:** Save your old picture before using this option).

### 2.2.7 Save DOODLE pic

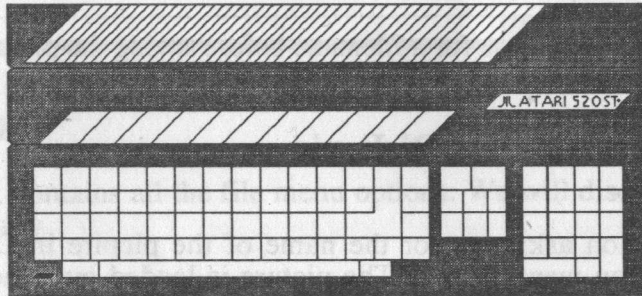
This option asks you for a filename to save your picture under in DOODLE format. After your picture is saved it is still on screen.

## 2.2.8 Delete file

Choosing this option displays a file selector box. Enter the filename of the file you want to delete and press <RETURN>.

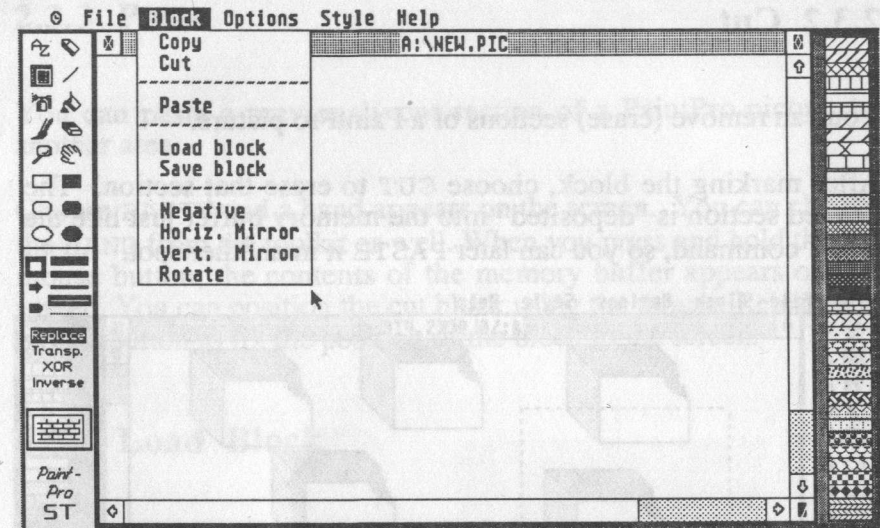
## 2.2.9 Print picture

This option sends a hardcopy of your picture to the printer. See Appendix B for information on different printers.



## 2.2.10 QUIT

You can end the program at any time with this option. This option displays the update window. If you don't want to save the changes you click NO UPDATE. Clicking the mouse on UPDATE will save your changes under the last filename specified. If you wish to return to ST PaintPro instead of ending the program, choose CANCEL.



## 2.3 Block

This menu works with the MARK BLOCK option in the tool box. It is used to mark items on the screen for use with the options in this menu. To better understand what this option does, read the sections on the toolbox options, 3.3 Mark Block and 3.10 Block Functions.

### 2.3.1 Copy

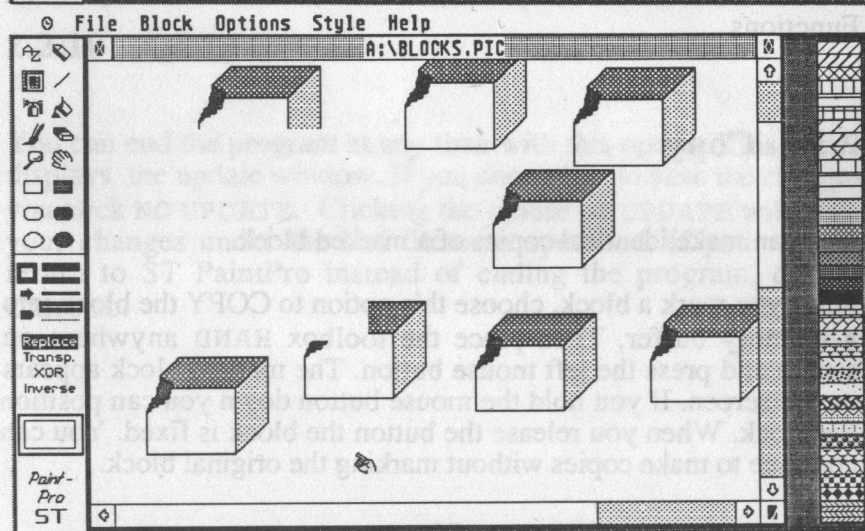
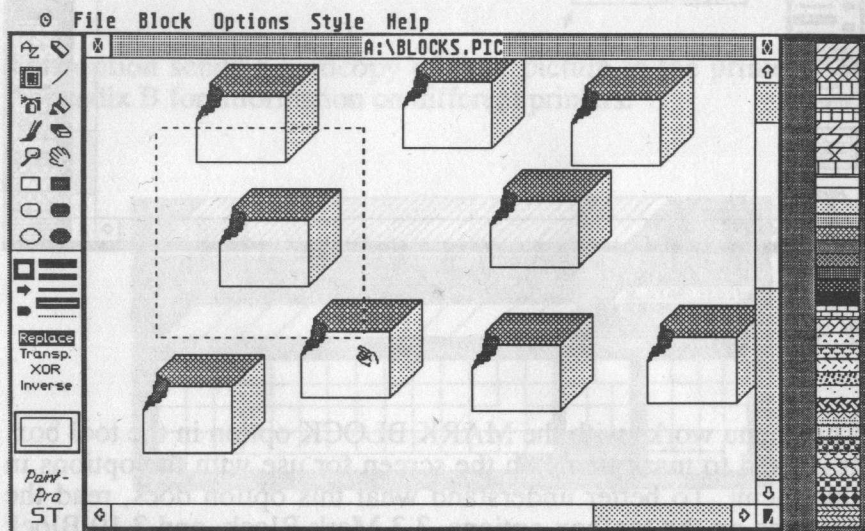
You can make identical copies of a marked block.

After you mark a block, choose this option to COPY the block into a memory buffer. Then place the toolbox HAND anywhere on screen and press the left mouse button. The marked block appears on the screen. If you hold the mouse button down you can position the block. When you release the button the block is fixed. You can continue to make copies without marking the original block.

## 2.3.2 Cut

You can remove (erase) sections of a PaintPro picture.

After marking the block, choose CUT to erase that section. The deleted section is "deposited" into the memory buffer just like the COPY command, so you can later PASTE it in another spot.



## 2.3.3 Paste

You can paste a previously cut section of a PaintPro picture to another area.

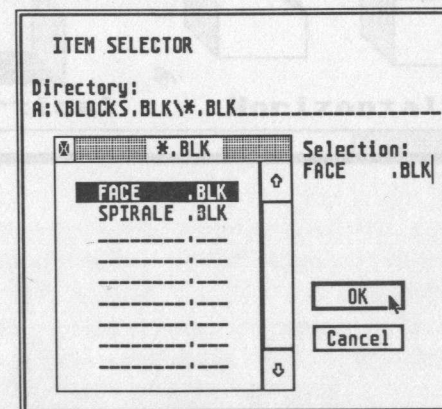
Choose PASTE and a hand appears on the screen. You can choose the HAND from the toolkit as well. When you press and hold the left mouse button, the contents of the memory buffer appears on the screen. You can position the cut block using the mouse. Release the mouse button to fix the position of the block to the screen.

## 2.3.4 Load Block

Sections of the picture can be saved to diskette (see Save Block). Choosing this option lets you load the saved section into the memory buffer and position it on the screen using PASTE.

