

XiPaint_E_AG

Thomas Dorn Beilschmidt

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Chapter 1

XiPaint_E_AG

1.1 Manual

Xi-Paint 4.0

Thomas Dorn
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August 1995
März 1996

ReadMe first

Manual 3.0
Changes 3.0 -> 3.2

Changes 3.2 -> 4.0

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1.3 Chapter 1

Chapter 1

Introduction

Xi-Paint is a 24 bit paint program for manipulating true color pictures in 16 million plus colors. It has been written to be hardware independent, meaning it can support special features of hardware display devices when available. These features are described in the appendix.

To give you a better understanding of 24 Bit graphics let's take a look at what is involved in the creation and manipulation of these images. A 24 bit picture with a resolution of 800 x 600 pixels is an extremely large file and we can see this by calculating its' size in bytes. To calculate the file size, multiply the horizontal resolution by the vertical resolution times the number of bits per pixel divided by 8 (the number of bits in a byte). Given this formula $H*V*24/8$ the above file would be 1,440,000 Bytes in size requiring almost 1.5 megabytes of storage. This would be true whether it is being stored on a Hard Drive or in memory.

When you wish to work with this file Xi-Paint loads the image from the hard drive into RAM where Xi-Paint is capable of manipulating the image directly at high speed. One thing you will need to remember is that the formula just described gives the file size in RAW format. This means that an IFF, DEEP, ILBM or even a JPeg file will all be smaller as they all do some form of compression. As you can see, for a file of 1.5 megabytes we will require at least that much memory be available after we run Xi-Paint, or we will not be able to load the image into Xi-Paint to work on it. What this means for our system requirements is that we will require memory for the Program to run (1 megabyte).

We will need memory for the image to be loaded by Xi-Paint (1.5 megabytes) and then we will also require memory to use specific features. To cut and use brushes you must also have at least 1

megabyte available. As you can see, when manipulating such large images the more Ram available - the faster and more productively you can work.

Now that you are familiar with the size of 24 bit images you can see that there are a few considerations to be made concerning storage. The image that we used for the example came to approximately 1.5 megabytes in size. This image must be stored on a computer medium other than RAM when your computer is not turned on.

Normally images of this size are stored on a hard disk connected to the system. When purchasing such a hard drive it is important to remember the sizes of the files you plan to use. A 40 mb hard drive would be insufficient for storing programs and the data you create with them. You will quickly run out of room on such a small hard drive. If you intend to do animation in 24 bit then you will require a very large storage device and should look at drives 500 megabytes and larger.

The last thing to understand is file compression. The image used for the example was in RAW format. Most file formats available for the Amiga include some form of compression, This compression enables you to store large amounts of information in smaller areas and to make more efficient use of your hard drive. It is important to realize that image compression will not help with the amount of RAM needed as the image is not compressed when it is being worked on in Xi-Paint.

A few of these formats are IFF, ILBM, DEEP, JPeg, and others. For you to have access to all these image formats you must have a conversion program such as ADPro from ASDG. While Xi-Paint incorporates the IFF and the JPeg file formats we suggest you start with the IFF format. This will compress your images approximately 30% while capable of tremendous compression ratios, is a lossy compression. This means that image quality may be sacrificed for compression. You should play with the JPeg format to determine its usefulness for your particular purpose.

Xi-Paint is fully compatible with all versions of AmigaDOS 2.0 or higher and will not run under AmigaOS 1.3 or previous versions of the AmigaOS. Xi-Paint is compatible with most IFF formats including 8 and 24 bit. Xi-Paint is also capable of rendering all AMIGA-DOS 2.0 and above compatible outline fonts. The ability to use all AmigaOS compatible fonts sets gives you access to high quality outline fonts from several third parties such as Soft Logic and Gold Disk. Many hours have been spent on the creation of this program and manual. While we have endeavored to create the most error free software package available - inevitably some things do get by. If you experience any problems/bugs or find errors in the manual we would appreciate your comments.

1.4 Chapter 2

Chapter 2

The Authors

If you have questions about Xi-Paint - please contact us. Write a letter to:

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1.5 Chapter 3

Chapter 3

Installation

It is very easy to install Xi-Paint. Open the window of the hard disk or the table of contents to which Xi-Paint should be copied. Now open the table of contents of the Xi-Paint disk. There you find the Xi-Paint drawer which you simply drag, while pressing the left mouse button, to the previous opened window. Now release the mouse button and all necessary files are copied. Make sure that your hard disk provides at least 1 MB of free disk space. Otherwise Xi-Paint will not be completely installed. If this occurs, you will get

a message. After successful installation you will find the Xi-Paint drawer in the selected directory. It contains all the necessary files you need for using Xi-Paint.

- 3.1 System Settings
- 3.2 Setting of the graphic adapter
- 3.3 Minimum Memory Amount
- 3.4 Menus

1.6 System Settings

3.1 System Settings

Before using Xi-Paint the parameters of your system configuration have to be set. In the Xi-Paint drawer you will find a program called Xi-Prefs which enables you to fix the important system settings. These settings have to be fixed by a particular program because it is necessary for Xi-Paint to know them before its first start. Otherwise it could be impossible to start Xi-Paint at all. Activate this "presetter" Xi-Prefs by double mouseclicking. A requester, which offers the setting possibilities (compare screenshot), will open. The most important setting is for your graphic adapter. Hope fully you're using the Retina, but Xi-Paint supports most other 24-Bit graphic adapters and contains, depending on the version you use, the respective number of drivers.

1.7 Setting of the graphic adapter

3.2 Setting of the graphic adapter

The available output drivers are shown in the "available graphic adapters" catalogue. Choose the one your computer uses with a double left button mouseclick. A new window appears which shows all possible resolutions. You can choose the one which you want Xi-Paint to use.

This setting can be changed whenever you want, so you can try different resolutions. To change the chosen resolution just click the "choose display" button. The window opens again and you can choose the desired resolution. Right beside the catalogue of available graphic adapters there is an info box, which tells you the current settings. Beside "card" you'll find the name of the chosen graphics adapter.

Below is the information about the chosen resolution and color

depth. The remaining info tells you the internal card display number which is not necessary for common use. Notice that Xi-Paint always shows, in the catalogue of available graphic adapters, all available drivers and not just the one you use.

Figure: XPrefs

1.8 Minimum Memory Amount

3.3 Minimum Memory Amount

This setting addresses the minimum necessary memory you need to start Xi-Paint. The appropriate adjustment can be entered into the box above the words "mimimum free memory". To be able to use Xi-Paint you should not enter a value below 1.000.000.

If your computer has less than 2 MB memory you should lower this value, otherwise Xi-Paint will not boot up because of a lack of memory. After adjusting all settings store them by "Saving". Xi-Paint will use them after each restart of the program. If you just want to try out the chosen settings, click the button "Use". - Paint will use these adjustments until the next retart. If you want to reject the current settings, click "Abort."

Figure: XiPaint Drawer

1.9 Menus

3.4 Menus

Using the menus gives you other options. In the "Preset" menu you can find "reset" (<right Amiga> <Z>), "back to last saved" (<right Amiga> <L>) and "Back to last used" (<rightAmiga> <S>). By clicking "reset" the Xi-Prefs adjustments are setback to fixed internal values which are shown during the very first start. "Back to last saved" loads the latest saved values and "Back to last used" deletes your most recent changes.

1.10 Chapter 4

Chapter 4

Basics for 24 Bit Drawing

4.1 Introduction

1.11 Introduction

4.1 Introduction

Xi-Paint facilitates nearly unlimited creative potential without worry about technical details. Nevertheless you need some basic information. The following several examples will show you the different features of Xi-Paint and will introduce the individual implementations. This will make it a useful "compact manual" in itself. The following chapter will give you some information about the internal processing of 24 Bit. If you are not interested in this subject you can leap over this chapter as well.

1.12 Chapter 5

Chapter 5

Basics

This chapter includes basic information for working with Xi-Paints window and menu desktop. The steps which are explained during the following pages won't be mentioned in later chapters. Therefore it is very important for the inexperienced Xi-Paint user to grok the following information.

- 5.1 The Xi-Paint Window
 - 5.1.1 The Windows Utilization
 - 5.1.2 Sizing Windows
 - 5.1.3 Window Width
 - 5.1.4 Scrolling
 - 5.1.5 Closing Windows
 - 5.2 Using the Menus
 - 5.2.1 Available Options are Activated
 - 5.3 Text Input Boxes
 - 5.4 The Scrollers
-

1.13 The Xi-Paint Window

5.1 The Xi-Paint Window

Xi-Paint uses windows and menus. A window might include paintings (worksheets) or requesters with several options (color settings, shades, etc.). All windows are placed on a background (desktop). It is not possible to work on the desktop itself. Any window can be activated by mouse click. The activated window is shown by a changed frame color. Even if the mouse pointer leaves the window, it will remain activated until you mouse click another window.

5.1.1 The Windows Utilization

5.1.2 Sizing Windows

5.1.3 Window Width

5.1.4 Scrolling

5.1.5 Closing Windows

1.14 The Windows Utilization

5.1.1 The Windows Utilization

The window frame includes some buttons which allow varied manipulations for arranging your desktop the way you'd like it. The following screenshot shows you such a window. Not every windows offers all the options. The headline of a new worksheet contains the text "project X". X refers to a number of your painting. If your worksheet has already been saved before, the headline shows you the entered name.

The headline of a requester shows you the requester's name which also tells you its function. The headline also allows you to move the currently activated window by clicking and holding the left mouse button pressed. While moving a window just its frame is shown. It will be completely redrawn in its new position. In the top right corner there are two buttons. The right one is for straightening up the windows. If you want to put a window into the background or foreground, use the depth button. To put a window into the foreground, the concerned window can also be doubleclicked.

1.15 Sizing Windows

5.1.2 Sizing Windows

To the left of the depth button there is one more symbol which enables you to change the window size. This button makes the window, while you do not need it, as small as possible. Another click on the same button resizes it again to its former size.

1.16 Window Width

5.1.3 Window Width

The symbol at the right bottom corner enables you to change the width of the window as you want.

1.17 Scrolling

5.1.4 Scrolling

At the right and bottom side of each worksheet are the scrollers to move to the different cuts of your project. Notice, especially while filling, that each action just takes place for the cut you can see at the moment. Even a brush, which ends outside your worksheet window will just be copied to the part you can see.

1.18 Closing Windows

5.1.5 Closing Windows

In the left top corner is the close button. If you click it the window will be closed. Project will be lost if you do not save them before. For this reason there will be a "security check" before the window is closed. You can reopen them whenever you want.

1.19 Using the Menus

5.2 Using the Menus

Xi-Paint also uses pull-down menus beside the previously explained window functions. By pressing the right mouse button you can make the header with its menus visible. You'll also find the shortcuts, i.e. right "A" + a certain letter or sign. Don't mix these shortcuts up with the drawing shortcuts which can be activated by pressing just the specific buttons. Menu shortcuts are only possible if the corresponding command is available for the opened window.

5.2.1 Available Options are Activated

1.20 Available Options are Activated

5.2.1 Available Options are Activated

The contents of the menu bars correspond with the activated window. You have access to the menu points you can use. In adapted bars you will always find the same shortcuts for the same functions. To get back to the basic menus you simply click on your desktop at any place. All windows will be deactivated and the basic menus will be available.

1.21 Text Input Boxes

5.3 Text Input Boxes

Xi-Paint is programmed to enable you to work with the mouse, but in some cases (project names for instance) it is necessary to do keyboard inputs. Xi-Paint allows you to change settings by mouse or the input of certain values. To do inputs in such a box you click any place on the box. It will change its color and present a cursor. For the text boxes the following shortcuts are available, which simplify the input of text:

Figure: Text Input Box

Key	Function
Backspace	deletes the sign right of the cursor
DEL	deletes the sign left of the cursor
SHIFT	jumps to the beginning of a text
SHIFT !	Jumps to the end of a text
<right Amiga> x	deletes the whole text
TAB	jumps to the next input box
SHIFT TAB	jumps to the previous input box
Enter	takes the text and finishes the input

If you press TAB in the last input box, the cursor will appear in the first input box.

1.22 The Scrollers

5.4 The Scrollers

In many cases you can use scrollers to set certain values or to choose clips. They can be moved by holding the left mouse button pressed. The Xi-Paint scrollers are size sensitive, which means that they always show the correct size relation between the control area and the size of the scroller bar. If you reduce a paint window which showed the whole painting before just a little bit, the scroller bar will fill a big part of the scroller and you can use a small part for moving. This feature always enables you to know the size of your project.

1.23 Chapter 6

Chapter 6

First Steps

In this chapter you'll learn the basics of how Xi-Paint paint functions. To ensure that you get the same results which are described in the following chapters - restart Xi-Paint, to reset the different options. Otherwise you may get different results than the se.

6.1 Opening a New Worksheet

6.1.1 Setting the Size

6.2 Important Drawing Functions

6.2.1 A House Made of Rectangles and Lines

6.2.2 Correcting a Mistake by UNDO

6.2.3 Precise Mouse Control by Keyboard

6.2.4 Saving the Project

1.24 Opening a New Worksheet

6.1 Opening a New Worksheet

This is the first step for a new painting. Xi-Paint gives every worksheet its own window in which the worksheet is shown. Choose from the menu "project" the option "new" or press the shortcut <right Amiga> <n>. If you have not restarted Xi-Paint and you can-

not find the project menu now or "new" is not available, activate another window or click directly on the desktop. After this the desired menu option will be there.

6.1.1 Setting the Size

1.25 Setting the Size

6.1.1 Setting the Size

After choosing "new" a small requester opens which asks you to set the size for your new project.

Figure: New-Requester

This value doesn't correspond with the chosen resolution. If the project is smaller than the chosen resolution a window in the appropriate size will be opened. If the project is bigger than the chosen resolution, a screen covering window with scrollers, which shows the left top of your project, will be opened. The maximum size depends on existing memory. If you recognize, while painting, that your chosen window is too small, just pick your project as a brush and put it in a new and bigger window. This is also possible if your window is too big, but not recommended, because you will lose some details.

The size of the graphic always depends on your intended use. For presentations, for example, you can use the typical screen resolutions (640x480, 800x600, etc.) for getting a full screen picture. For posters or covers it is useful to use the width and height relations of a different format. For DIN A4 this will be about 5:7 which means a size about 1000x1400 or 500x700. For the first steps a small graphic will be enough, so let's use 320x200. Click first on the input box, delete the values by <right Amiga> <x> and then insert 320. Do not fix this input by pressing Enter but simply use it by pressing Tab. This automatically activates the next input box, which deals with the desired height. Delete the given value <right Amiga> <x> again and insert 200. Now press Enter to enable both changes. To open the defined worksheet just click the OK button or press Enter. If choosing "new" was a mistake just click "cancel" and the event will be stopped.