## 2.3.5 Save Block

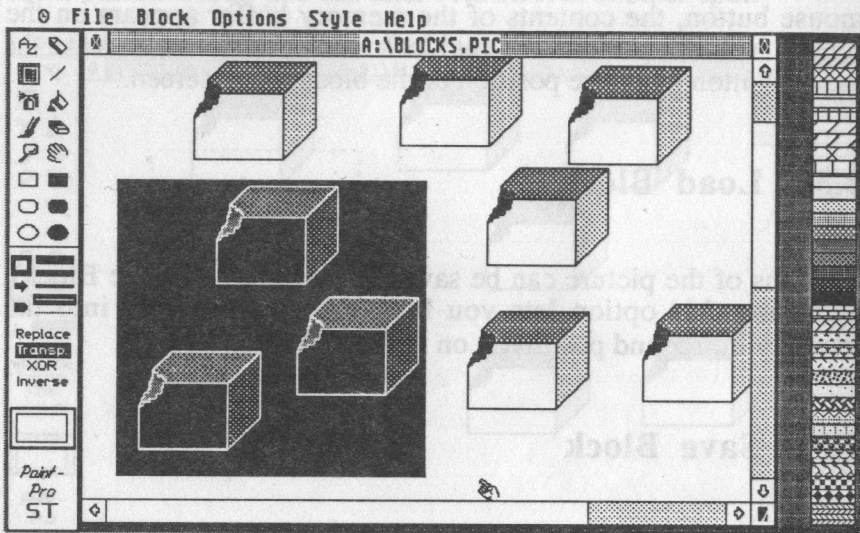
Sections of the picture can be saved to diskette with this menu option. The section to be saved must be in the block buffer.



### 2.3.6 Negative

You can invert the color of a section of a picture.

In other words, black points are changed to white and vice versa.



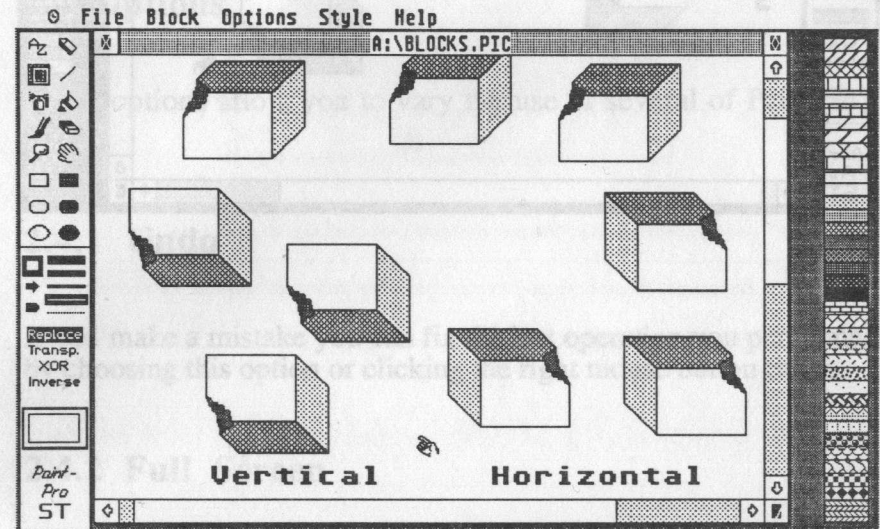
### 2.3.7 Horizontal Mirroring

You can mirror the image of the section of a picture.

A section of a picture can be mirrored horizontally by choosing this option.

### 2.3.8 Vertical Mirroring

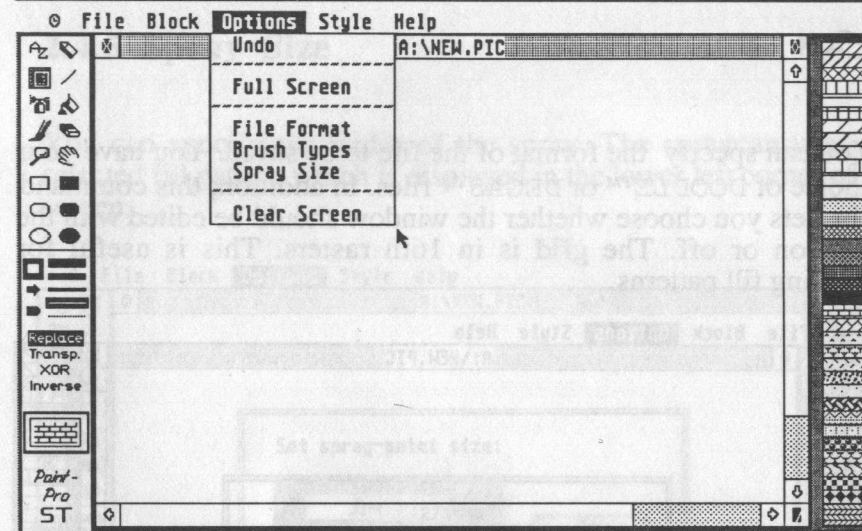
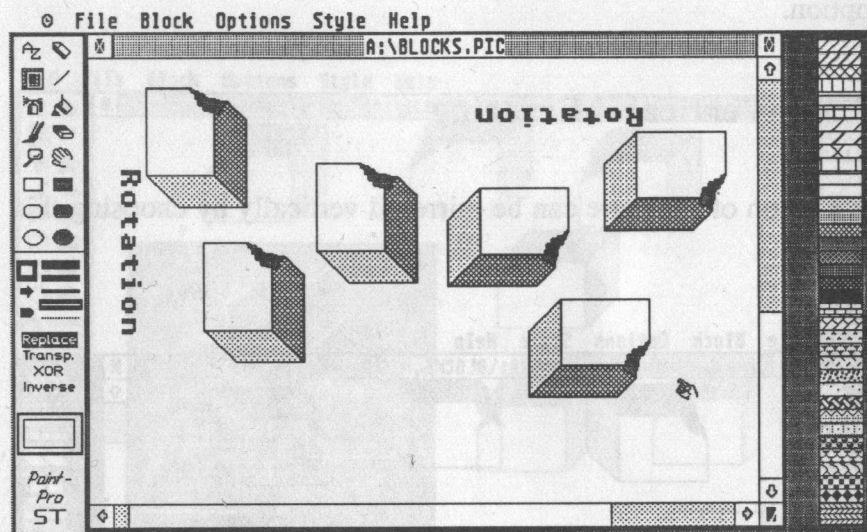
A section of a picture can be mirrored vertically by choosing this option.





## 2.3.9 Rotate

You can rotate a section of a picture in 90-degree increments by choosing this option.



## 2.4 Options

These options allow you to vary the use of several of PaintPro's tools.

### 2.4.1 Undo

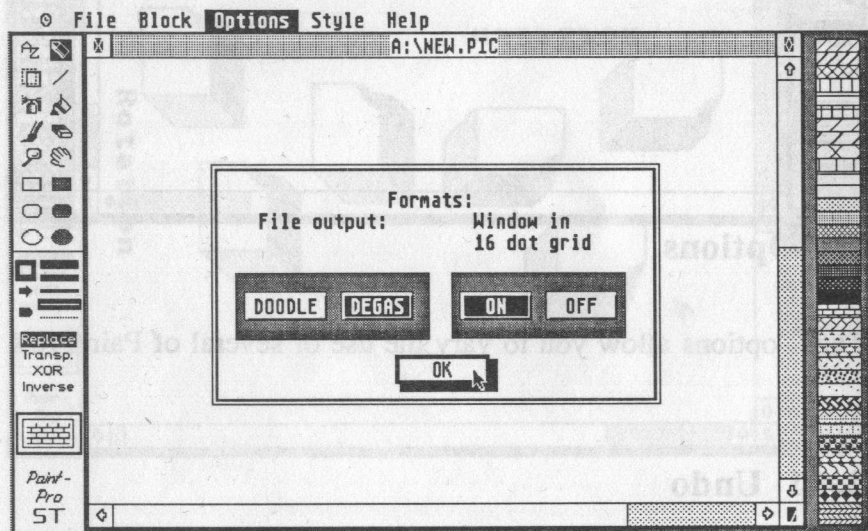
If you make a mistake you can fix the last operation you performed by choosing this option or clicking the right mouse button twice.

### 2.4.2 Full Screen

Depending on which format you use to open a window, there will be times when your drawing goes beyond the screen borders. Choosing this command will hide the menu and other screen areas and display the entire picture. In full screen mode, pictures in SCREEN format are shown in their entirety on the screen. TALL formats can be scrolled using the mouse. Press the right mouse button to redisplay the menu and the screen areas.

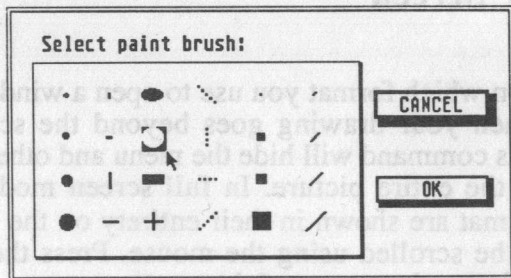
### 2.4.3 File Format

You can specify the format of the file to be saved. You have your choice of DOODLE™ or DEGAS™ files. In addition, this command also lets you choose whether the window should be edited with the grid on or off. The grid is in 16th rasters. This is useful for aligning fill patterns.



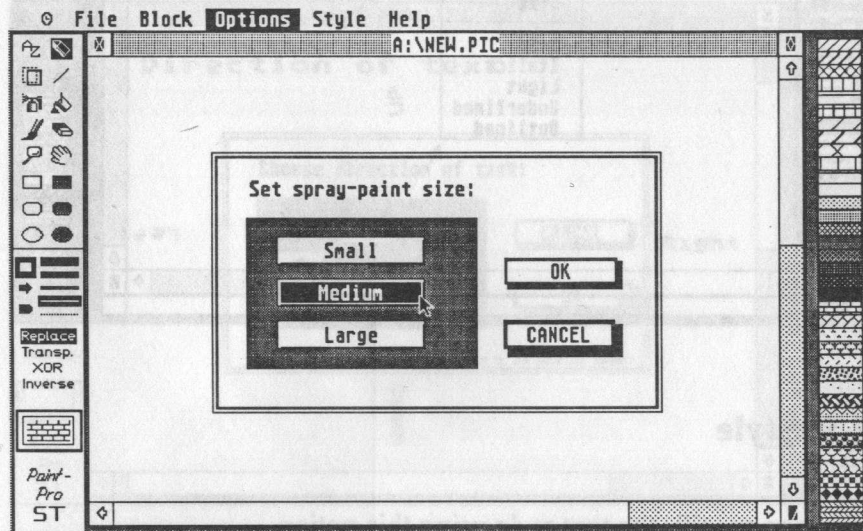
### 2.4.4 Brush Types

You can specify one of 24 different paint brushes with which to draw.



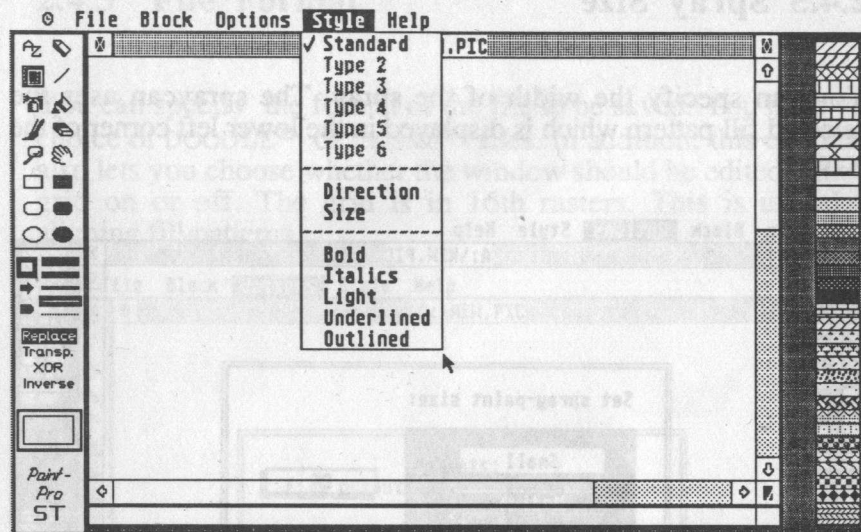
### 2.4.5 Spray Size

You can specify the width of the spray. The spraycan uses the selected fill pattern which is displayed in the lower left corner of the screen.



### 2.4.6 Clear Screen

You can erase the entire active window with this option.



## 2.5 Style

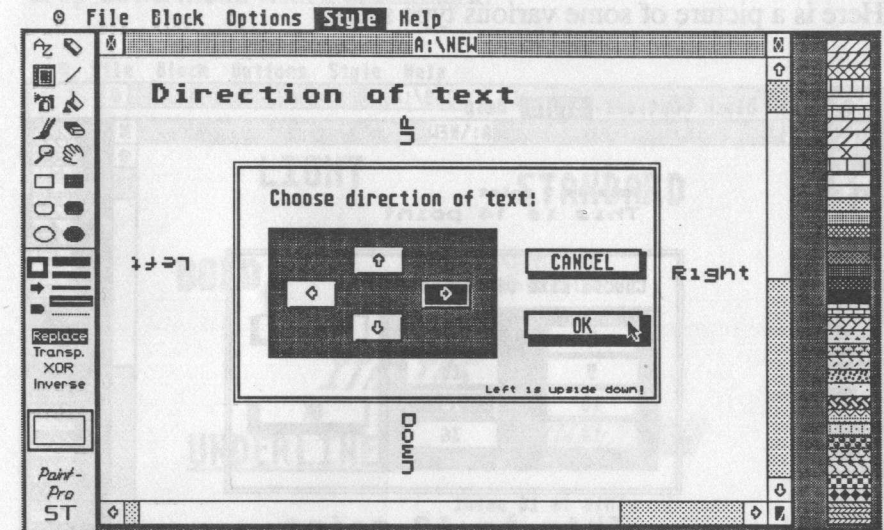
You can specify the text style using this option.

### 2.5.1 Font Type

This option displays a menu of the available fonts. To choose a font just click the mouse button on the desired name. A checkmark is displayed next to the font you choose. Standard is the Atari system font. The Type 2-6 fonts are GEM GDOS fonts (see the README.TXT file on the disk for more information.)

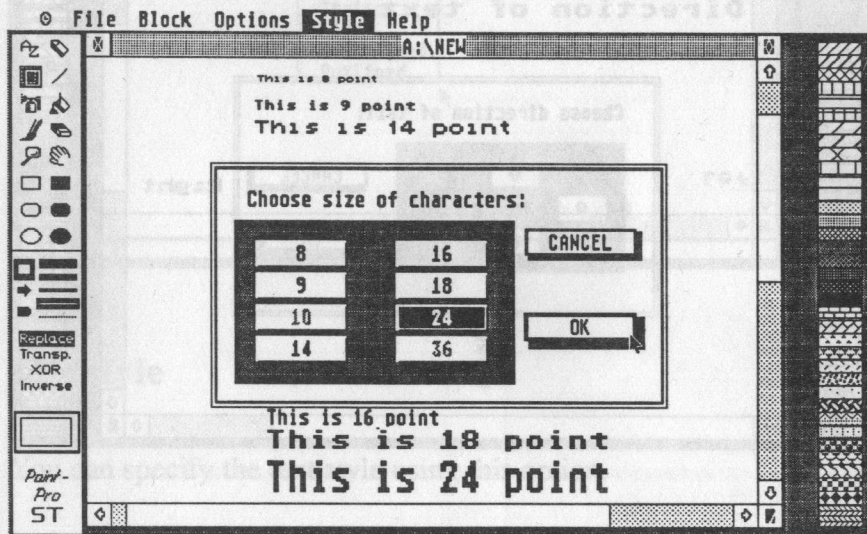
### 2.5.2 Direction

You specify the display direction of the text. The text can be written in one of four directions.