1.26 Important Drawing Functions

6.2 Important Drawing Functions

After having chosen the size of the new worksheet a new paint window will open. First we want to use some simple drawing tools.

Try to copy this easy line graphic. As a new tool is explained in the following pages for the first time, the shortcut will be shown in brackets. Decide for yourself if you prefer working with the mouse or on the keyboard. Using the keyboard will require more time to learn, but it will allow you greater speed and more fluency. If you need more detailed information during certain steps, i.e. for a certain requester, please look in the appropriate chapters.

- 6.2.1 A House Made of Rectangles and Lines
- 6.2.2 Correcting a Mistake by UNDO
- 6.2.3 Precise Mouse Control by Keyboard
- 6.2.4 Saving the Project

1.27 A House Made of Rectangles and Lines

6.2.1 A House Made of Rectangles and Lines

Let's start with the house. First choose the rectangle tool (<r>). Now you can draw the rectangle needed for the outline. Place the mouse pointer to the position where the left top of the rectangle should be positioned, then press left mouse button. While pressing the mouse button you can pull the rectangle to the desired size.

Figure: House

A rubber band will show your mouse moving and also the size of the rectangle. Release the button at the desired size and the rectangle will be drawn. The color will depend upon the settings in the - Paint color requester. These color settings will be explained later in this chapter. Now we can draw the windows and the door of our house. This should be done in the same way we did the outline.

1.28 Correcting a Mistake by UNDO

6.2.2 Correcting a Mistake by UNDO

If a mistake happens you can correct it by clicking the Undo button (<u>). By pressing it once, the last step will be undone, by pressing it twice also the last but one step will be undone and so on. The number of possible undones just depends to the available memory. If pressing undo is a mistake itself you can "undo" the undone by clicking Redo button (<U>). Just try these functions by yourself by removing and "re-removing" the windows of our line house. But there also has to be a roof for our house. For drawing it we need the line tool (<v>). But to position the mouse pointer exact to the

right position is notvery easy.

1.29 Precise Mouse Control by Keyboard

6.2.3 Precise Mouse Control by Keyboard

The mouse pointer can be controled by keyboard. First move the pointer by mouse as near as possible to the position where you want to draw. Keep both amiga keys pressed and use the cursor keys to move to the exact position you want the pointer. This will happen in one point steps. After having positioned the pointer, keep the left mouse button pressed (otherwise the exact position will be lost again) and then stretch the line.

You can also simulate the left button press by keyboard (<left Amiga>and <ALT>). Keep both buttons pressed and use the cursor keys to stretch the line. By releasing ALT the line will be fixed. The chimney can be made in the same way. The smoke and the cloud on the side can be made by freehand tool. (<d>) as well as the horizon in the background. The sun is a simple circle (<c>).

1.30 Saving the Project

6.2.4 Saving the Project

Now we have produced our first work of art. Before we continue, we need to save it. Make certain that this window is activated (the frame has a different color than the deactivated windows). Now choose from project menu "picture save as : : : " (<right Amiga> <a>). A requester will open and you can type the path and name for your picture. Xi-Paint uses the IFF DEEP format, but you also can use different formats which can be chosen in the file requester (menu bar).

1.31 Chapter 7

Chapter 7

To Work with Colors

Our painted house is beautiful but a little bit colorless. That's why we want to color it. Call up the command "colors" (<right Amiga> <C>) from the "menus" menu. The colorbox will open.

7.1 The Colorbox

- 7.1.1 The Perfect Colorhues for our Painting
- 7.2 Filling a Painting
- 7.3 Saving the Palette

1.32 The Colorbox

- 7.1 The Colorbox

The colorbox allows you to choose and to mix colors. The top half contains the scrollers for setting the color values, the bottom has the 256 Colorboxes into which colors can be assigned. Some colors are already assigned. By selecting, it will be used as actual painting color.

Figure: Colorbox

Try it by drawing an element onto our beautiful house. By using the three scrollers (standing for red, green blue) the activated color can be changed. All unused colorboxes will assigned by Xi-Paint the value for black. Click one of these empty boxes, mix an individual color, and use it in your painting. To use the chosen color you first have to press "assign". Otherwisethe "old" color will be used even if in the colorbox the new one is shown. For further help look in the information part of this manual.

- 7.1.1 The Perfect Colorhues for our Painting

1.33 The Perfect Colorhues for our Painting

- 7.1.1 The Perfect Colorhues for our Painting

First we need blue for our sky. Click one of the free colorboxes. Put the scrollers for red and green to the very left (the textbox shows "0") and the one for blue to the very right (the textbox shows "255"). Green for the grass and red for the roof you can produce in the same manner. Yellow for the sun can be produced by puting red and green to the far right, and blue to the far left. The other colors can be produced in the same way. Dont forget to use a new box for every new color, otherwise you'll loose your old color.

Hue	red	green	blue
blue	0	0	255
green	0	255	0

	yellow		255		255		0	
	red		150		0		0	
	grey		150		150		150	
	purple		180		87		255	
	brown		162		85		0	
	white		255		255		255	
	black		0		0		0	
	darkgrey		80		80		80	

1.34 Filling a Painting

7.2 Filling a Painting

Now choose blue for your sky and activate your paint window. Then switch on the filling tool (<f>). A mouse click on the sky will color it quickly with blue. If the filling isn't correct, check the drawing mode. In the menu "drawing mode" there should be the setting "solid" (<left Amiga> <l>).

Figure: House colored

If the color runs out, check your object for leaks. To close small "leaks", you can use the freehand tool. and, for very exact pixel setting, use the magnifying glass (tool button or <m>). The magnifying glass will appear as a rectangle around the mouse pointer, with which you can choose the area which has to be magnified. The magnify window will show you the desired area. Now fill your house with the different colors. After you finish your piece of art, save your picture. Save it again with "save as..." under a new name, because we will need the "old" picture in the next chapter.

1.35 Saving the Palette

7.3 Saving the Palette

Maybe we will need the palette which we needed for our house at a later time. Well, we can save it. Activate the colorbox. Now click the right mouse button. A different menu will appear, which shows the possibilities you will need for editing a palette, for example "save as..." (<right Amiga><a>). As you can see, we tried to give similar actions the same name and shortcut. Now you can save your palette in the same manner you did with your painting. You now know about the basic functions of Xi-Paint and have learned about the most important tools of this program. Before reading the next chapter, play with what you've learned. Beginning with the next Chapter we will deal with Xi-Paint's advanced functions.

1.36 Chapter 8

Chapter 8

Creating and Managing Brushes

This chapter deals with one of the most important functions of - Paint. First we want to learn something about the basic concept you'll need for working with Xi-Paint. Later we will learn about more advanced possibilities.

8.1 Cut Out a Brush

8.1.1 Individual Objects as Basics

8.1.2 Cutting Out the Brush

8.2 Masking a Brush

1.37 Cut Out a Brush

8.1 Cut Out a Brush

For our house we will need a fence, a real slatted fence with peaks, which should look like the following example: Because we don't want to draw each slat for itself, we are going to use one of the special skills of Xi-Paint, the paste function, which allows you to draw one object and insert it where and when you want.

8.1.1 Individual Objects as Basics

8.1.2 Cutting Out the Brush

1.38 Individual Objects as Basics

8.1.1 Individual Objects as Basics

Xi-Paint can work with several windows. First load our line painting. For designing the slat we will open a new window with the size 100x100. If you do not want to use the chosen color, open the colorbox and choose another color. The slat itself is easily designed with three rectangles and two lines. The top margin of the peg has to be removed afterwards by covering it with the chosen background color.

Figure: Parts of fence

1.39 Cutting Out the Brush

8.1.2 Cutting Out the Brush

After finishing the object, it can be copied. Choose the tool for cutting out a rectangular brush () and choose the desired part for cutting out by placing the frame around it. The brush will stick on your mousepointer and can be placed in this window and also in any other Xi-Paint window as often as you want. So you can exchange and interchange objects between different windows.

1.40 Masking a Brush

8.2 Masking a Brush

When you place your brush you'll recognize that the brushes' background is not transparent. We know for which color the brush should be transparent (the currently chosen background color, with which you have cleared your worksheet), but Xi-Paint doesn't. So you have to choose which color of the brush should be transparent. Select the colorbox and activate the box which contains the background color. After that you just have to press < / > and all the parts of the brush which contain the chosen colors will be transparent. Then you can place your slats in front of your house whenever you want. If you want to use black as your background color, just press < [>, which will create a maximum mask and will create the desired result. Now create the slat fence, to get the following painting:

Figure: Picture of fence

If you just need some parts of your slats, cut out that particular part and position it in your "house"window. This slat fence can also be colored. Use the same color you used for the doors. Call the previously saved palette with "load" in the "palette"menu (<right Amiga> <l>) and choose the right palette name from the requester. Now you can color your painting with your previously saved colors.

Figure: Picture of fence (filled)

1.41 Chapter 9

Working with Brushes

This chapter will deal with advanced brush possibilities. The new managing system will be the main topic.

- 9.1 A Tube System of Tasks
 - 9.1.1 Shades in the Color Requester
 - 9.1.2 Making Your Work Easier by Brush Manipulation
- 9.2 The Grid as Position Help
 - 9.2.1 The Brush Manager
- 9.3 Multiple Brushes
 - 9.3.1 How the Brush Manager Works
 - 9.3.2 Composing the Tube System Puzzle

1.42 A Tube System of Tasks

- 9.1 A Tube System of Tasks

For this option, we want to work out a project which seems to be very complicated but is very easy to execute with Xi-Paint. Just look at the following picture:

Figure: Tubes (completed)

It's a tube system which covers the whole screen. You can use the same duplicating system you learned about when we produced our fence. Now it's even easier. The whole system is made from three parts which can be put together in the desired positions. The three elements look like:

Figure: Tubes (Parts)

The 3D-effect is easy to produce, you just have to create 6 colors, each one being darker than the one before. The color requester allows you to generate them by its function "Shade". Shade generates a very smooth transition between two colorhues.

- 9.1.1 Shades in the Color Requester
 - 9.1.2 Making Your Work Easier by Brush Manipulation
-

1.43 Shades in the Color Requester

9.1.1 Shades in the Color Requester

For our tubes just create one colorbox with white (255, 255,255). Now count up to the sixth box and set it to blue (0, 0,255). Now click the white box, the button "Shade" and then the blue box. Automatically the colors in between will be created. Remember to press assign. Otherwise the new colors won't be accepted. After creating the colors, paint your three elements. Take care that each part is sized 20x20 points. For better positioning, especially for the arrows, it is recommended to use the magnifier. Please save the three elements. The crossing can be used for every direction. But the arrow can only be used in one direction and the line allows you just a horizontal use.

1.44 Making Your Work Easier by Brush Manipulation

9.1.2 Making Your Work Easier by Brush Manipulation

The parts we need can be created by Xi-Paint's brush manipulation. First cut out the line as a rectangular brush then press <z>. This rotates the brush abouts 90° . Now we've got the element for the vertical line. Take care that each brush is exactly 20x20 and the element is situated in the middle of the brush. That's not very easy, but by using the magnifier it should not be a problem. If you aren't careful, you will not be able to use the positioning help we are going to use.

Now we need the four arrows, for allowing curves to bend in all directions. There are two different ways to get this result. First you can use the <z> key for rotating the brush four times about 90. And second you can use two other tools Xi-Paint offers you, which are the reflections. After taking the brush, press<y>. It reflects the brush by its vertical axis and you can insert the result to your painting. Now rotate the brush about 90o again and you will get the third arrow to use. At least you just need to press <x> which reflects the brush this time to its vertical axis. Then insert this part on the worksheet. After finishing the worksheet, save your object collection.

1.45 The Grid as Position Help

9.2 The Grid as Position Help

Now we want to compose our tube system. First open a new window. It would be very exhausting to position the small parts in an exact way. Therefore we want to use a position grid. Click the grid button in the toolbox or press <right Amiga><G>.The grid

requester will appear.

Figure: Grid-Requester

Now you can set the grid size. The beginnings and endings of your objects just can be positions at the crossings of this invisible grid. For our tube elements set the height and width of our grid to 20 points. Don't forget to set the switch in the left bottom corner to "on". Otherwise there will be no grid. You can quit this requester by "close". If you decide to switch off the grid, don't close the requester. So you simply have to switch the on/off switcher.

9.2.1 The Brush Manager

1.46 The Brush Manager

9.2.1 The Brush Manager

To produce the tube system in a such an easy way, make sure that the brush is exactly sized, in this case, to 20x20. You need not cut out the brush each time you need it, just use Xi-Paint's fantastic feature, the brush manager.

Figure: Brush-Requester

1.47 Multiple Brushes

9.3 Multiple Brushes

Xi-Paint enables you to manage up to 128 brushes, depending upon what number you set in the "settings" requester. The program stores them and offers them after starting Xi-Paint. Call from "menus" menu the command "brush..." (<right Amiga>). A new requester will open. Use the scroller for finding the area where your tube parts are situated. Xi-Paint saves each brush you take in this "list". Therefore you will also see some older brushes, for example from our fence.

9.3.1 How the Brush Manager Works

9.3.2 Composing the Tube System Puzzle

1.48 How the Brush Manager Works

9.3.1 How the Brush Manager Works

If the list is complete, Xi-Paint starts to overwrite the old brushes, beginning with the oldest one. So you might find the tubes somewhere in the middle of the list. If you click the free part of the scroller the list will move further for one page.

1.49 Composing the Tube System Puzzle

9.3.2 Composing the Tube System Puzzle

To choose a brush to use, just click on it. It will stick on the pointer and can be placed in each window. As you recall, we took care that the brushes are sized 20x20, so they will exactly fit in our grid. Do not be puzzled by the representation of a certain brush in the brush window. Xi-Paint tries to show the brush format filling. The tube system is just an easy example for using the brush manager. For everyday work you will need this feature again and again.

1.50 Chapter 10

Chapter 10

Cycle and Shade in Practice

Cycling and shading are extremely important. Xi-Paint takes full advantage of the power inherent in these two options.

10.1 Cycled Colors

10.1.1 The Working Method of Cycle

10.1.2 The Cycle in Practice

10.1.3 Offset Setting for Exact Cycle Adjustment

10.2 Cycling in Practice

10.2.1 A Frame

10.2.2 Color Bars

10.2.3 Vertical and Diagonal Stripes

10.2.4 Shades

10.2.5 Choice of Shades

10.2.6 5 Point Shades for Special Effects

1.51 Cycled Colors

10.1 Cycled Colors

This functions offer a lot of special effects, which may be difficult to comprehend. So do not give up if you find this chapter a little bit difficult. With just a bit of practice and experimentation you'll become extremely fond of this paint mode. The basic function is easy to explain. Activate "Cycle" (<right Amiga> >4) and - Paint will use the next color from the defined cycle requester for each new object. The object can be a brush or some object. This means that for example for a rectangle, which was produced by a 1 point standard brush, each point will get the next color.