### 2.5.3 Size

You can specify one of eight different type sizes (8 to 36 point). A point is a typographical measurement of 1/72 of a inch. The type sizes available will depend on the font sizes loaded by the GDOS. Here is a picture of some various type sizes:

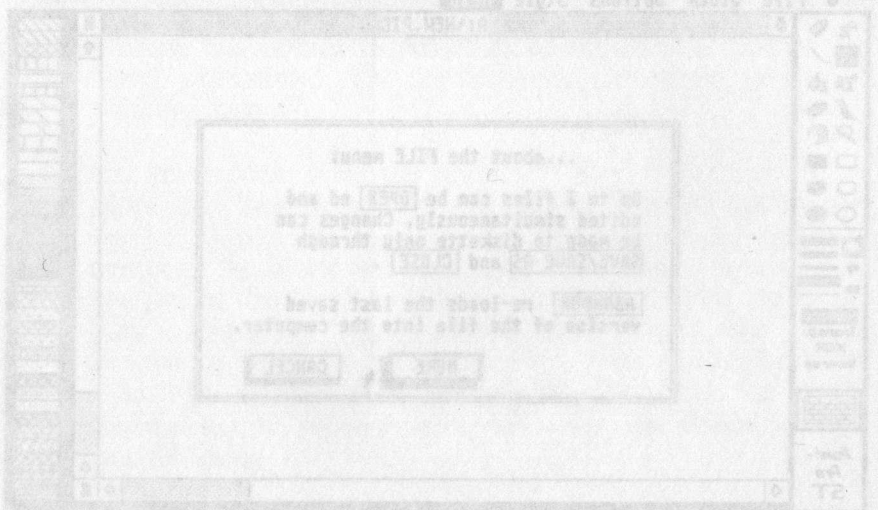
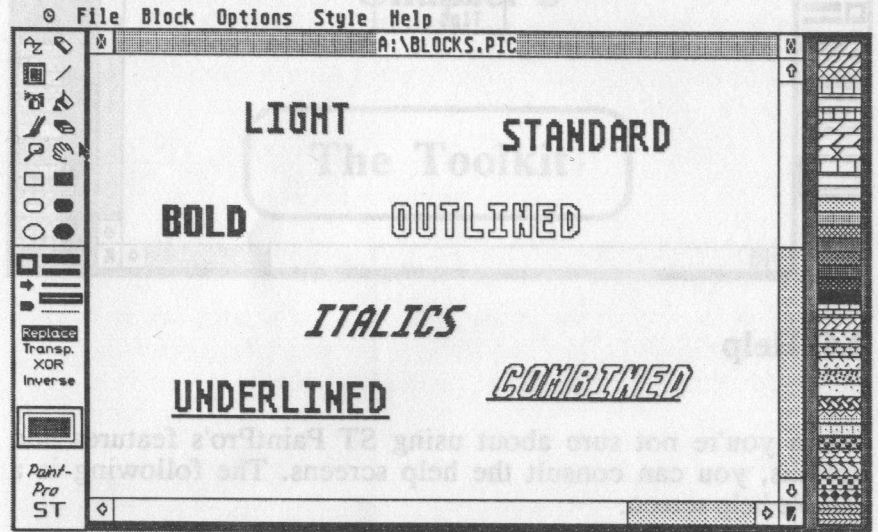


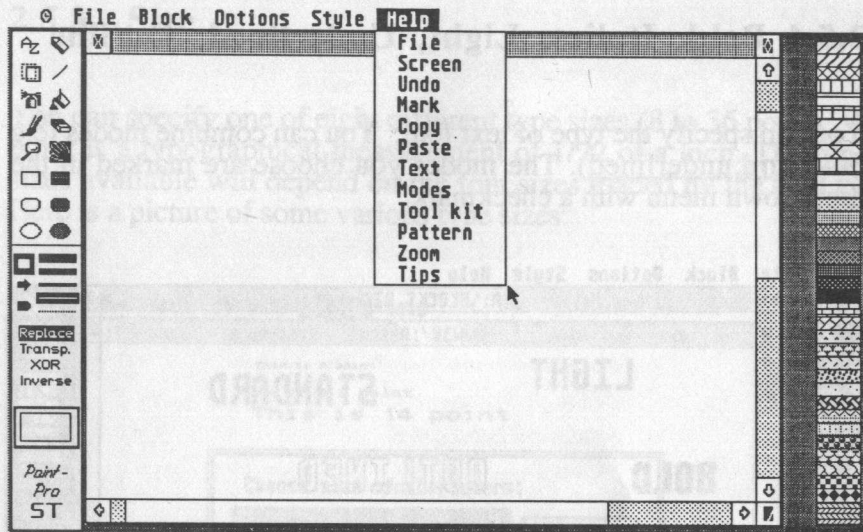
### 2.5.1 Font Type

This option displays a menu of the available fonts. To choose a font just click the mouse button on the desired name. A checkmark is displayed next to the font you choose. Standard is the Atari system font. The Type 2-6 fonts are GEM GDOS fonts (see the README.TXT file on the disk for more information.)

### 2.5.4 Bold, Italics, Light, Underlined, Outline

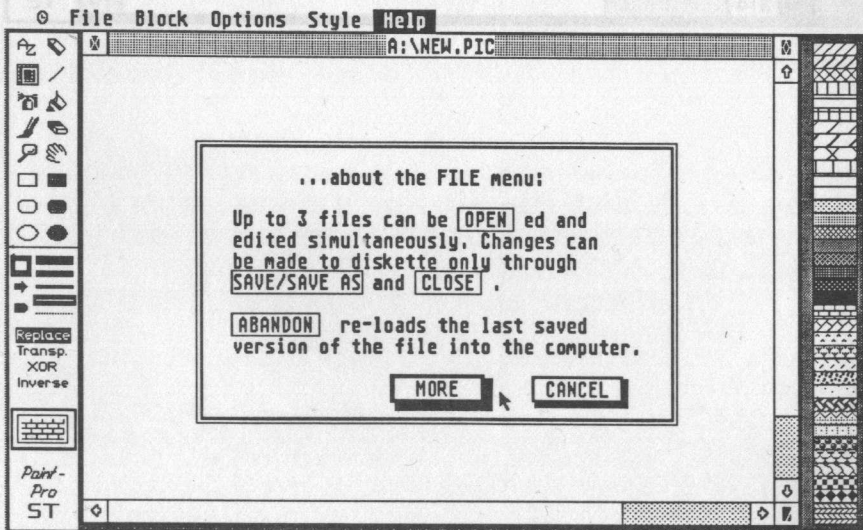
You can specify the type of text font. You can combine modes (e.g bold and underlined). The modes you choose are marked in the drop-down menu with a checkmark.





## 2.6 Help

When you're not sure about using ST PaintPro's features and options, you can consult the help screens. The following is a sample help screen:



## The Toolkit

### 3.1 Pencil

Choose this option to draw lines.

## Chapter 3

To draw, press the left mouse button while moving the mouse.

## The Toolkit

### 3.2 Text

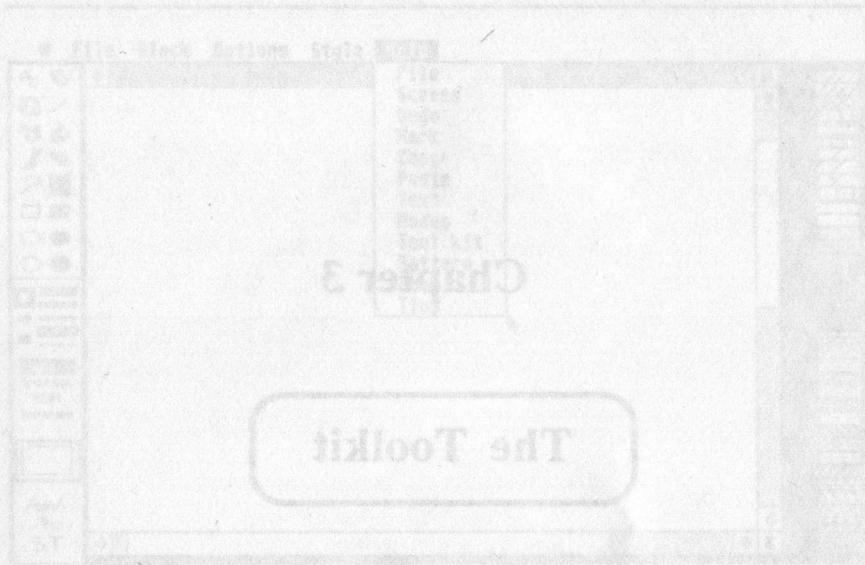
Choose this option to type characters.

Use the mouse to move the cursor to the desired screen position and press the left mouse button. You can enter text by using the keyboard. The space key moves until you select another tool.

### 3.3 Mark Block

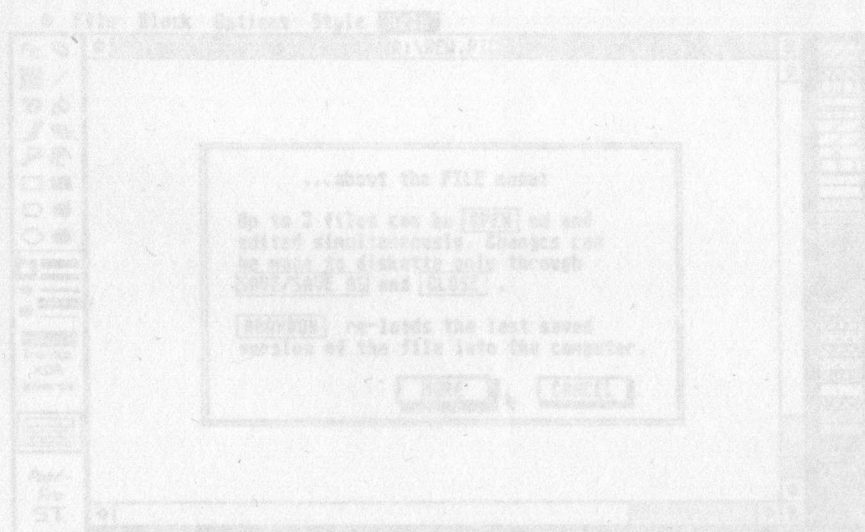
Choose this option to delineate a section of a picture for block operations. The mark block cursor appears as a pointing finger.

Use the mouse to fix the upper left diagonal corner of the block and then press and continue to hold the left mouse button. Move the mouse to fix the lower right diagonal corner of the block and then release the mouse button. The borders of the block will begin to flash. If you move the cursor (pointing finger) inside of the block, the cursor becomes a hand. To move the block, press and hold the left mouse button and move the mouse to reposition the block. Release the left mouse button when the new screen position is satisfactory.



## 2.6 Help

When you're not sure about using ST PaintPro's features and options, you can consult the help screens. The following is a sample help screen:



## The Toolkit

### 3.1 Pencil

Choose this option to draw freehand.

To draw, press the left mouse button while moving the mouse.

### 3.2 Text

Choose this option to type text within a PaintPro picture.

Use the mouse to move the text cursor to the desired screen position and press the left mouse key. Now you can enter text by using the keyboard. Text mode is active until you select another tool.

### 3.3 Mark Block

Choose this option to delineate a section of a picture for block operations. The mark block cursor appears as a pointing finger.

Use the mouse to fix the upper left diagonal corner of the block and then press and continue to hold the left mouse button. Move the mouse to fix the lower right diagonal corner of the block and then release the mouse button. The borders of the block will begin to flash. If you move the cursor (pointing finger) inside of the block, the cursor becomes a hand. To move the block, press and hold the left mouse button and move the mouse to reposition the block. Release the left mouse button when the new screen position is satisfactory.

After marking a block, you can also use the options under the BLOCK menu.

### 3.4 Line

Choose this option to draw a straight line.

Position the crosshair to the starting point of the line. Press and continue to hold the left mouse button. A rubberbanded line is displayed on the screen. Move the crosshair to the ending point of the line and release the left mouse button.

### 3.5 Spray

Choose this option to "draw" using the spray can. The cursor appears as a round spray nozzle. Press and hold the left mouse button to spray the screen area underneath the nozzle. The spray size can be controlled using the OPTIONS pull-down menu, Spray Size and the fill pattern.

### 3.6 Fill

Choose this option to fill an enclosed area on the screen.

The cursor appears as a cross. Move the mouse to position the cross into the area to be filled and press the left mouse button. The area is then filled with the fill pattern indicated in the lower left hand corner of the toolkit menu.

If the area is not 100% enclosed, some of the "paint" may spill out onto other areas of the picture. If this happens, you can use the UNDO option or immediately press the right mouse button.

### 3.7 Brush

Choose this option to paint with a brush.

The cursor appears as different shapes depending on the selection made from the OPTIONS menu BRUSH TYPES.

To paint using the brush, press and hold the left mouse button while moving the mouse. To stop painting, release the mouse button.

### 3.8 Eraser

Choose this option to erase a part of the screen.

The cursor appears as a rubber eraser. Press and hold the left mouse button to erase an area under the cursor.

### 3.9 Zoom

Choose this option to do detailed design work on a small section of the picture.

A zoom window opens to display the individual pixels of the picture as square blocks. A dotted frame in the upper left hand corner of the active window delineates the magnified screen area.

If the cursor (an arrow) is moved inside the dotted frame, it changes to a hand. You can zoom in on a different section of the picture by pressing and holding the left mouse button and moving the dotted frame to the desired area.

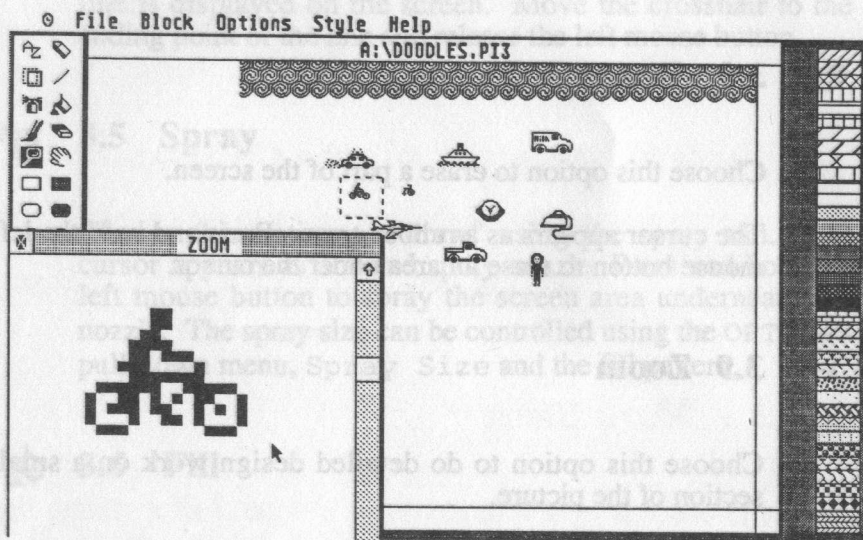
If the desired detail area is located "underneath" the zoom window, you must first move the zoom window to a

different area of the screen and then move the dotted frame to the desired detail area.

Alternately, you can change the desired detail area by using the scroll bars on the zoom window.

Within the zoom window, the individual pixels are turned on and off by pressing the left mouse button.

End this option by pressing the close button on the zoom window.



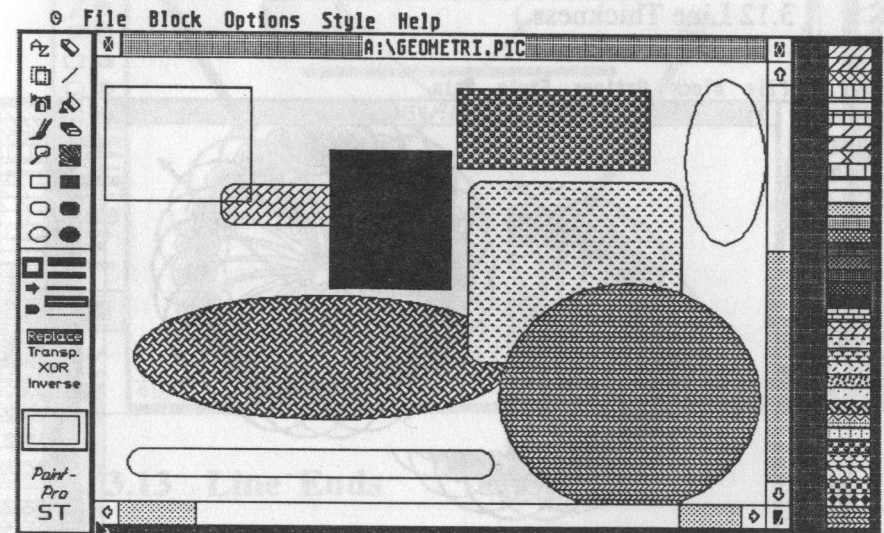
### 3.10 Block Functions

Choose this option to move or paste previously marked blocks.

Move the hand to the desired screen position and press the left mouse button to paste the block.

You can move the block as long as you continue to hold the left mouse button.

To make additional copies, release and then press the left mouse button again.



You can choose a line end to appear as:

squared off, an arrow, or rounded.

To draw a line with only one arrow, specify arrow and use the eraser to remove the unwanted arrowhead.