10.1.1 The Working Method of Cycle

10.1.2 The Cycle in Practice

10.1.3 Offset Setting for Exact Cycle Adjustment

1.52 The Working Method of Cycle

10.1.1 The Working Method of Cycle

Call the Color requester (<right Amiga> <C>). That's important because cycling uses the colors you have defined before. Take red (255, 0, 0) for the first box, for the second blue (0,0, 255) and for the third one choose red again. Do not forget to click "assign" and then close the color requester. If your memory requires more than 2 MB the requester can remain open as well. Now call the cycle requester (<right Amiga> <Y>). For number of steps insert "50". The shade should start with red, go to blue and then back to red. Therefore you have to fill in "from" "0" and at "to" "2". The cycle will also go from the first to the third colorbox (Xi-Paint starts at zero).

Figure: Cycle-Requester

To check the effect of the newly created cycle and to make the program accept the new cycle, click "generate". The cycle will also be created internally and shown in the preview bar.

1.53 The Cycle in Practice

10.1.2 The Cycle in Practice

Open a new worksheet for trying out your new cycle. Set the paint mode to "cycle" (<right Amiga> <4>) and choose an unfilled rectangle. Paint it as big as possible. Starting in the left top corner Xi-Paint changes its color for each point. The line starts with red, becomes blue and then red again. At the end of a cycle, the color starts from the beginning again. In our case you can't recognize that, because our first and last color is the same. Just the left top corner shows a color crack because Xi-Paint starts there with painting. By freehand drawing you can watch the cycling while drawing. Follow the line until it becomes blue.

1.54 Offset Setting for Exact Cycle Adjustment

10.1.3 Offset Setting for Exact Cycle Adjustment

If you continue drawing in another place, you'll recognize that the cycle now starts in blue. Draw again until you see blue again. Now set "offset" in the cycle requester to "0" and click "default " button. If you continue drawing Xi-Paint will not start with the previous blue color, but it will start with red again. Offset selects in which color of the cycle the next step should be done. Xi-Paint itself uses the value for the color with which you finished before.

Cycle can be used for any existing pencil and brush. Brushes have to be used in "outline" mode. This means their outline but not their color will be used. For cycling you can use any number of colors you want. While using more colors, it may happen that you have to extend the value from "steps". As a rule of thumb take 15 to 20 steps for each selected color. If there are mistakes, try some different values (+/- 10). DO NOT FORGET TO "GENERATE" !!!! Otherwise some mistakes will occur. Do not use too many steps while using too few colors. Otherwise the cycle might not seem to work.

1.55 Cycling in Practice

10.2 Cycling in Practice

There are many situations in which you want to frame a certain object or use the frame as a piece of art itself.

10.2.1 A Frame

10.2.2 Color Bars

10.2.3 Vertical and Diagonal Stripes

10.2.4 Shades

10.2.5 Choice of Shades

10.2.6 5 Point Shades for Special Effects

1.56 A Frame

10.2.1 A Frame

Choose from the pencil requester (<right Amiga> <P>) a bigger pencil (minimum 2x2). Let's say we want our frame to start at red, become blue, green, again blue and then red (to close the cycle) again. So we define in the color requester the box "0" and the box "4" to red (255, 0, 0), "1" and "3" blue (0, 0, 255) and the "2" green (0, 255, 0). After doing that call the cycle requester. For "steps" choose "50" and for "from" and "to" set "0" and "4". Set "offset" to "0".

Then click "generate". The preview bar will show you the cycle. There are certain requirements for a steady frame. Notice that, for a steady frame, the frames length has to be a multiple of the steps. So each corner will show the end of the cycle. To get this result we use Xi-Paint's grid. Call the grid requester (<right Amiga> <G>) and insert 50 for both width and height. Then set the switcher to "on". Before painting with cycle, set the painting mode to "cycle". As you now paint an unfilled rectangle, you are just able to paint frames with a size multiple from 50. If the color in the corners of your rectangle is not the first one in your cycle, set "offset" in the cycle requester to "zero" and press "default".

1.57 Color Bars

10.2.2 Color Bars

Sometimes you'll need an effective background. While using "cycle," Xi-Paint can produce color bars. This is not easy to describe so try it for yourself. Use the same settings you fixed for the frame. Even "steps" will remain the same. But switch off the grid and paint a filled rectangle. Depending on its size it will be filled with more or less arranged patterns. For getting a "more arranged" pattern activate the grid and set width to "50" and height to "1". For obtaining vertical Bars set "offset" to "0" and press "default". Draw a filled rectangle and you'll be surprised. If you change "offset" (DO NOTFORGET TO RESET TO DEFAULT) and paint another filled rectangle, you'll get diagonal bars which might be much more

beautiful than vertical bars.

Figure: Cycled rectangle

1.58 Vertical and Diagonal Stripes

10.2.3 Vertical and Diagonal Stripes

How has this effect been done? Xi-Paint starts a filled rectangle from the top left corner and continues linewise from the top to the bottom. Let's stay with a 50 step cycle with an offset of 0. If we now draw a rectangle that's 50 pixels wide, Xi-Paint will start to draw the first line and then run through the complete cycle.

At the end of the first line the last color of the cycle is reached. The next line will now begin with the first color again, and therefore the pixel colors of each row will be the same. You have the impression of looking at many color bars. If you change the offsets, you'll get similar results, but the cycles will now have offsets.

You'll then get the impression of diagonal stripes. You can now understand that an ellipse can never be used with this effect. That's because the width of one line varies so the cycles aren't underneath each other. The same is true for polygons but this cycle opens many new options. Even though there are no visible color bars, you can generate using nice effects using circles and polygons.

You should try to practice this function. It will give you increased skills with these variations.

1.59 Shades

10.2.4 Shades

Xi-Paint supports the common basic shades because special effects need a very long generating time in 24 Bit. Later it will also support outline and highlight filling.

1.60 Choice of Shades

10.2.5 Choice of Shades

You need not limit your ideas. Xi-Paint offers, along with the two point shade, 3-, 4-, and 5-point shades. The colors can be defined as you want. The simplest shade is the one between two colors, which is possible to get in vertical and horizontal hue. The first color will be used for the top or left, the second for the bottom or

right edge. That's also valid for all other shades, each colorbox will be used from left to right and from top to bottom.

1.61 5 Point Shades for Special Effects

10.2.6 5 Point Shades for Special Effects

The fifth color will be used for a freely placed point, not only for the center as common. To place this point Xi-Paint offers you two scrollers in the shade requester for x and y direction. This value will be fixed as a percentage because every shade can take a different expansion. A setting above 1 wouldn't work. x=0 means that the fifth point is situated in the left top corner, which makes no sense because it will be covered by the first color point. Make sure that the fifth point is minimally distanced 25% from the bottom margin, a quarter away from the left margin. To "preview" the new shade click "preview". Xi-Paint shows the new shade immediately after you create it, so you need not press something like "generate". After defining a certain shade, choose the "shade" painting mode (<right Amiga> <3>). Lines and freehand drawing will be shown as shades like filled areas. Play with the possibilities.

Figure: Shade Requester

1.62 Chapter 11

Chapter 11

Special Effects with Brushes

The flexible handling of the Xi-Paint brushes offers you a lot of very new possibilities. For basic knowledge, read the following pages.

11.1 The Proof of the Pudding

11.1.1 A Multicolored Rectangle for Our Experiments

11.1.2 Finishing Touches

11.2 The Related Theory

11.2.1 Understanding Area Filling

11.3 Some Tips

11.3.1 Getting Experience

11.4 New Shapes Using Brushes

- 11.4.1 A Rectangle with Rounded Corners
- 11.4.2 A Frame Instead of the Filled Rectangle
- 11.4.3 A Rectangle with Sloped Edges
- 11.5 Escaping a Running Routine

1.63 The Proof of the Pudding

- 11.1 The Proof of the Pudding

We use the filling possibilities of Xi-Paint together with the possibilities of the brushes. Set in the shade requester (<right Amiga> <U>) a "3 colors, 2 bottom" - shade. Now call the color requester (<right Amiga> <C>) and set the first three color boxes to very red, very blue, and very green. After pressing "preview" you'll see a shade which is red on the bottom margin and has bottom corners colored blue (left) and green (right). If you can't see your new shade, press "assign" in the color requester. After that press "preview" again. Then open a new worksheet. Set the paint mode to "shade" (<rightAmiga> <3>) and activate the painting tool for filled rectangles. Activate the one point brush (< . >).

- 11.1.1 A Multicolored Rectangle for Our Experiments
- 11.1.2 Finishing Touches

1.64 A Multicolored Rectangle for Our Experiments

- 11.1.1 A Multicolored Rectangle for Our Experiments

We need a rectangle about 10 to 15 points length. But its sides need not have the same size. For painting this small of a rectangle use the magnifier. If the rectangle does not appear with the chosen shade, check if you've set the paint mode to "shade". The correct rectangle could be cut out by the brush tool (). Take care not to cut out the background around your rectangle. Turn off the magnifier. The small rectangle, filled with shade, sticks on your pointer. Now activate the tool for filled freehand lines (<W>) and activate the paint mode "as it is" (<right Amiga> <8>). Now paint an outline, similar to the one shown below:

Figure: Outline

After releasing the mouse button, Xi-Paint starts to work. Depen-

ding on size and resolution, Xi-Paint will need up to a few minutes. This fill also depends on the capacity of your computer. After finishing you'll like the result. It will be much more interesting than the picture in the manual shows. You'll see a filled object, green on the right and, if visible, blue on its left. This causes a pseudo 3D effect, which is used very often, especially by broadcasting stations. Try the different effects by yourself.

Figure: Filled Outline

1.65 Finishing Touches

11.1.2 Finishing Touches

Set the shade requester to "2colors, vertical" and activate the filling tool (<f>). Do not forget to use the one point brush (<. >) and to set the paint mode to "shade". Now fill the red area to get a much more beautiful effect. Sometimes a five point shade can also be beautiful, just try it.

1.66 The Related Theory

11.2 The Related Theory

The above described effects look quite nice. But to really know how to use it, it's necessary to learn some of the theory. As already mentioned Xi-Paint doesn't always use the one point pen to fill areas. It can also use the currently selected brush. This isn't used like one piece of a mosaic, but rather each single point of the area to be filled will be drawn separately. This means that for each point of the related area, the entire brush will have to be displayed. This explains the relatively long calculating time required, even for filling a small area. Xi-Paint always starts with the top left and fills towards the bottom right.

Using this method you can create a pseudo 3-D effect. This is because the right and left border will always display the rest of the brush. If you understand the methodology involved, you'll be able to understand this aspect of Xi-Paint.

Set every setting once again in the same manner as before in the freehand area settings. This time select a filled ellipse (<E>). If you draw an ellipse this time you'll notice there is no 3-D effect, but the lower half is filled with blue and the upper half is filled with red.

11.2.1 Understanding Area Filling

1.67 Understanding Area Filling

11.2.1 Understanding Area Filling

This continues where the previous chapter left off. You can easily recognize how Xi-Paint generates a filled ellipse. The upper half will be filled from the top left to the bottom right. The lower half will be filled from the bottom left to the upper right. We encourage you to test the other drawing tools. You'll notice right away that the results depend on the manner that Xi-Paint uses to generate specific objects. An unfilled ellipse (<e>) will be put together using 4 parts. Both of the upper sections will be drawn from the top to the bottom, and the lower will be drawn from the bottom to the top.

1.68 Some Tips

11.3 Some Tips

To get used to the brush results choose the freehand tool (<d>). By drawing some outlines, you'll recognize the different possibilities, depending upon if you start your line on the bottom or on the top. The 3D effect will be disturbed by changing the direction. It's even more visible if you use the line tool. Draw the following four lines (use the shaded rectangle as brush and the paint mode "solid"):

Figure: Lines

A physically impossible figure will appear.

11.3.1 Getting Experience

1.69 Getting Experience

11.3.1 Getting Experience

The result will be different which each setting and with different drawing directions. Most of the time the 3D setting will be lost. Using the brush effects will need some planning and experience.

1.70 New Shapes Using Brushes

11.4 New Shapes Using Brushes

Xi-Paint offers rectangles with angular corners. Normally that will be enough, but in certain cases you'd like to get a rectangle with rounded corners. Let's deal with how to do that. Let's create a filled, unicolor rectangle with rounded corners.

Figure: Rectangle with round corners

11.4.1 A Rectangle with Rounded Corners

11.4.2 A Frame Instead of the Filled Rectangle

11.4.3 A Rectangle with Sloped Edges

1.71 A Rectangle with Rounded Corners

11.4.1 A Rectangle with Rounded Corners

Set the color requester the color you want your rectangle to appear. Then set the paint mode to "solid" and activate the one point brush. For a painting tool choose the filled ellipse. Now draw a circle or an ellipse. Each quarter of it will be one angle of our rectangle. Make sure that your ellipse does not become too big. The diameter should be around 20 to 30 points. Later on you'll understand why. After drawing the ellipse cut the whole ellipse, not just parts of it, out. It is unavoidable not to cut out the ellipse together with some parts of the background. That's the reason to mask it.

To do so, just click, as you did with the fence, the background color in the color requester. After that the background parts can be made invisible by pressing < / >. This brush we be used to construct the rectangle with rounded corners. Select the filled rectangle tool and draw a rectangle. Dependent upon the size of the rectangle and the speed of your computer this may last up to a few minutes.

1.72 A Frame Instead of the Filled Rectangle

11.4.2 A Frame Instead of the Filled Rectangle

Let's not use the unfilled rectangle tool as the frame will be as thick as the ellipse is - an undesirable result. Before painting the frame, call the grid requester (<rightAmiga> <G>). There you can set the desired thickness of the frame. Set X and Y to the desired values. You can even set the horizontal and vertical lines to different thickness. Let's choose "3". Activate the grid by pressing "on". Do you have the ellipse brush from the prior selection? No? Then deactivate the grid again and "regenerate" it by using the brush manager.

Now activate the filled rectangle tool and draw a rectangle in the desired size. A filled rectangle with rounded corners will appear. Now call the color requester and set one of the color box to the background color. Activate it as current color and choose the paint mode "solid" (<right Amiga > <1>). For a painting tool reuse the filled rectangle. Position the pointer in the left top corner, where you've started with the previous rectangle. Before drawing the new rectangle, move the mouse pointer exactly one grid position to the right and one position down. This will be easier using the keyboard by pressing <left Amiga> and using the cursor keys.

After having reached the desired position press the <left ALT>. This simulates a press of the left mouse button. Keep both keys pressed and drag the rubber band using the cursor keys for the desired size. After releasing all the keys, Xi-Paint paints this second rectangle. The result will be a frame with the desired width. If you do not like the result, use "Undo" (<u>) and try it again.