### 3.11 Geometric Figures

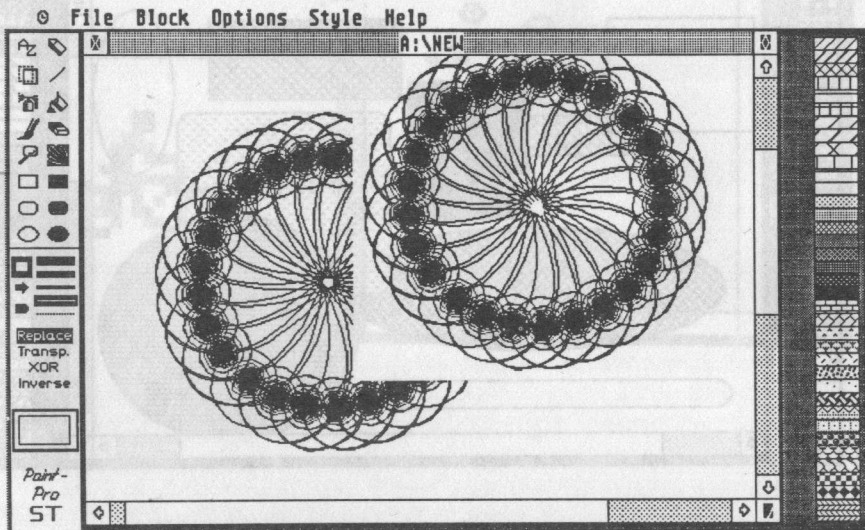


Choose one of these options to draw one of six ready-made geometric figures.

The figures are

- rectangle
- rounded-corner rectangle
- circle/ellipse

You can draw these figures either empty or filled (with the current fill pattern). To fill without a border, choose the smallest line thickness and draw a filled object (see Section 3.12 Line Thickness.)

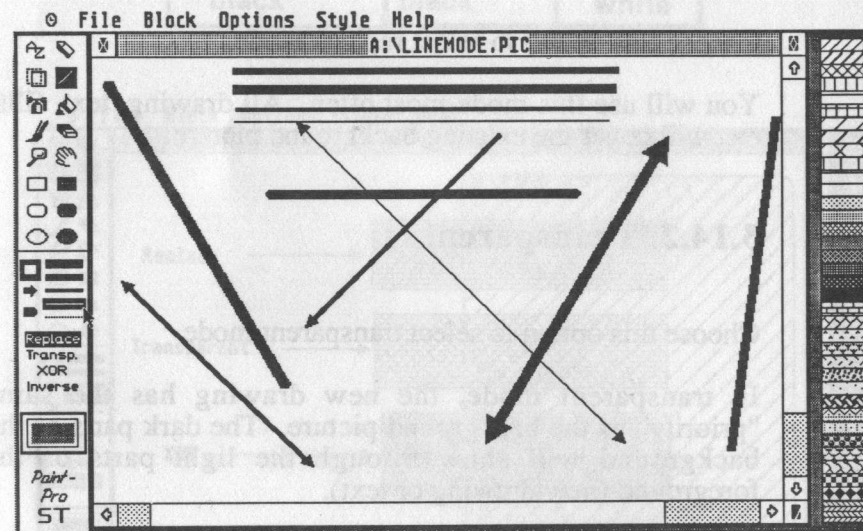


### 3.12 Line Thickness



Choose this menu option to change the thickness of the drawing lines.

Line thicknesses may be 7, 5, 3 or 1-point widths. Choose the thickness you want from those displayed in the toolkit menu. These widths are used by the LINE option, and in the different geometric figures. The selected thickness is highlighted.



### 3.13 Line Ends



Choose this option to change the appearance of the line ends.

You can choose a line end to appear as:

squared off, an arrow, or rounded.

To draw a line with only one arrow, specify arrow and use the eraser to remove the unwanted arrowhead.

Replace  
Transparent  
XOR  
Inverse

## 3.14 Drawing Modes

Choose one of these options to specify how the new drawing will interact with the picture on the screen. These four options are mutually exclusive - you can choose only one at a time.

### 3.14.1 Replace

Choose this option to select replace mode.

You will use this mode most often. All drawing, text, fills, etc. will cover the existing background picture.

### 3.14.2 Transparent

Choose this option to select transparent mode.

In transparent mode, the new drawing has the same "priority" as the background picture. The dark parts of the background will show through the light parts of the foreground (new drawing or text).

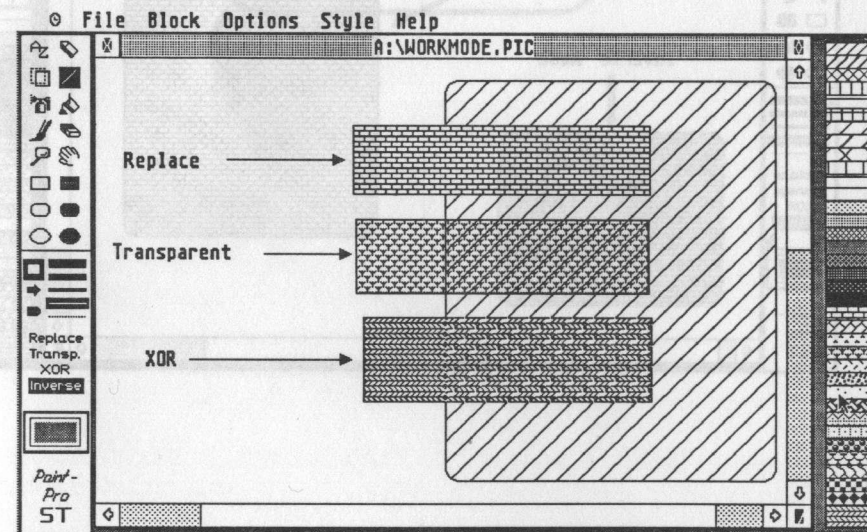
### 3.14.3 XOR

Choose this option to select XOR mode.

If you completely cover an object with a copy of itself in the XOR mode, both objects will disappear. You cannot draw a filled object in XOR mode. Draw an unfilled object, fill it, then move it using the block commands instead.

We can best illustrate this mode with a table showing the variations:

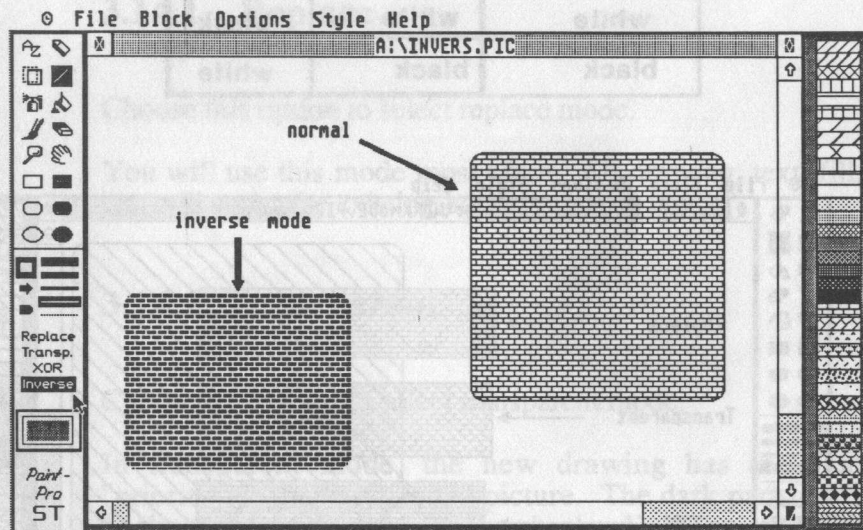
back-ground new object	white	black
white	white	black
black	black	white



### 3.14.4 Inverse

Choose this option to select inverse mode.

This mode reverses the color of each point, i.e., a white point becomes black, and vice versa.



### 3.15 Fill pattern

You can choose a different fill pattern from the FILL LIST on the right hand side of the screen. The selected fill pattern is then displayed in the lower left hand corner of the TOOLKIT menu.

## Appendix A

### Error Messages

Disaster!!  
Can't do it without resource files.

The file PAINTER.RSC cannot be found on the diskette. You need this file to run PaintPro.

No room...  
No memory free.

## Appendices

There's no more memory available to work. Plug in RAM disk or MSK. ACF\$DWRD. The error occurs when not enough memory is available to create a page or you've run out of space. A TAUL page, by opening a diskette window.

Diskette is full!

Insert a newly formatted diskette, and try again. Or delete some files you don't want from the diskette in the drive.

Write-protect.

Disk drive not on.

These are operating system errors, and will not respond to any use of the Repeat option.

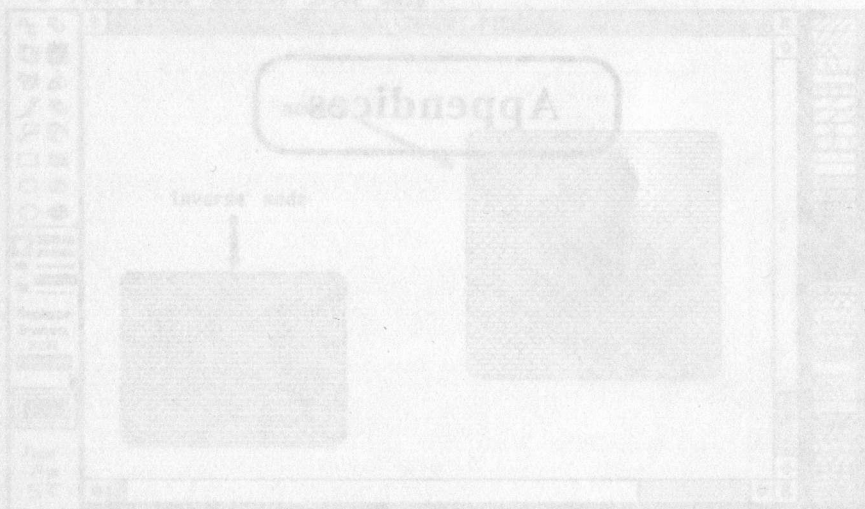
No printer output possible.

The printer driver is not set up for your printer; you will have to change it.

### 3.14.4 Inverse

Choose this option to select inverse mode.

This mode reverses the color of each point, i.e., a white point becomes black, and vice versa.



### 3.15 Fill pattern

You can choose a different fill pattern from the FILL LIST on the right hand side of the screen. The selected fill pattern is then displayed in the lower left hand corner of the TOOLKIT menu.

## Appendix A

### Error Messages

Catastrophe!!  
Can't do it without resource files...

The file PAINTER.RSC cannot be found on the diskette. You need this file to run PaintPro.

No room...  
No memory free...

There is no more memory available to the system. Dump the RAM disk or DESK ACCESSORIES. This error occurs when not enough memory is available to create a picture. If you tried opening a TALL page, try opening a SCREEN instead.

Diskette is full!

Insert a newly formatted diskette, and try again. Or delete some files you don't want from the diskette in the drive.

Write-protect  
Disk drive not on

These are operating system errors, and will not respond to any use of the Repeat option.

No printer output possible

The printer driver is not set up for your printer; you will have to change it.

## Appendix B

### Printer Setup

There are hundreds of printers that are available for use with the ST computer.

The following information explains how to customize PaintPro to work with most dot-matrix printers.

PaintPro is initially distributed to work with the Atari SMM 804 dot matrix printer. If you use this printer or a compatible, PaintPro can send hardcopy without any additional setup.

To make a hardcopy printout, PaintPro requires a *printer driver*. This printer driver contains the special codes which the printer uses to produce graphics. The name of the printer driver is PAINTPRO.PRN.

The distribution diskette also contains printer drivers for several other popular dot matrix printers. These are found by opening a folder on the distribution diskette called PRINTERS.

The names of the individual printer drivers are similar to the model names of these popular printers. At this time the following printer drivers are in the folder:

FX85.PRN	for EPSON FX80, FX85
IMAGE.PRN	Apple ImageWriter, C.Itoh
NL10.PRN	Star NL10
TAXAN.PRN	Taxan 810 ST
ATARI.PRN	Atari SMM 804

From time to time we may add additional printer drivers to the folder. You can find the complete list of printer drivers in the PRINTER folder.

To change PaintPro to send hardcopy to a different printer, do the following:

1. Insert the distribution diskette into drive A: and open it by double-clicking the icon.
2. Delete the file named PAINTPRO.PRN from the distribution diskette by moving the mouse pointer to its icon, pressing and holding the left mouse button, dragging the icon to the trashcan and releasing the mouse button. Then click the OK box to confirm the delete.
3. Open the folder PRINTERS by double-clicking its icon.
4. Move the mouse cursor to the desired printer driver (e.g. FX85.PRN), press and hold the left mouse button. Now move the "ghost" image of this icon to FLOPPY DISK A and release the mouse button (you may have to reposition the folder window in order to reveal the icon for FLOPPY DISK A). A copy of the printer driver is copied "outside" of the folder.
5. Close the folder window by clicking the close box or using the File menu option CLOSE WINDOW.
6. Select the copied printer driver by clicking its icon and then select the SHOW INFO option of the File menu. Rename the printer driver to PAINTPRO.PRN by using the backspace key to erase the current name, retyping the new name and clicking the OK box.
7. PaintPro is now ready to be used with the new printer driver.

## Appendix C

### Adding your own printer driver

You can define a printer driver for most dot matrix printers that use either 7 or 8 pins to create a character. A PaintPro printer driver requires five fields:

1. code to indicate orientation of printhead pins.
2. code for printer initialization.
3. code for graphics mode.
4. code for linefeed.
5. code for printer reset.

These fields are stored with the printer driver in ASCII format. The ASCII characters represent the hexadecimal values. Each pair of hexadecimal digits are separated by a comma. The fields are separated from one another by a carriage return. You can use any standard editor or word processor to build a PaintPro printer driver.

Within the printer driver, any line of text beginning with an asterisk (\*) is treated as a comment. This allows you to comment the fields of a printer driver for future reference. Do not use any tabs within the printer driver. In detail, the contents of each field are:

#### a) pin orientation code

- 0 = if uppermost pin is bit 7; Epson, others (640 bytes)
- 1 = if uppermost pin is bit 0; C. Itoh, others(640 bytes)
- 2 = if uppermost pin is bit 7; Epson, others (1280 bytes)
- 3 = if uppermost pin is bit 0; C.Itoh, others (1280 bytes)

#### b) initialization (max. 58 characters):

Starts the printing process (e.g., form feed, left margin, point status, line status, etc.).

#### c) graphic output (max. 38 characters):

Sent at the beginning of each line. This sequence contains exactly 640 bytes of graphic information (values, etc.).

#### d) Linefeed (max. 38 characters):

Sent at the end of each line, and should bring the printhead to the left border of the next line (8 points deep)(CR, LF).

#### e) Reset (max. 58 characters):

Sent at the end of the printing process (e.g., form feed, graphic off, etc.).

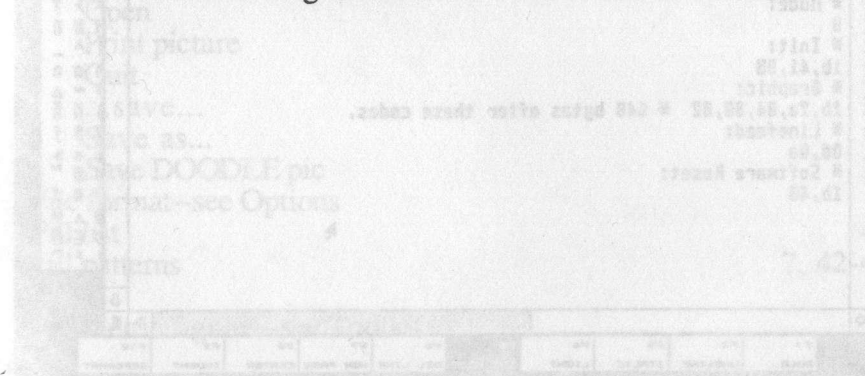
Once the appropriate hexadecimal control codes have been determined, do the following:

Copy PAINTPRO.PRN to another diskette (backup), and load your word processor (ST TextPro, ED, First Word, etc.). Input your codes in the lines which do not begin with "\*". Those lines starting with "\*" will be skipped. Save the new PAINTPRO.PRN file and copy it back to the master diskette.