Figure: Frame with round corners

1.73 A Rectangle with Sloped Edges

11.4.3 A Rectangle with Sloped Edges

Use a rhomboid brush instead of the ellipse shaped one. This rhomboid shape is easy to get in the grid requester. Set the grid width to 10 points. Paint again with the one point brush and now use the polygon tool (<W>). Paint a rhomboid as it is shown above. The corners should be distanced one grid position from each other. After doing that, deactivate the grid and cut out the rhomboid as brush. Mask again the background color as you did it before. The result will be a rectangle with sloped corners. If you use this brush together with very small ellipses, the result will be a strange look alike. These suggestions are just some ideas for your experimentation. Play with the shades.

Figure: Rhomboeder

1.74 Escaping a Running Routine

11.5 Escaping a Running Routine

If you suspect Xi-Paint may need too long for an operation or if it's crashed, simply press <ESC>. A small requester which shows the work in progress will open and will ask you if the you want to cancel the currently running operation. If you have called the requester to get some information, just press "No". Pressing "Yes" will cancel the current project. To undo the changes completed, simply remove them using "UNDO."

1.75 Chapter 12

Chapter 12

Working with Fonts

By using the different Xi-Paint tools and paint modes you can get several effects, which eclipse a lot of very expensive video titling programs. The following pages will give you an overview of some possible experiments. Remember to try all the possibilities by yourself.

12.1 Text with Shade

12.1.1 Shades for Individual Letters

12.2 Scripts and Brushes

12.2.1 Dealing With Text

12.3 New Script Styles

12.3.1 Letters with Rounded off or Sloped Corners

1.76 Text with Shade

12.1 Text with Shade

This is a very effective trick. Call the color requester (<right Amiga> <C>) and assign red (255, 0, 0) and yellow (255, 255, 0) to the first two colorboxes. DON'T FORGET TO CLICK "AS-SIGN". Now open the shade requester (<right Amiga> <U>) and set a "two color - vertical" shade. Next call the style requester (<right Amiga> <T>) and set a big script size. Click the disk symbol and choose from the font requester a font you know to be relatively thick (try one ending with "bold" or "_B"). Set the size to a minimum of 50 points (depending upon your resolution you can also choose larger sizes). 50 point fonts are optional for 640x480 or 800x600.

Figure: Style-Requester

Do not change the values for xdpi and ydpi and set antialiasing to "on". That's especially important for non compugraphic but common Amiga formatted fonts. Now open a new worksheet. Set the paint mode to "shade" (<right Amiga> <3>) and use the text tool <t>. It is important to use the one point pencil. A text input requester will appear. Finish your input with <enter>. The tipped letters or signs will stick as brush on the pointer and can dragged to

the position you want. By pressing the left mouse button you can fix the text to your worksheet. You'll be amazed with the result. Of course you can use each possible shade. Try for example the four point shade. But how to use the shade for each individual letter or sign?

12.1.1 Shades for Individual Letters

1.77 Shades for Individual Letters

12.1.1 Shades for Individual Letters

Clear the old worksheet. Set the worksheet paint mode to "solid" (>right Amiga> <l>). Now insert your text again (use the brush requester or the text tool). Now assign to your color requester the first four boxes with red (255,0,0), yellow (255,255,0), green (0,255,0) and blue (0,0,255). In the shade requester choose 4 color shade. Check it using the preview. Now use the one point pencil and choose the paint mode "shade". Painting tool is "fill" (<f>). Now click each letter of your text. The shade will be assigned to each letter.

Figure: Text with shading

1.78 Scripts and Brushes

12.2 Scripts and Brushes

To get the most beautiful results you need a lot of practice and experimentation. Copy the following methods exactly for exercising, otherwise the text might appear a little bit ugly.

12.2.1 Dealing With Text

1.79 Dealing With Text

12.2.1 Dealing With Text

Open the color requester and assign the first four color boxes again with red, yellow, green and blue. Activate a 4 color shade. For painting mode use "shade" and as tool "filled rectangle" (<R>). Then activate the magnifier because our rectangle should have exactly 8x6 points. Then choose the tool for cutting out rectangular brus-

hes () and take that rectangle as brush. Avoid cutting out parts of the background. Turn off the magnifier. Choose a very fat font from the style requester - a size of at least 75 points. Set the paint mode to "solid" and activate the text tool. Insert any short text. Try inserting a space between each letter because of the fat letters. Finish your inserting with <enter> and insert the text at any place in your worksheet. The text will appear with a very effective 3D effect. The result will be even more astounding, if you choose a "2 color, vertical" shade and activate the one point pen cil, the filling tool and as Paint mode "shade". Now click each letter. Well, how do you like the result??

Figure: Text with brush

1.80 New Script Styles

12.3 New Script Styles

Sometimes you'll need one or two very big letters as background, for example. In this instance you'd like to get rounded off letters. Unfortunately you may not have the right font. So, what to do?

12.3.1 Letters with Rounded off or Sloped Corners

1.81 Letters with Rounded off or Sloped Corners

12.3.1 Letters with Rounded off or Sloped Corners

By using the brushes together with text, a desired corner shape can be created. Notice that this is useful for very big letters (bigger than 150 points). Draw a circle or a rhomboid. It's size depends on the chosen letter size. For a 150 point letter use a rhomboid with 4 points or a circle with a diameter about 8 points. Cut out this brush and mask the background color (choose the background color from the color requester and press </>). Now set the desired font, enter your text and write it to your worksheet. You'll get your text and the desired rounded off corners. Of course you can arrange the corner shapes however you want. You can brighten up the letters for example with a shade to add an extra touch.

1.82 Chapter 13

Chapter 13

Mask

The Mask function is one of the most powerful features of a computer paint program. In the world of material art the ability to mask off portions of an image is used by airbrush artists, professional photographers, printers, and even sign makers. With the help of the mask function it is easily possible to separate a person from any type of background or even to change the color of the sky from blue to orange. This is one of the more difficult features to master but one of the most rewarding!

First of all, we work with an example. Open the file "Eis.jpeg".

Figure: Eis.jpeg

We start with the simplest kind of mask. We want to paint only in the background of the ice-cream wafer. Normally, you can paint around the wafer, but it is very difficult not to destroy the wafer. Now we want to make a mask, which stencils out the wafer. Open the mask menu with the shortcut <Amiga> <M>.

Figure: Mask-Requester

Note: the mask-functions always work on the project activated most recently! So, if you have many projects open, click on this one, which you want to manipulate.

Often when you click on Preview (the mask, "show"), and a new project, which contains only the grey-mask of the previous selected picture will open. This window is then active. For the next mask-operation, you have to activate your paint-project or close the preview, so the last project will be activated.

- 13.1 Painting on the Mask
- 13.2 Mask-Preview
- 13.3 Exempt Motives
 - 13.3.1 The Color Look Up Table

1.83 Painting on the Mask

13.1 Painting on the Mask

The next step is to tell Xi-Paint which color we want to use for masking. An easy way is to press "#" to get the actual color after the next mouseclick. So, please click after pressing "#" on the black of the ice-cream-project. If the support-color in the mask-menu is on 0, the actual color-register is on 0, the rectangle in the mask-menu will be black. If the support color is not 0, please move the scroller to the left.

Then, we want to paint on the mask. So click on the top-left button one time, to get the feature "Paint on Mask".

After this, we have to tell Xi-Paint the mask-mode. This is done by choosing the right mode in the mask-menu (the menus from the mask-window). There we choose "One Color" or we press <Amiga> <o>.

Now we click on "Add". Xi-Paint calculates the mask.

1.84 Mask-Preview

13.2 Mask-Preview

To have a look to the mask, we can click on "Show". Xi-Paint opens a new project which contains the actual mask in black/white. Now close this project.

Click on "Switch on Mask?" to activate the mask-function. Then you can paint on the picture "Eis.jpeg" without destroying the wafer.

Figure: Mask of Icecream

1.85 Exempt Motives

13.3 Exempt Motives

If we have a complicated picture and we want to exempt for example a person in front of the sea, we need a little more knowledge of Paint. For the next Example please open the picture "Blume.jpeg".

Figure: Blume.jpeg

Our target is to work with the flower without the leaves.

Figure: Flower without background

One of the ways to realize this is to mask out the green color. But this way won't work due of some reflections on the flower itself.

Also the Saturation and Contrast-mask functions are not useful because of the same values of the leaves and the flower.

The last possibility is to do it with the CLUT (Color Look Up Table).

13.3.1 The Color Look Up Table

1.86 The Color Look Up Table

13.3.1 The Color Look Up Table

First choose in the menu bar the entry "CLUT". Next, we have to pick some colors from the picture. Therefore Xi-Paint gives you the ability to pick a square of 1x1 up to 20x20 pixels at one time. You can set the width with the slider "CLUT length". Move this slider to 20, then click on "Clear Mask" to clear the old mask out of the picture.

With "Get Clut" you can pick a portion of pixels, which will be masked out. The mouse pointer will change to a square. Pick the middle of the flower of your project. Then click "Add" in the mask-window.

Next click "Show" to look at the mask. If you haven't chosen enough pixels to mask out the flower, then pick some new CLUTS with "Get CLUT" and "Add".

Figure: Mask of flower

Don't forget to close the actual preview-window!

Now, as you will see, the mask is white around the flower, and black on the leaves. We already want to paint on the leaves. So we have to invert the mask. Do this by choosing "Invert" in the mask-menu (<Amiga> <v>).

This will invert the actual mask of the actual project.

In this example, you never will get all of the pixels correct. So we have to do some manual work to mask out the flower perfectly. Do this by painting with a solid color in the zoom-mode with one single pixel.

Figure: Flower almost finished

This will also reflect in the mask. After switching on the mask, you can paint around and over the flower - the leaves will disappear, the flower will be exempt.

Figure: Flower finished

1.87 Chapter 14

Chapter 14

Layers

14.1 Compositions with Layers

14.2 The Theory

14.3 Another example for using the layers

1.88 Compositions with Layers

14.1 Compositions with Layers

This feature is one of the specialties of Xi-Paint. It allows you to compose many different pictures into one. The composition depends on the Maximum (Alpha) Mask, wherein some of the layers have a special function. The different layers are composed by mathematical functions which have as parameters the hue of a color, the intensity, the value or a value of the Alpha-Mask.

Example

Open a new project with the width and height of 150. Then choose load a picture, to open the file "Blumeklein.jpeg". This is our first picture for the composition.

Figure: Blumeklein.jpg

Now open a second project, which has the width and height of 150 pixels (create this with New). In this project, we will paint a circle, which is bright in the middle and becomes darker towards the borders. We are working with a little project, because we will need a bit of memory for the different projects.

To paint this circle, we create a pen. Open the pen-requester (with Amiga P) and click on an empty record. Then click on "Generate Pen" to open a new window. Then click on "Gen. Curve". Give both sliders the value of 100. Close this window and put the pixel-slider to the maximum of 100. Then click on "round" to generate the new Pen.

Now pick from the Menu of the new project the painting mode "Solid". To place the pen in the middle of the flower, click on the border of the flower-picture and select on the menu bar "Background". Now select the new project window (click on the border) and switch on the light table. Now you can see the flower in lower intensity. Place the actual pen in the middle of the flower and press the left mouse button for a few seconds.

Figure: Pen

Then turn off the light table. Now you have 2 pictures for the composition.

Figure: Layerwindow

Open the layer window. Click on "Blumeklein.jpeg", then on "add".

The name appears to the right. Then click on "project 2" and on "add". Then click on show. After a few seconds, a new window will open which shows you the composition of the two projects.

Figure: Flowerlayer finished

Note: All Layers have to be the same size for optimal results!

If you don't have enough memory (Memory-Warn), please close some unused boxes to save memory.

1.89 The Theory

14.2 The Theory

The example above was a very easy one. But has happened? - Paint has taken the intensities of the first project (in the listview gadget, right) and the colors from the second project.

If you have three pictures, Xi-Paint takes the intensities (brightness) of the first project, the colors and saturation-values from the second one. Then it takes the values from the Alpha-Mask of the third project, and calculates the percentage. Then it composes the result above with the third picture in relation to the mask value.

Figure: 3-Layer picture

If you have more pictures, the last point will be repeated.

1.90 Another example for using the layers

14.3 Another example for using the layers

Open three projects, each the same size. Make a white Background (clear with white K). Paint a bicycle on the first project with a black smooth airbrush. Choose for this project "Background" from the paint-mode-menu. Then activate the second project and switch on the light table. Take a larger airbrush and choose color cycle from the paint-mode-menu. Colorize the bicycle.

Finally paint in the third project with "As-it-is" some Airbrush-dots, around the bicycle. Alternative you can choose a digitized picture and clear the Alpha-Mask in the region of the bicycle.

After composing these three pictures, you have a new composition with a background and a colorized object.

Figure: 4-Layer picture

1.91 Chapter 15

Chapter 15

The Painting Tools

Figure: Tool icons

The painting tools are the heart of Xi-Paint. There are several tools which allow you nearly free composition of your paintings.

- 15.1 Two-Part Buttons
- 15.2 The Single Point Manner (Freehand tool)
- 15.3 Regular Freehand Tool
- 15.4 Filled Freehand Outlines
- 15.5 Straight Line Tool
- 15.6 Curve Tool
- 15.7 Rectangle Tool
- 15.8 Ellipse Tool
- 15.9 Polygon Tool
 - 15.9.1 Closing the Polygon
- 15.10 Filling Tool

1.92 Two-Part Buttons

15.1 Two-Part Buttons

The painting tools can be activated by its buttons or by short cuts. Notice that some buttons of the tool requester are separated in two different halves with different functions. You'll recognize it by the different look alike of the two halves of a button. So take care to press the desired half. Each painting tool will work with the chosen painting mode and the last chosen brush or pencil.

1.93 The Single Point Manner (Freehand tool)

15.2 The Single Point Manner (Freehand tool)

Shortcut: none

Figure: Freehand icon

This tool is for freehand drawing. But because these lines will be composed of single points, this tool is made for inserting brushes or to set points. So if you want to draw the outline of an object you want to fill afterwards, never use this tool. Otherwise the color will run out.

1.94 Regular Freehand Tool

15.3 Regular Freehand Tool

two time occupied tool:

Top shortcut: F

Bottom shortcut: D

Figure: Regular Freehand Icon

This tool produces run trough lines. If you move the mouse too fast. (what too fast means depends on your computer!) the line will have squares. While using pens or brushes bigger than 10 points you can make this procedure faster by setting the pixel stream bigger than 1. But take care to set odd numbers, otherwise ellipses, for example, will just be painted in one half.