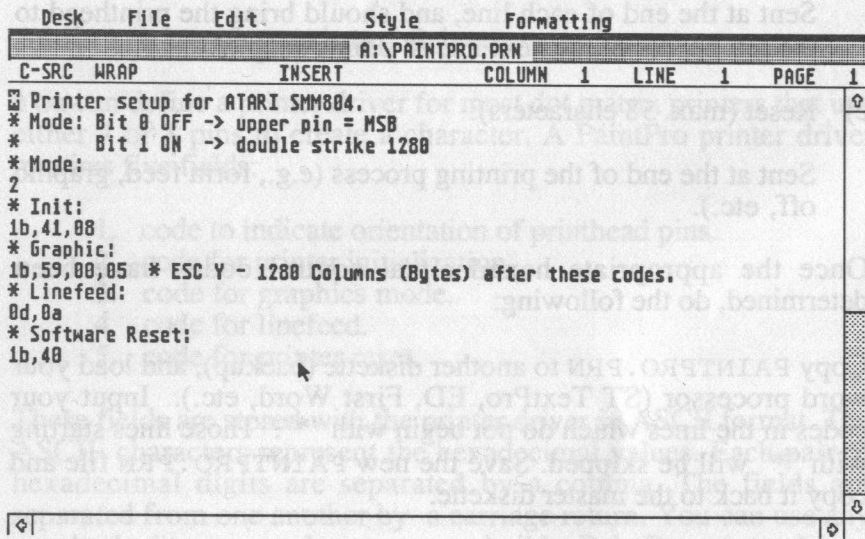
### NOTE:

Remember to not do any tabs in the lines (Program mode should be on in the editor used), and remember not to go past the maximum line length. The respective codes must be set into one line.

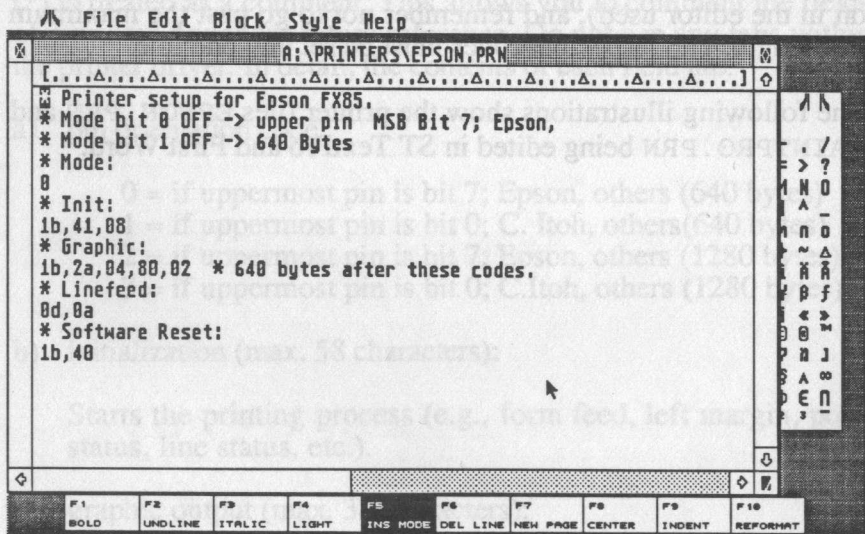
The following illustrations show the printer files EPSON.PRN and PAINTPRO.PRN being edited in ST TextPro and First Word.



TextPro and PAINTPRO.PRN:



First Word and EPSON.PRN:



## Index

Block	19-24
Copy	19
Cut	20
Horizontal mirroring	23
Load	21
Negative	22
Paste	20,21
Rotate	24
Save	21
Vertical mirroring	23
Bold text	31
Clock symbol	15
DEGAS <sup>TM</sup> --see Options (File format)	
Error messages	47
File	16-18
...abandon	16
...close	17
Delete	18
Load DOODLE pic	17
Open	16
Print picture	18
Quit	18
...save...	17
Save as...	17
Save DOODLE pic	17
File format--see Options	
Fill list	44
Fill patterns	7, 42-44
Geometric figures--see Toolkit	

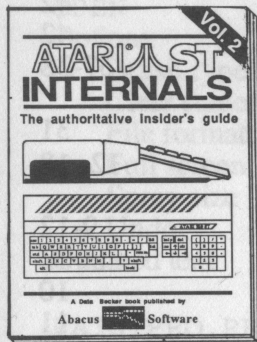
HAND	19
Help	32
Italics	31
Menu list	7, 15
NEW.PIC	4
OPEN	3, 4
Options	25-27
Brush types	26
Clear screen	27
File format	26
Full screen	25
Spray size	27
Undo	25
Outlined text	31
PAINTPRO.PRN	48-49
Printers	3, 48-51
README.TXT	3
SCREEN	6
Style	28-31
Direction	29
Font type	28
Size	30
Type styles	31
TALL	6
Toolkit	7, 35-44
Block functions	39
Brush	37
Eraser	37
Fill	36
Fill pattern	44
Geometric figures	40
Line	36
Line ends	41

Toolkit (continued)	
Line thickness	41
Mark block	35-36
Pencil	35
Spray	36
Text	35
Writing modes	42-44
Inverse	44
Replace	42
Transparent	42
XOR	42
Zoom	37-38
Underlined text	31
UPDATE	12, 18
Window	9-12
Closing	12
Cropping	10
Position	11
Size	9

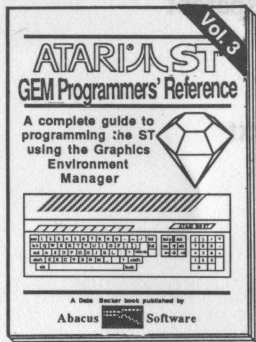


# ATARI<sup>®</sup> ST<sup>™</sup>

## REFERENCE LIBRARY



Essential guide to learning the inside information on the ATARI ST. Written for the user who wants thorough and complete descriptions of the inner workings of the ST. Detailed descriptions of the sound and graphics chips, the internal hardware, the Centronics and RS-232 ports, GEM, important system addresses and plenty more. Also included is a complete documented BIOS assembly listing. This indispensable reference is a required addition to your ATARI ST library. 450 pages. \$19.95



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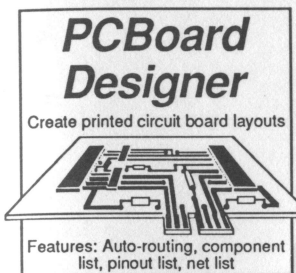
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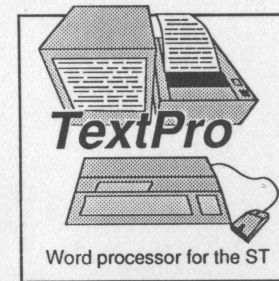
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**PCBoard Designer**  
Create printed circuit board layouts

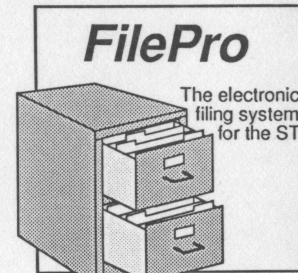
Features: Auto-routing, component list, pinout list, net list

**PCBoard Designer**  
Interactive, computer-aided design package that automates layout of printed circuit boards. **Auto-routing** with 45° or 90° traces; two-sided boards; pin-to-pin, pin-to-BUS or BUS-to-BUS. Rubberbanding of components during placement. Prints board layout, pinout, component list, net list. Output to Epson printer at 2:1. Pays for itself after first designed board. \$395.00



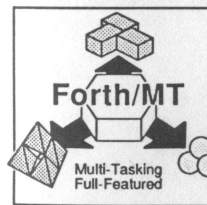
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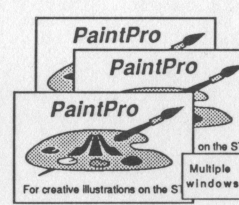
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The electronic filing system for the ST

**ST FilePro**  
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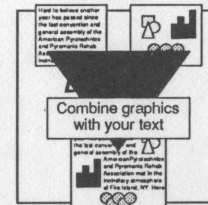


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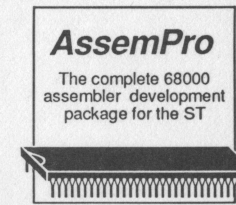


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