1.95 Filled Freehand Outlines

15.4 Filled Freehand Outlines

The bottom part of this tool offers you the ordinary freehand tool. The top part produces filled outlines. You also paint the line by holding the left mouse button pressed. But suddenly after releasing the button the first and last point of the line will be put together and the resulting area will be filled. Xi-Paint also recognizes if a line crosses itself.

1.96 Straight Line Tool

15.5 Straight Line Tool

Shortcut: v

Figure: Straight Line Icon

Xi-Paint starts the line where you press the left mouse button first and ends it where you release the button. If you use a shade, a cycle, or a brush the drawing direction causes different results.

1.97 Curve Tool

15.6 Curve Tool

Shortcut: q

Figure: Curve Icon

Place your mouse pointer to the beginning of the desired line and press left mouse button. Now drag a line to your desired ending point. After releasing the button the line "sticks" on the pointer and the line can be formed to a curve. By pressing again the left button the curve can be fixed. Sinus curves and similar curves can be produced by putting single curves together.

1.98 Rectangle Tool

15.7 Rectangle Tool

twice occupied tool

Top shortcut: r

Bottom shortcut: R

Figure: Rectangle Icon

With this tool rectangles and squares can be produced. Place the pointer to one place and press the left button. Then drag the rectangle to the size you want. The diagonal opposite point will be the other corner. After releasing the button, the rectangle will be painted. The frame of a rectangle will always be painted clockwise. That's important to know for using Cycles, shades and brushes.

1.99 Ellipse Tool

15.8 Ellipse Tool

twice occupied tool

Top shortcut: e
Bottom shortcut: E

Figure: Ellipse Icon

This tool is used to paint ellipses. Move the pointer to the middle of the desired ellipse and drag the ellipse to the size you want. After releasing the button, the ellipse will be painted. The ellipse can be painted filled or outlined. The ellipse frame is produced in four steps. First the right top quarter and the left top quarter will be painted and afterwards, beginning with the very bottom point of the ellipse, the right and then the left bottom part will be painted.

1.100 Polygon Tool

15.9 Polygon Tool

twice occupied tool:

Top shortcut: w
Bottom shortcut: W

Figure: Polygon Icon

Move the pointer to the start of the polygon and press the left mouse button. Then release the button. The "rubberband" will stick on your pointer. After moving it to the different corners press the button again. The one line will be painted and the new one will be started at the new corner.

15.9.1 Closing the Polygon

1.101 Closing the Polygon

15.9.1 Closing the Polygon

You can set the last point exactly at the beginning of the first line (very difficult!) or you press the right mouse button. This will automatically paint a line between the first and the last point of your polygon.. The lines will be painted in the same order as painted. Painting a filled polygon will occur linewise, from left to right and from top to bottom.

1.102 Filling Tool

15.10 Filling Tool

Shortcut: f

Figure: Fill Icon

Just click a point inside the area you want to be filled. If the color runs out just check by magnifier if your object is really closed. For filling the selected painting mode and brush will be used. It will be filled from left to the right and linewise from top to bottom. For speeding up the filling function you can choose from system-2-window the option "fast fill". But notice that an optional alpha mask will be deleted in this way. Also undo will be impossible.

1.103 Chapter 16

Chapter 16

More Aids

Figure: More Tool Icons

Xi-Paint offers many more tools which will help to make your work easier.

16.1 Take a Rectangular Brush

16.2 Take a Polygonal Brush

16.3 Take a Freehand Brush

16.4 Light Table

16.5 Magnifier

16.5.1 Flexible Settings in the Zoom-Requester

16.6 Text

16.7 Undo

16.7.1 Undo for a Large Number of Steps

16.7.2 To Free Undo Memory

16.8 Redo

16.9 Help

16.10 Erase

- 16.11 Take a Pen
 - 16.11.1 Sizing Brushes by Mouseclick
- 16.12 Generate a One Point Pen
- 16.13 Info

1.104 Take a Rectangular Brush

- 16.1 Take a Rectangular Brush

Shortcut: b

Figure: Rectangular Brush Icon

Just drag a rectangle around the desired area. Everything inside will be part of the brush. After taking a brush it will stick at the pointer as it is or as a symbolic rectangle, depending on the brush size. The size (after which the brush will be shown while moving as a symbol) can be varied by ARexx or by using the "settings" requester. It may happen that after cutting out a brush nothing will occur. This happens if you have too little chip memory. Close all unnecessary requesters and try it again.

1.105 Take a Polygonal Brush

- 16.2 Take a Polygonal Brush

Shortcut: /

Figure: Polygonal Brush Icon

Use this tool analogous to the polygon tool. For "how the program shows the brush while moving" refer to the section before.

1.106 Take a Freehand Brush

- 16.3 Take a Freehand Brush

Shortcut: &

Figure: Freehand Brush Icon

Use this tool in the same way as the freehand tool.

1.107 Light Table

16.4 Light Table

Shortcut: <alt> <u>

Figure: Lighttable Icon

The object of the activated window will be shown in darker colors and the object of the window which had been defined as background will shine through. This enables you to simulate tracing. The light table will not work beside activated magnifier. How to assign a background painting to a painting window is explained in the chapter about painting modes, under the topic "background picture".

1.108 Magnifier

16.5 Magnifier

Shortcut: <alt> <m>

Figure: Magnifier Icon

For each activated painting window its own magnifier window can be assigned. The mouse pointer will show a rectangle which shows the last magnified cut out part. Click the left mouse button and the magnifier window will open. It is possible to draw in the painting window as well as in the magnifier window. The changes will immediately appear in the other window.

16.5.1 Flexible Settings in the Zoom-Requester

1.109 Flexible Settings in the Zoom-Requester

16.5.1 Flexible Settings in the Zoom-Requester

The magnifying factors can be set as desired by changing the values of the zoom requester. Also it is possible to change the magnifying factor with the + and - keys. Moving is possible with the Cursor-keys.

1.110 Text

16.6 Text

Shortcut: t

Figure: Text Icon

This tool is used for inserting any text in any painting window. After calling a requester an input box will appear. You can insert the desired text will all common editing possibilities.

Figure: Textinput Requester

First enter the text. Xi-Paint will then generate, using the selected style (style requester!) and size, a brush with text. This brush can be used like every other brush with all its special possibilities.

NOTICE, THAT Xi-Paint IS NOT A TEXTPROGRAM.

Each generated text is also available via brush manager.

1.111 Undo

16.7 Undo

Shortcut: u

Figure: Undo Icon

With undo you can delete the latest steps, regardless of what it was.

16.7.1 Undo for a Large Number of Steps

16.7.2 To Free Undo Memory

1.112 Undo for a Large Number of Steps

16.7.1 Undo for a Large Number of Steps

You can undo as many steps as your memory (the memory of the computer!) allows it to. If the computer runs out of memory the oldest of the steps will be forgotten. There is an individual undo memory for every painting window.

1.113 To Free Undo Memory

16.7.2 To Free Undo Memory

If your computer has enough memory you need not worry about this. With under 2MB RAM it may be possible that, because of undo, some functions which need a lot of memory become unusable. It's recommended to make the undo memory empty by "empty undo" (<right Amiga> <f>) from the menu. This empties the whole undo memory.

1.114 Redo

16.8 Redo

Shortcut: U

Figure: Redo Icon

In the same manner that you can make each step undone, you can also REDO them again. In this way mistakes will no longer be a problem.

1.115 Help

16.9 Help

Shortcut: HELP

Figure: Help Icon

Pressing HELP will give you information for the most important functions of Xi-Paint. Just place the pointer on the icon or other item you need information about and press help. Immediately a requester with the information will open. You can scroll the text with the scroll bars. You can close the help requesters by pressing "close". If there is no information on a topic, the help requester will be empty.

1.116 Erase

16.10 Erase

Shortcut: none

Figure: Erase Icon

Click the sponge symbol and the actual painting window will be cleared with the actual painting color. If you made changes and have not saved them before using the sponge, Xi-Paint will ask if you want to save your changes before erasure.

1.117 Take a Pen

16.11 Take a Pen

Shortcut: ,

Figure: Take-Pen Icon

The pen management is carried out by its own requester, which allows the generation of any circular or angular pens. Circular ones can also be created as airbrushes.

16.11.1 Sizing Brushes by Mouseclick

1.118 Sizing Brushes by Mouseclick

16.11.1 Sizing Brushes by Mouseclick

By using this function you need not change to the pen requester each time you want to resize your pen size. Using this function you can drag an ellipse by mouse to create the size you want for your pen size. Its lookalike will be defined by the settings in the pen requester. By taking a new pen the actual pen will be dropped.

1.119 Generate a One Point Pen

16.12 Generate a One Point Pen

Shortcut: .

The one point pen is a special case. On the one hand it is very difficult to generate manually. On the other hand you'll never need a pen more often than this one. That's why Xi-Paint offers a one point pen by key pressing. If you press < . > , Xi-Paint immediately generates the desired brush. But notice that this function overwrites the actual pen of the pen manager.

1.120 Info

16.13 Info

shortcut: <alt> <i>

Figure: Info Icon

After calling info a small requester will open, which shows you the number of your Xi-Paint version and its date of production. It will also tell you the names of the Xi-Paint programmers. After clicking "understood" button, the requester will close again.

1.121 Chapter 17

Chapter 17

Requesters

Xi-Paint offers several requesters for setting many different settings. Call each requester by clicking on its tool in the toolbox or by choosing the point from the "menus" menu. Some requesters can just be called by menu. A requester works in the same way a paint window does but doesn't have scrollers after it's made smaller.

17.0.1 Common Elements of the Different Requesters

17.1 Brush Requester

17.1.1 Automatic Adaption of the Scale

17.1.2 Brush Menu

17.1.3 Save

17.1.4 Delete (from brush pool)

17.1.5 Swap to Disk

17.1.6 Refreshing

17.1.7 Delete

17.2 Grid requester

17.3 File Requester

17.3.1 The File Directory

17.3.2 How to Change Directories and Drives

- 17.3.3 Manual Input of a Path
 - 17.3.4 Minipic Menu
 - 17.3.5 Store-Format Menu
 - 17.3.6 Alpha
 - 17.4 Shadow Requester
 - 17.4.1 Setting the Shadow Length
 - 17.5 Cycle Requester
 - 17.5.1 Generation of a Cycle
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 - 17.6 Shade Requester
 - 17.6.1 Two Colors, Horizontal
 - 17.6.2 Two Colors, Vertical
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 - 17.7 Style Requester
 - 17.7.1 Choosing a Style
 - 17.7.2 Color Fonts
 - 17.7.3 Minipics for Fonts
 - 17.7.4 Setting the Size
 - 17.7.5 Xdpi and Ydpi for Picture Proportions
 - 17.7.6 Antialiasing for Soft edges
 - 17.8 Setting Requester
 - 17.8.1 Setting the System Fonts
 - 17.8.2 Number of Brushes and Pens
 - 17.8.3 To Set Standard Directories
 - 17.8.4 Local Mode
 - 17.8.5 Click to Front
-

- 17.8.6 Eat first Click
 - 17.8.7 Saving Settings and Leaving the Program
 - 17.8.8 Set the Path for Macros
 - 17.8.9 ASL- or Xi-Paint File Requester
 - 17.8.10 Way of Showing Brushes
 - 17.8.11 Painting without moving the mouse
 - 17.8.12 Delete mouse moves
 - 17.8.13 Hot Spot
 - 17.9 Parameter-Requester
 - 17.9.1 Anti-Aliasing
 - 17.9.2 Fast Fill
 - 17.9.3 Keep Mask
 - 17.9.4 pixel stream
 - 17.9.5 1-Pixel-stream
 - 17.9.6 brightness, darkness
 - 17.10 VLab Requester
 - 17.10.1 Requirements for Working with VLab
 - 17.10.2 Video Offset
 - 17.10.3 Width and Height of the Picture
 - 17.10.4 Choosing the Input Signal
 - 17.10.5 Grabbing a Video Picture
 - 17.10.6 VLAB Menu
 - 17.11 Palette Requester
 - 17.11.1 Colors for Working
 - 17.11.2 Color Mix Methods
 - 17.11.3 Copy, Changing and Shade
 - 17.11.4 Taking a Color
 - 17.11.5 RGB Triangle by Maxwell
 - 17.11.6 HSV Scheme
-

- 17.11.7 Palette Menu
 - 17.11.8 Load
 - 17.11.9 Save
 - 17.11.10 Scheme Menu
 - 17.12 Macros
 - 17.12.1 Macros Using AREXX
 - 17.12.2 Recording Macros
 - 17.12.3 Playing a Macro
 - 17.13 Mask requester
 - 17.13.1 Mask for Excepting Certain Motives
 - 17.13.2 A color
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 - 17.13.7 Addition of Several Masking Steps
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 - 17.14 Pen Requester
 - 17.14.1 Pen Preview
 - 17.14.2 Generate a Pen
 - 17.14.3 Square Pens
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 - 17.14.5 Different Kinds of Airbrushes
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 - 17.14.7 One Point Brush
 - 17.14.8 Pen Menu
 - 17.15 Zoom Requester
 - 17.15.1 Enlarging a Part of the Project
-

- 17.15.2 Scaling Down a Part of the Project
- 17.15.3 One Magnifier for Each Worksheet
- 17.16 Layer Requester
 - 17.16.1 The Two Lists of the Layer Requester
 - 17.16.2 Fixing the Order
 - 17.16.3 Generating a Picture Composition

1.122 Common Elements of the Different Requesters

17.0.1 Common Elements of the Different Requesters

Each requester can be closed by <enter>, but the cursor must not be in a textbox and the requester has to be activated. If there is a difference between "confirming" (in most cases using "OK") and "cancel" (button "cancel"), pressing <enter> will have the same effect as clicking the confirmation button. The "menus" menu is just available, if a painting window, the toolbox, or the background are activated. In learning about the requesters we will always use the following order: title, icon in the toolbox, menu command and shortcut. An introduction describes in a few words the purpose of the requester. Then the requester is shown and its functions are described exactly. At the end of this text there is a table, containing the menu to which the requester belongs and the different shortcuts. "A" always means <right Amiga>.

1.123 Brush Requester

17.1 Brush Requester

Shortcut: <right Amiga>

Figure: Brush Requester Icon

This requester allows you to manage up to 128 of the most recently produced brushes. The number of brushes being managed can be set in the "Settings" requester and depends upon your computers harddisk memory. Each cut out or manipulated brush (even turning or reflecting a brush will be stored as new brush!!!) will be stored in the brush manager. After reaching the maximum amount of stored brushes the oldest ones will be deleted. The requester itself contains eight buttons, a scroller and the "close" button. The eight buttons each show a picture of the brush they represent.

- 17.1.1 Automatic Adaption of the Scale
- 17.1.2 Brush Menu
- 17.1.3 Save
- 17.1.4 Delete (from brush pool)
- 17.1.5 Swap to Disk
- 17.1.6 Refreshing
- 17.1.7 Delete

1.124 Automatic Adaption of the Scale

17.1.1 Automatic Adaption of the Scale

The representation picture on the buttons doesn't say anything about the real size of the brush. Xi-Paint uses the offered area as well as possible, regardless of the scale. After clicking a button, its brush will automatically stick on your pointer and can be used as just cut out. The scroller allows you to get a preview of all the stored brushes in the order you have stored them. If you do not need the requester any longer, just press "Close". The brush manager has two menus which contain the following commands:

1.125 Brush Menu

17.1.2 Brush Menu

load shortcut: <right Amiga> <l>

This menu allows you to load a certain brush, from another paint program or a whole picture, which Xi-Paint should use as brush. After choosing this menu point a file requester will appear, where you can insert the desired file. To import a brush Xi-Paint uses, (as it does it by loading pictures) the multipic.library. You can use each file format which is supported by this library. Further information you can access in the section "file requester".

1.126 Save

17.1.3 Save

Shortcut: <right Amiga> <s>

If you want to save a brush permanently, use this menu feature. First click on the desired brush and then choose "save". A file requester will open where you can insert the path and filename. Saving also uses the `multipic.library`, so you can use each format this library supports. Further information you'll find in the section "filerequester".

1.127 Delete (from brush pool)

17.1.4 Delete (from brush pool)

Shortcut: <right Amiga> <x>

After finishing a project it's recommended to delete the brushes you'll no longer need, to free up hard disk space. This is done by using the menu point "delete (from pool)". Click the brush you want to delete in the brush requester and then call this menu point.

1.128 Swap to Disk

17.1.5 Swap to Disk

Shortcut: <right Amiga> <w>

Xi-Paint stores each brush manipulation first to the RAM and not on the harddisk, to avoid unnecessary harddisk use. If there is not enough room in your RAM, Xi-Paint writes the brushes to the harddisk. If your computer breaks down, the brushes stored in RAM will be lost. This command forces the saving of the brush to the harddisk.

1.129 Refreshing

17.1.6 Refreshing

Shortcut: <right Amiga> <f>

You'll need this command if your brushes get into disorder (for example by manipulation by another program). By calling this command all brushes will be saved from RAM to harddisk. After this each brush will be loaded and each symbol for the brushrequester will be newly generated. This command also checks to see if there are symbols without brushes because they had been deleted by another program. In this case refreshing will delete the symbol. But notice that this command takes some time, so just use it if it's really necessary.

1.130 Delete

17.1.7 Delete

Shortcut: <right Amiga> <D>

This command deletes all brushes under management.

Review of menu commands

brush		Pool	
load	A-l	swap to Disk	A-w
save	A-s	refresh	A-f
delete (from pool)	A-x	delete	A-D

1.131 Grid requester

17.2 Grid requester

Shortcut: <right Amiga> <G>

Figure: Grid-Requester Icon

With this command you can activate an invisible position grid.

Figure: Grid-Requester

This might be helpful in certain cases, especially for technical projects or if you want to compose your object from certain parts. You see, it simulates graph paper, wherein the squares can be sized as you want. You just have to insert the desired values to "width" and "height". The start of the grid can be fixed anywhere. You need not start in the left top corner. You can choose at which distance from the top and the left edge the grid should start. Set the values in "X-offset" and "Y-offset". The grid can be switched on and off by "on"/"off" buttons. The grid is always activated for all opened painting windows, it can't be set for just one window. It's not valid for opened requesters.

1.132 File Requester

17.3 File Requester

Call this requester if you want to load or save a certain file. The standard file requester always looks the same, regardless of whether

you want to save/load a brush, picture, palette or anything else.

Figure: File Requester

17.3.1 The File Directory

17.3.2 How to Change Directories and Drives

17.3.3 Manual Input of a Path

17.3.4 Minipic Menu

17.3.5 Store-Format Menu

17.3.6 Alpha

1.133 The File Directory

17.3.1 The File Directory

Most parts of the requester use the file directory. It shows all possible drives, directories and files. If the number of directories and files is bigger than the window, use the scroller. The inserts to the directories will always be shown in alphabetical order. First the directory and then the files are shown.

1.134 How to Change Directories and Drives

17.3.2 How to Change Directories and Drives

To get into a directory just click on it. Its files will then be shown. If you want to get one step higher in the hierarchy, click "parent". By clicking "drivers" all possible physical and logical drivers will be shown. By clicking a driver, its content will be shown.

1.135 Manual Input of a Path

17.3.3 Manual Input of a Path

You can also insert the path in the insert box "drawer". After pressing <enter> the drawers content will be shown. If the drawer does not exist the directory will remain empty. The file name can also be inserted by hand ("Insertbox "file") or by choosing it from the file list. To save a file under a new name, use the manual method. After you finish inserting, close the requester by pressing

OK. If you have chosen a file from the file list, you can also double click it to close the requester.

1.136 Minipic Menu

17.3.4 Minipic Menu

Generate shortcut: <right Amiga> <g>

Xi-Paint automatically generates a minipic to each project. Existing projects have no minipic, but you can generate one by "generate". Just click the desired project in the file requester, so that its name appears in the "file" input box. Now press "generate" and the minipic will be created. The minipics will be stored in the same directory as the original project, but its ending will be ".mpic". So if you want to delete it you just need to delete this file. IFF-ILBM formatted files contain their minipic, which means that it is invisible for you.

To stop Xi-Paint doing minipics, you can switch this feature off in the "Settings-Menu".

1.137 Store-Format Menu

17.3.5 Store-Format Menu

This menu lists all the formats available for saving. Xi-Paint uses `multipic.library`, so how many formats are available depends on the version of the library. The settings are valid for pictures as well as for brushes. The activated format is shown by a hook.

1.138 Alpha

17.3.6 Alpha

Shortcut: none

If this has been activated (shown by an hook in front of the command), the alpha channel of a picture will also be stored. It will use more room on you harddisk, but if you have masked your brush before it's useful to choose this feature. In this way the brush will be available still masked.

Review of the menu commands

Minipic		Storeformats	

generate	A-g	Depends on your version of	
		"multipic.library"	

		Alpha	

1.139 Shadow Requester

17.4 Shadow Requester

Shortcut: <right Amiga> <H>

Figure: Shadow Requester Icon

If you want , Xi-Paint will automatically produce shadows for the most important painting options.

Figure: Shadow Requester

The shadows position and look can be defined in this requester. The manual production of a shadow is very difficult, so Xi-Paint does this for you. Even the direction of the shadow can be defined. For these definitions you'll find two scrollers ("X-offset" und "Y-offset") which set the shadow's x and y distance to your object.

17.4.1 Setting the Shadow Length

1.140 Setting the Shadow Length

17.4.1 Setting the Shadow Length

It's possible to use values between -20 and 20. Right beside the scrollers there are two input boxes, which show the actual shadow position. It's also possible, to insert the desired values directly to this box. If insert values are lower or higher than the acceptable values, they will be automatically corrected. The "preview" should give you an idea of how the shadow will look. For best results shadows with a x/y distance from 3 to 6 are recommended. To activate the shadow for painting, use the "on" / "off" switcher in the bottom left corner of the requester. The requester can remain open while you're painting. Close it by pressing "close". If shadow is activated, it will remain activated.

1.141 Cycle Requester

17.5 Cycle Requester

Shortcut: <right Amiga> <Y>

Figure: Cycle Requester Icon

This function allows the definition of the cycle area, which is realized by the colors of the paint mode.

Figure: Cycle Requester

Xi-Paint offers the special paint mode "cycle" (for further information: see "paint modes"). First set the number of steps which should cover the cycled area. A value about 2000 will mean that the cycle will use 2000 different colorhues between the two "from" and "to" colors, then it will start with the first color again. "From" "To" deals with the colorboxes and concerns the look of the cycle. "From" means the first color in the colorrequester, "to" the last one. Xi-Paint will produce a cycle by using the colorhues in between these two colors. If one of the colors is not defined yet, - Paint will use the automatically set color "black. The value "From" always has to be smaller than "to", otherwise Xi-Paint generates

NO cycle but gives no message.

17.5.1 Generation of a Cycle

17.5.2 Offset

1.142 Generation of a Cycle

17.5.1 Generation of a Cycle

A new cycle will only be generated if you press "generate". After having been generated, a cycle is ready to use for all paint operations (NOTICE, make sure to choose "cycle" beforehand!). The window need not to be closed.

1.143 Offset

17.5.2 Offset

It's important to take care of the offset, especially if you want to start your cycle of the next operation with a certain color. For getting vertical lines it's necessary to paint a rectangle, which contains an exact multiple of the step number. In this case set the offset to "0". For diagonal lines you'll need a higher value.

1.144 Shade Requester

17.6 Shade Requester

Shortcut: <right Amiga> <U>

Figure: Shade Requester Icon

Here you can set the appearance of shades. Here Xi-Paint offers very special features.

Figure: Shade Requester

For setting the appearance of the shade use this requester. But it will only be valid if you set the paint mode to "shade". Xi-Paint offers six different shade possibilities to you, which use between two and five colors each. Which colors are used can be set in the color requester. Xi-Paint always uses the first five colorboxes.

The different colors will be used from left to right and from top to bottom. For a four color shade this means that the first top corner gets the first, the right top corner the second, the left bottom corner the third and the right bottom corner the fourth color. Which one of the possible shades will be used, can be chosen in the bottom third of the shade requester. By clicking the next possibility will be shown.

17.6.1 Two Colors, Horizontal

17.6.2 Two Colors, Vertical

17.6.3 Three Colors, Two on Bottom

17.6.4 Four Colors

17.6.5 Five Colors

1.145 Two Colors, Horizontal

17.6.1 Two Colors, Horizontal

Shade from left to right.

1.146 Two Colors, Vertical

17.6.2 Two Colors, Vertical

Shade from top to bottom (for sunsets, texts, etc.).

1.147 Three Colors, Two on Bottom

17.6.3 Three Colors, Two on Bottom

The first color on the top border, the second one in the left and the third one in the right bottom corner.

1.148 Four Colors

17.6.4 Four Colors

To each corner one color will be assigned which will meet each other in the middle.

1.149 Five Colors

17.6.5 Five Colors

The first four colors start from the corners, the fifth point can be set wherever you want. To do so use the two scrollers "5th point". You can precisely set the position of your fifth point. The per cent values can be set between 0 - 100

0/0 means that the fifth point is set to the left top corner. But notice that this will cover the first color. It's recommended to choose values which set the fifth point to the center or to one side. (50/50 center, 0/50 middle of the left side, 50/0 center of the top side, etc.)

Preview gives you an idea of how the shade will appear. If "shade" is activated, each manipulation will be valid.

1.150 Style Requester

17.7 Style Requester

Shortcut: <right Amiga> <T>

Figure: Style Requester Icon

Use this requester to choose style and size for a text operation.

Figure: Style Requester

Xi-Paint uses all styles which are supported directly by the operating system. This means Xi-Paint is able to load each font which is to be found in the font directory. Xi-Paint also supports computational styles.

17.7.1 Choosing a Style

17.7.2 Color Fonts

17.7.3 Minipics for Fonts

17.7.4 Setting the Size

17.7.5 Xdpi and Ydpi for Picture Proportions

17.7.6 Antialiasing for Soft edges

1.151 Choosing a Style

17.7.1 Choosing a Style

Type the name of the font directly into the text box in the style requester or choose it by mouse directly from the file requester (you'll get the requester by clicking the disk symbol beside the insert box). This requester also offers you the ability to set the size of your text. Just load files with the ending .font. Otherwise you'll get an error message.

1.152 Color Fonts

17.7.2 Color Fonts

Xi-Paint does not support color fonts. But that's not important, Xi-Paint is capable of producing wonderful colors and even special effects.

1.153 Minipics for Fonts

17.7.3 Minipics for Fonts

As a special feature it is also possible to create minipics for Fonts. To load a special font, click its name. After closing the file requester,

the name will automatically be used by the style requester. The style requester offers three scrollers beside the input boxes. These boxes can be manipulated directly or by mouse or keyboard.

1.154 Setting the Size

17.7.4 Setting the Size

The first scrollers allows you to fix the size. Values between 1 and 255 are possible. While using some special fonts it might be possible that some sizes won't be supported. In this case Xi-Paint will always jump back to the smallest possible value. This is not a limitation of Xi-Paint but a problem of the operating system.

1.155 Xdpi and Ydpi for Picture Proportions

17.7.5 Xdpi and Ydpi for Picture Proportions

These values are used for setting the x/y distortion of the text. Default is 75/75. That's necessary because each font is made for a certain resolution, so the dpi values have to be set. If a font is designed for a resolution of 320x256 (5:4) it will look odd if you use it for a resolution of 800x600 (4:3).

By changing the dpi values you can cause a distortion. 75/75, which is the right value for 320x256, just set for example 60/56 or 120x112. In practice you won't need this feature very often.

1.156 Antialiasing for Soft edges

17.7.6 Antialiasing for Soft edges

If you want to get a very soft adapting text it's recommended to set "antialiase" to "on". Xi-Paint will try to get a transition as soft as possible between text and background. Most times this will cause a very nice looking effect, but it needs a longer time than the insertion of simple text.

1.157 Setting Requester

17.8 Setting Requester

Shortcut: <right Amiga> <S>

Figure: Setting Requester Icon

In the setting requester you have to set some values which effect your work with Xi-Paint.

Figure: Setting Requester

- 17.8.1 Setting the System Fonts
- 17.8.2 Number of Brushes and Pens
- 17.8.3 To Set Standard Directories
- 17.8.4 Local Mode
- 17.8.5 Click to Front
- 17.8.6 Eat first Click
- 17.8.7 Saving Settings and Leaving the Program
- 17.8.8 Set the Path for Macros
- 17.8.9 ASL- or Xi-Paint File Requester
- 17.8.10 Way of Showing Brushes
- 17.8.11 Painting without moving the mouse
- 17.8.12 Delete mouse moves
- 17.8.13 Hot Spot

1.158 Setting the System Fonts

17.8.1 Setting the System Fonts

The first two values deal with the fonts used for window titles, menus, etc. You can use any standard Amiga font. Insert its name in the insert box beside "system Font Name" or choose it by mouseclick. After clicking the disk symbol beside the insert box, the standard font requester will open, in which you can choose the font by mouse click. Then you can set the size of your font. Xi-Paint allows a value between 6 and 13 points. A font size below 10 points is only recommended in case of a very low resolution (lower than 640x480) or if you are a real man and have a big screen (bigger than 17 inches).

1.159 Number of Brushes and Pens

17.8.2 Number of Brushes and Pens

By using the scroller beside "number of brushes" you can set the maximum amount of managed brushes. You have the same options to set the number of pens. For both options you can use values between 1 to 256. This choice is important, because each pen or brush will be stored and needs room on your hard disk.

1.160 To Set Standard Directories

17.8.3 To Set Standard Directories

Each time Xi-Paint opens a file requester, it will show a certain directory and its content. Which directory this should be can be fixed by the setting "global path". Insert the desired name directly to the input box or choose it by mouse, after clicking the disk symbol beside the insert box. With the same steps it's also possible to define your own path for saving the color palettes (input box beside "palette path").

1.161 Local Mode

17.8.4 Local Mode

If this mode is activated, in each paint window different paint modes can be set. Otherwise each project will be affected if you change one tool for a certain window.

1.162 Click to Front

17.8.5 Click to Front

Xi-Paint enables you to click certain project windows to front. But if the time interval is set too long, Xi-Paint might understand some paint operations as a double click. In this case just shorten the allowed time for double click or switch off "Click to front".

1.163 Eat first Click

17.8.6 Eat first Click

The first click to an inactivated window just activates it. If you want to draw with your first click, switch off this feature.

1.164 Saving Settings and Leaving the Program

17.8.7 Saving Settings and Leaving the Program

"Save settings" fixes each setting so they are automatically saved when you leave Xi-Paint. You can use them again with a new start. "Close" overtakes the values and leaves the settings requester.

Figure: 2nd Setting Requester

Depending on the version you use, the second page of this requester offers several other features.

1.165 Set the Path for Macros

17.8.8 Set the Path for Macros

The first setting fixes the path for self made macros. Default is "macro" in the Xi-Paint directory. If you want to change this default setting you can do that in the standard way.

1.166 ASL- or Xi-Paint File Requester

17.8.9 ASL- or Xi-Paint File Requester

ASL requester can only be opened on its own system screen. That's why Xi-Paint has a requester had been programmed which is similar to the ASL requester. If you do not want to miss your ASL original, you can make Xi-Paint use it. But if you use it, Xi-Paint always has to switch between the workbench screen and the Xi-Paint screen. Minipics are also not possible. An individual menu definition is also impossible. Just for choosing a font ASL offers some advantages by its preview list.

1.167 Way of Showing Brushes

17.8.10 Way of Showing Brushes

Xi-Paint always tries to show pens and brushes in its full size, even while moving. This might need a lot of time, dependent upon your computers memory. If this showing lasts too long, it can just be as just a frame. The size from which starting a brush or pen should be shown as a frame can be defined. This happens using the scroller "Brush Opaque Move". The smaller the set value is, the quicker a brush will be shown as a frame.

1.168 Painting without moving the mouse

17.8.11 Painting without moving the mouse

To give Xi-Paint more Events for drawing, increase this slider.

1.169 Delete mouse moves

17.8.12 Delete mouse moves

For a faster working with Xi-Paint (in special case with big brushes), increase this value.

1.170 Hot Spot

17.8.13 Hot Spot

Here you can move the "hot spot" of the mouse pointer. Especially if you work with your own Pointer (which is named "Pointer.Pic" and "Busy.Pic") you can set the hot spot. The pictures has to be in an 32-Bit format, which has a valid alpha-plane.

1.171 Parameter-Requester

17.9 Parameter-Requester

Shortcut: <rechte Amiga> <D>

Figure: Parameter Requester

17.9.1 Anti-Aliasing

- 17.9.2 Fast Fill
- 17.9.3 Keep Mask
- 17.9.4 pixel stream
- 17.9.5 1-Pixel-stream
- 17.9.6 brightness, darkness

1.172 Anti-Aliasing

17.9.1 Anti-Aliasing

The quality of painted lines depends upon the value you set for "line-Antialiasing factor" by the scroller. You can use, depending to the desired effect, values between 1 and 255. This feature allows you to minimize the well known stair effect which reminds you of the single points an object is made of.

1.173 Fast Fill

17.9.2 Fast Fill

If you use this feature, be careful when using "mask". Filling significantly impacts the mask function which would write over a user defined mask. For avoiding that, Xi-Paint "saves", before starting to fill existing masks and "rebuilds" them after having finished filling. This action may need some time. If you activate "fast fill", you allow Xi-Paint to overwrite existing masks which will speed up the procedure.

1.174 Keep Mask

17.9.3 Keep Mask

Some operations are faster, if they can erase the mask. If you need the alpha-mask, you can save it by activating this button.

1.175 pixel

17.9.4 pixel stream

If you want to paint with an fast airbrush, so put this slider on a value between 3 and 8. So the airbrush is 3 to 8 times faster.

1.176 1-Pixel-stream

17.9.5 1-Pixel-stream

Put this slider on a value greater 1 if you want to have a dotted line (rectangle etc.).

1.177 brightness, darkness

17.9.6 brightness, darkness

Gives a value for the function "darker" and "brighter" in %.

1.178 VLab Requester

17.10 VLab Requester

menu: VLab...

shortcut: <right Amiga> <V>

By using this requester Xi-Paint can directly digitize pictures for editing them. You just have to have the amazing VLab Y/C digitizer. After having installed it, the menu point "VLab" is ready to use.

17.10.1 Requirements for Working with VLab

17.10.2 Video Offset

17.10.3 Width and Height of the Picture

17.10.4 Choosing the Input Signal

17.10.5 Grabbing a Video Picture

17.10.6 VLAB Menu

1.179 Requirements for Working with VLab

17.10.1 Requirements for Working with VLab

NOTICE: If you do not have VLab-Digitzer, this menu topic CANNOT BE USED.

Xi-Paint identifies and can use VLab versions starting from 8.1. Most of the VLab requester is filled with a show box, which shows the actual signal from your digitizer. The number of pictures per second depends on you computer's speed.

1.180 Video Offset

17.10.2 Video Offset

At the right side you'll find several scrollers, with which you can fix different settings concerning your video picture. The first two scrollers "offset left" and "offset top" fix which distance from the left top corner of the video picture should be digitized. This feature allows you just to read some cut outs of your picture to the computer.

1.181 Width and Height of the Picture

17.10.3 Width and Height of the Picture

This sets the size of the digitized picture in points. You can set each value which enables you to define the exact regulation of the digitized cut of the picture.

1.182 Choosing the Input Signal

17.10.4 Choosing the Input Signal

VLab enables you to plug in different video sources (for VLab 2 sources, for VLab Y/C you can have 3). With the scroller "input channel" you can define the input entry signal that should be digitized. The switch "monitor" shows you the video picture in the preview monitor of Xi-Paint. This enables you to check which source you digitize in the moment.

1.183 Grabbing a Video Picture

17.10.5 Grabbing a Video Picture

For doing that, just press "freeze". A new paint window, containing the digitized picture, will be opened, where you can now edit the picture. "Close" closes the VLab requester. To the VLab requester the following menu is assigned:

1.184 VLAB Menu

17.10.6 VLAB Menu

DeInterlace

Shortcut: <right Amiga> <d>

For digitizing fast moving pictures in good quality, Xi-Paint uses the "DeInterlace" method. Call this point if you recognize an intensive half picture alternation as one of your pictures.

VTR

Shortcut: <right Amiga> <v>

If you digitize a recorded picture, it might happen that you lose quality. To get a better result, Xi-Paint offers a special VTR mode, which results in a synchronization while digitizing from a recorded picture.

Mode

Shortcut: none

VLab digitizer supports the European PAL- and the American NTSC- system. To get a correct result, choose the right system from the menu point "mode".

Overview of menu commands

Video			
DeInterlace	A-d		
VTR	A-v		
Modus			

1.185 Palette Requester

17.11 Palette Requester

Shortcut: <right Amiga> <C>

Figure: Palette Requester Icon

Using Xi-Paint's colorbox you can produce each colorhue you want.

Figure: Palette Requester

But because it would be very difficult to choose the desired color from a list of 16.7 million colors, Xi-Paint offers you a working palette with 256 different color hues which can be defined by the user. Changes in the color palette happen totally independent from your painting windows.

17.11.1 Colors for Working

17.11.2 Color Mix Methods

17.11.3 Copy, Changing and Shade

17.11.4 Taking a Color

17.11.5 RGB Triangle by Maxwell

17.11.6 HSV Scheme

17.11.7 Palette Menu

17.11.8 Load

17.11.9 Save

17.11.10 Scheme Menu

1.186 Colors for Working

17.11.1 Colors for Working

Nearly at the lower middle of the color requester you'll find the list of colors you can work with. These are marked by a rectangle. Xi-Paint always shows 64 colorhues at one time, the other one will be shown if you move the scroller on the right side. To define a

color just click the desired rectangle and then generate the color by using the scrollers in the top half of the requester. You can use three different color mix methods:

1.187 Color Mix Methods

17.11.2 Color Mix Methods

The best known method is surely the RGB-process which calculates the colors by additive color mixing. Xi-Paint also supports the HLS method and the CMKY method. They are not as well known as RGB, but highly regarded by DTP users and artists. Do not forget to press "assign" after having chosen a color, otherwise Xi-Paint won't use your new color, even if it's already shown in the color requester. You need not click "assign" after the definition of each color, just press it after you have finished all of your definitions.

1.188 Copy, Changing and Shade

17.11.3 Copy, Changing and Shade

Xi-Paint offers three more features for the color requester. The first one is "copy", which allows the duplication of an existing color. Click the first color, press "copy" and click the colorbox, the "new" duplicate color should appear. "Change" allows you to exchange two colors. This is done in the same manner as by copying. "Shade" is a very special feature, which allows you to automatically generate a shade between two colors. The number of steps can also be defined. The only limit is the number of colors in the palette. But nevertheless this should be more than enough for most of your projects. To generate a shade, press the "start"color, then click "shade" and then click the "end"color. The in between colorboxes will be filled with the defined shade.

1.189 Taking a Color

17.11.4 Taking a Color

You can also choose a color directly from a paint window. First click the colorbox to which the color should be assigned. Then click the selected window. Press <#> and then click the desired color point in the window. The colorhue will automatically be assigned to the colorbox.

The color requester also "owns" three sub requesters which offer you more possibilities for the choice of a color. You can reach this sub requester using the switchers right beside the scrollers in the top

half of the color requester. By clicking one of the following windows will open:

1.190 RGB Triangle by Maxwell

17.11.5 RGB Triangle by Maxwell

Figure: RGB Triangle

This triangle contains all possible colors. The basic colors (red, green, blue) can be found in the three corners. You can choose a certain color by clicking on it. The fine tuning can be done by the scrollers in the color requester.

1.191 HSV Scheme

17.11.6 HSV Scheme

Figure: HSV Scheme

This window contains two shades. One of them runs to black, the other to white. Choose the desired hue by clicking. Fine tuning can be done by the scrollers.

1.192 Palette Menu

17.11.7 Palette Menu

17.11.8 Load

17.11.9 Save

17.11.10 Scheme Menu

1.193 Load

17.11.8 Load

Shortcut: <right Amiga> <l>

This feature can load a saved palette which won't have any influence upon the already completed parts of a painting.

1.194 Save

17.11.9 Save

Shortcut: <right Amiga> <a>

This features allows you to save the actual palette. So you can at any time recall a previously used palette.

1.195 Scheme Menu

17.11.10 Scheme Menu

In this menu you can choose which one of the color mix methods the color requester should use. You can choose between RGB (<right Amiga> <r>), HSL (<right Amiga> <h>) and CMYK (<right Amiga> <y>). Depending to your choice the look of the colorrequester will change.

Overview of the menu commands

palette		Scheme	
load	A-l	RGB	A-r
save	A-s	HSL	A-h
save_as...	A-a	CMYK	A-y

1.196 Macros

17.12 Macros

menu: others/macro

Xi-Paint's macro function is not really a requester. It enables you to automate recurring routines.

17.12.1 Macros Using AREXX

17.12.2 Recording Macros

17.12.3 Playing a Macro

1.197 Macros Using AREXX

17.12.1 Macros Using AREXX

AREXX is supported by Xi-Paint, and enables you automate some routines and to produce completely new options. Unfortunately you'll need some experiences in programming and in working with AREXX. Many users may not be interested in this feature. That's why Xi-Paint offers a very comfortable solution to you: Macros, which are nothing more than working steps, are recorded by - Paint and can be reproduced whenever you want. Xi-Paint itself stores each Macro as an AREXX script, which means that you can record some basic working steps by Macro and later refine them by AREXX.

1.198 Recording Macros

17.12.2 Recording Macros

```
menu: start....  
shortcut: <right Amiga> <m>
```

To produce a macro you have to record the steps. Xi-Paint records them step by step and defines a macro. To start recording, call the corresponding feature of the menu. A window, which informs you about recording, will open. After having finished the input of the steps which should be contained by the macro, click "finish". A standard file requester will open and you can set the name under which your macro should be stored.

1.199 Playing a Macro

17.12.3 Playing a Macro

```
menu: perform ...  
shortcut: <right Amiga> <u>
```

After recording a macro, you can play it as often as you want. For doing that call the corresponding menu point. A standard file requester will open and you can choose the desired macro by mouseclick. The chosen macro will be loaded and completed.

1.200 Mask requester

17.13 Mask requester

menu: mask....
shortcut: <right Amiga> <M>

Figure: Mask Requester Icon

This requester allows you to ban certain colors of a painting. That's important for getting certain cut outs of a project or just to manipulate certain parts. You'll always need masks for blocking certain parts of a project from manipulation.

Figure: Mask Requester

17.13.1 Mask for Excepting Certain Motives

17.13.2 A color

17.13.3 Colorarea

17.13.4 Colormatrix (CLUT)

17.13.5 Saturation

17.13.6 Contrast

17.13.7 Addition of Several Masking Steps

17.13.8 Manipulation of Alpha Masks

1.201 Mask for Excepting Certain Motives

17.13.1 Mask for Excepting Certain Motives

If you want to color the background of a flower it will be very difficult to take off its outline and to fill the background manually. Xi-Paint enables you to mask the flower and also to color your background by putting a colored rectangle in front of your flower. The most important settings are fixed in the menu "Way of Masking".

1.202 A color

17.13.2 A color

menu: a color
shortcut: <right Amiga> <o>

The easiest way of masking is to ban just one color. You set your color with the "support color" by the scroller beside it. The pos-

sible values go from 1 to 255 and represent each a color of your colorrequester. To mask a color just set the "support color" scroller to the number of the corresponding color box. To get the exact color it's recommended to pick it directly from the paint window. (Activate the window, press <#>, click the desired colorpixel)

1.203 Colorarea

17.13.3 Colorarea

menu: colorarea
shortcut: <right Amiga> <m>

You may need to mask more than one color. That's why Xi-Paint also allows a banning of similar colors, starting from the "support color". The support color is set in the same manner as it is for just one color. Try to find the best representative of your colors, the best one would be one of the middle of the area. By using the scroller "+/ degrees in color circle" you can set the difference between the support color and the other colors to be masked. Xi-Paint will show you the well known color circle, with each of the basic colors 120 degrees distance from each other. In between transitions between R, G and B. By help of "+/ degrees in color circle" you can set which section of the circle should be masked. The bigger your choice, the more colors will be masked.

1.204 Colormatrix (CLUT)

17.13.4 Colormatrix (CLUT)

menu: color matrix
shortcut: <right Amiga> <m>

Sometimes you'll have to mask colors which are not near each other in the color circle. That's why Xi-Paint offers you the ability to use the color matrix. You mark a rectangular area of your picture and the colors it contains will be masked. But you can also set divergences. The necessary steps are:

First you set the size of the rectangular area which should be masked. Use the scroller "CLUT sides", with which you can set the rectangle size between 1 and 20 color points. Now press "Take CLUT". Now activate your paint window - a rectangle with the set side length will stick on your mouse pointer. Now click the part of your painting which contains most of the colors you want to mask. That's how you can choose a variety of different colors to be masked.

1.205 Saturation

17.13.5 Saturation

menu: saturation

shortcut: <right Amiga> <s>

Sometimes you may want to mask the most garish color of your object. But colors can also be masked by their saturation. First define at "one color " a "support color". This will not set the color itself, but its saturation. By using the scroller "+/ saturation", which can be set between 0 and 127, you can define how much the colors to be masked (now saturations) are allowed to differ from the support color.

1.206 Contrast

17.13.6 Contrast

menu: contrast

shortcut: <right Amiga> <c>

Contrast is set in the same manner as saturation. In this case the settings will be fixed using the scroller "+/- contrast".

The mask requester also contains some other important features. "Delete mask" deletes the actual mask of your paint window. The setting of the manner of masking and the area to be masked are not enough for banning the desired areas. First you have to click "add". Doing this enables you to define masks as complex as you want.

1.207 Addition of Several Masking Steps

17.13.7 Addition of Several Masking Steps

By clicking "add" - fixed settings will be added to an existing mask. This way it's possible to create several masks in different worksteps by using different methods. You can use for one area colorarea for masking, for another one color matrix or saturation. If these areas cover each other you need not worry. "Show" is a special feature. If you click it, a window with the same size of your paint window will open and will show the actual mask in grey color.

Black points mean that this area does not belong to the mask. If you want, it's possible to save the contents of this special window for using it for another project or for anything else. The switch "mask on color" / "paint on color" is also very important. It fixes

if all points belonging to the mask (mask on color) or all points NOT belonging (paint on color) should be banned. If you make a mistake and choose the wrong setting, you just need to use "inverse" (<right Amiga> <v>), which inverts the mask. To activate a defined mask for a certain window, use the on/off switch "switch on mask". "Close" closes the mask requester, but the mask settings are still active.

1.208 Manipulation of Alpha Masks

17.13.8 Manipulation of Alpha Masks

Xi-Paint even offers a tool for manipulation of alpha masks. With "maximum mask" the maximum RGB value of each pixel will be taken and written to the alpha channel. "Minimum mask" takes the minimum RGB value of each pixel. "Inverse" generates the reciprocal value, a "negative" of your mask will be produced. If your mask is too weak, "double alpha value" might be helpful. Values over 255 will become 255. "Halve alpha value" halves the value, values below 0 become 0. "Over take mask" is something special. It allows you to take the alpha mask of another project or another mask into your actual paint window. A list window will open from which you can choose the "from" mask.

Overview of menu commands

Way of masking		Mask operation	
one color	A-o	inverse	A-v
color matrix	A-m	maximum mask	A-a
color area	A-n	minimum mask	A-i
saturation	A-s	halve alpha value	A-h
contrast	A-c	double alpha value	A-d
		take mask over	A-s

1.209 Pen Requester

17.14 Pen Requester

menu: pens....
 shortcut: <right Amiga> <P>

Figure: Pen Requester Icon

This requester fulfills two tasks. It generates the most important basic pens and also offers management of several pens. It looks similar to the brush manager and also offers similar functions. The

16 rectangles can contain 32 pens, by using the scroller 16 are shown at one time.

Figure: Pen Requester

- 17.14.1 Pen Preview
- 17.14.2 Generate a Pen
- 17.14.3 Square Pens
- 17.14.4 Circular Pens
- 17.14.5 Different Kinds of Airbrushes
- 17.14.6 Unicolor Circular Brushes
- 17.14.7 One Point Brush
- 17.14.8 Pen Menu

1.210 Pen Preview

17.14.1 Pen Preview

To choose a pen just click on it. As in the brush manager, the pen manager tries to use the whole area of the preview boxes. This means that the pens might lose their proportion. That's why the real size of each pen is shown in the top right corner.

1.211 Generate a Pen

17.14.2 Generate a Pen

For automatic generation use the button "generate pen ". If you click it a window will open which lets you insert the most important settings for your pen. Before generating a pen choose the place of the pen requester - where the new pen should be put. Otherwise the selected pen will be overwritten.

Figure: Generate Requester

The first setting concerns the size. Values between 1 to 100 are possible. For a rectangular pen this value means the length of a side, for a circular pen it means the diameter.

1.212 Square Pens

17.14.3 Square Pens

"Square" generates square pens. The only necessary parameter is the size, because this kind of pen will be generated in one color.

1.213 Circular Pens

17.14.4 Circular Pens

For circular pens the generation of airbrushes is also possible. Set the size the same way as above. The basic of the generation of an airbrush is a variable curve, which is shown in a special window you can call with the button "generate curve".

1.214 Different Kinds of Airbrushes

17.14.5 Different Kinds of Airbrushes

The appearance of the airbrush should be set by this curve. Imagine that a peak of the curve means a light brightness and a very flat part of the curve means that the airbrush becomes darker and darker. If you feel puzzled, just try it.

Figure: Curve Requester

The curve can be manipulated by two scrollers. One contains a value area between 1 and 100, the other one contains an area between 1 and 400. The first (top) scroller allows you to influence the margin area of your airbrush (should the airbrush become completely dark or just a little bit darker). The second (bottom) scroller influences the steepness of the curve, which means how fast the shade from light to dark should happen. Small values will give a flat curve, big values mean a steep curve.

1.215 Unicolor Circular Brushes

17.14.6 Unicolor Circular Brushes

You'll need them very often and can produce them by airbrushing. Just set the top scroller to "1". The pen will be generated with one steady bright color.

1.216 One Point Brush

17.14.7 One Point Brush

You need not generate it on your own. Just press <:>, which generates automatically a one point brush and overwrites it with the actual pen in the pen requester.

The menu for the pen requester contains some additional features for pen management:

1.217 Pen Menu

17.14.8 Pen Menu

Swap to disk

shortcut: <right Amiga> <w>

This is the same features as described for the brush manager, which causes the same effect for the pen.

Refresh

shortcut: <right Amiga> <f>

This is also the same feature as for the brush manager and it also causes the same effect (on the pens).

Delete

shortcut: <right Amiga> <D>

This is the same feature for the pen manager as it is explained for the brush manager.

Delete Pen

shortcut: <right Amiga> <x>

This feature allows you to delete selected pens but to keep the other ones, which may be recommended because of the space they need on your harddisk.

Overview menu commands

pens		
Swap to Disk	A-w	
Refresh	A-f	
Delete	A-D	
Delete a pen	A-x	

1.218 Zoom Requester

17.15 Zoom Requester

menu: zoom
 shortcut: <right Amiga> <Z>

Figure: Zoom Icon

Xi-Paint offers a variable use of the magnifier. The magnifying factor can be freely chosen and it's even possible to scale down your object.

17.15.1 Enlarging a Part of the Project

17.15.2 Scaling Down a Part of the Project

17.15.3 One Magnifier for Each Worksheet

1.219 Enlarging a Part of the Project

17.15.1 Enlarging a Part of the Project

The available enlarging factor can be set between 1 (1:1) and 64 (64:1). Set this factor by using the scroller in the zoom requester. The magnifier will open its own window. Therein the size can be set using the zoom requester and its input boxes "width" and "height". But notice that even this magnifier window needs RAM!!! Corresponding to the chosen factor, a variable sized rectangle for cutting out the desired section will be shown. The bigger the chosen factor, the smaller the rectangle. It's possible to work simultaneously in both of the windows. Each change will be shown in both windows.

1.220 Scaling Down a Part of the Project

17.15.2 Scaling Down a Part of the Project

This is an exciting new feature!!! This feature is especially interesting if you want to manipulate oversized projects. It allows you to show the whole oversized project (scaled down) on your screen. The project can be scaled down up to (1:64). That's possible only if this step makes sense. It won't be possible to show a 320x200 project scaled down by the factor 20. Xi-Paint will ignore this command which would make your painting sized 16x10 points. Scaling down will not show you a rectangle to choose the desired section. It opens a window which is sized exactly to contain the scaled down picture.

1.221 One Magnifier for Each Worksheet

17.15.3 One Magnifier for Each Worksheet

Xi-Paint offers you for each worksheet your own magnifier in case you'd like to manipulate several projects at once. If you open a new magnifier, the old one will close. This is done to prevent confusing the user.

1.222 Layer Requester

17.16 Layer Requester

menu: layer ...
shortcut: <right Amiga> <E>

Figure: Layer Requester Icon

Using this feature, very interesting project manipulations become possible. This is easy and intuitive, as you already know from -Paint. With these layers you can produce results which are perfect for professionals.

Figure: Layer Requester

17.16.1 The Two Lists of the Layer Requester

17.16.2 Fixing the Order

17.16.3 Generating a Picture Composition

1.223 The Two Lists of the Layer Requester

17.16.1 The Two Lists of the Layer Requester

The left list contains all shown paint windows, with the right one you can mix up the desired projects. Each layer is made from two graphics. The first one offers its brightness, the second one its color information. You can also add other projects, on which mask the selected information depends. The order of the graphics can be set in the "layer" list, to which you can copy as many entries from the project list as you want. This happens by clicking the desired entry of the project list once and pressing "add" afterwards. The new entry will appear in the layer list. It's also possible to copy one and the same graphic several times. File names (without path) will be used as names for the entries, or if there is none, the standard name "project X". The different projects you use for a layer need not be same size. The result will always be sized as the largest of the chosen objects.

1.224 Fixing the Order

17.16.2 Fixing the Order

Xi-Paint also allows a later re-ordering of your list. For that use the four buttons right beside the text "order". They are for moving the different entries in the list. This command concerns the last clicked line, which is highlighted. By "O" ("very top") the actual entry will be put to the top of the list. "U" ("very bottom") will put the chosen entry to the bottom. To highlight another entry, use the two other buttons. If you've made a mistake and have chosen a project for the layer list you don't want, click this entry and press "del" button.

1.225 Generating a Picture Composition

17.16.3 Generating a Picture Composition

After producing the layerlist, the new graphic is ready to be generated. This happens by "show". Click it and a new worksheet with the new graphic will open. Depending upon your processor, this might need some time. The new project can be manipulated like any other independent project. The composition result can even be used as a layer itself. There are no menus assigned to the layer requester, because each setting can be changed by the shown buttons.

1.226 Chapter 18

Chapter 18

Paint Modes

Xi-Paint offers you a lot of painting possibilities, which can all be found in the menu "paintmode". The setting of the paint mode is completely independent from the paint tool in use and is also unaffected if you have chosen either a brush or a pen. While using brushes their outline will be used for applying the various paint modes.

- 18.1 Solid
 - 18.2 Background
 - 18.3 Shade
 - 18.4 Cycle
 - 18.5 Smoothing
 - 18.6 Smear
 - 18.7 Tear
 - 18.8 As-it-is
 - 18.9 Inverse
 - 18.10 Color Exchange
 - 18.11 Brightness Exchange
 - 18.12 Saturation Exchange
 - 18.13 Darken
 - 18.14 Brighten
 - 18.15 Saturation +
 - 18.16 Saturation -
 - 18.17 Color Degree
 - 18.18 Contrast +
 - 18.19 Contrast -
-

1.227 Solid

18.1 Solid

menu: solid
shortcut: <right Amiga> <1>

Xi-Paint activates "solid" after being started. Even if you choose a brush it will be shown in the activated color.

1.228 Background

18.2 Background

menu: background
shortcut: <right Amiga> <2>

This feature allows you to "trace" parts of a "behind placed" project. Of course you need not place the background picture exactly behind your project. Xi-Paint offers you special features to do so. You can assign to each project any background you want. The size is not important. The background project can be sized larger or smaller. But notice that you just can choose ONE picture as background. Activate the project you want to use as background.

Then choose the menu feature "H-window?" (<right Amiga> <g>). The feature will be marked and the chosen window can now be used as background. It can be used as background until you close the background window or until another project is defined as background.

If you manipulate a project to which you have assigned a background, notice that you CAN'T paint in another window. In this case nothing will happen and you need to deactivate "background" first.

1.229 Shade

18.3 Shade

menu: shade
shortcut: <right Amiga> <3>

By using shade you can get wonderful effects. For doing so activate "shade". The defined shade (2 point to 5 point) will be used, independent of the chosen tool. Shade needs a lot of work even from a very fast Amiga, so take care to choose a 1 point pen to fill bigger areas with shade. To get some special effects. look in the tutorial part of this manual. If you are not sure if Xi-Paint is still working

or if your computer crashed, just press <esc>. A window, which shows you the completed work, will appear.

1.230 Cycle

18.4 Cycle

menu: cycle
shortcut: <right Amiga> <4>

This causes a repetition of a special color combination, which has been set in the cycle requester. After having been activated, "cycle" influences each paint operation regardless of the chosen tool. Regarding the time necessary, refer to "".

1.231 Smoothing

18.5 Smoothing

menu: smooth
shortcut: <right Amiga> <5>

Smooth tries to paint smooth transitions instead of sharp edges. If you try to use it in the middle of a unicolored area, nothing will happen because an area can not become smoother.

1.232 Smear

18.6 Smear

menu: smear
shortcut: <right Amiga> <6>

By using smear the colors and outlines of your project will be merged. For this feature it's recommended to use freehand tools, otherwise "smear" will not cause real effects. A simulation of the wet watercolor effect in which colors run into each other is not possible to produce with this feature.

1.233 Tear

18.7 Tear

menu: tear
shortcut: <right Amiga> <7>

Do not confuse this feature with "smear". "Tear" is a completely different task. It causes the color located under the bottom of a brush to be shown, while moving the mouse, at the next position (while using big brushes the mouse pointer's position will be taken).

For this feature it's also recommended to use freehand tools with very small brushes. Otherwise the selected color may cover its whole environment. You can imagine how it would look - imagine sticking your finger into fresh oil paint and moving this finger into another color.

1.234 As-it-is

18.8 As-it-is

menu: as it is
shortcut: <right Amiga> <8>

Until now the outlines and area of brushes/pens has been used to cause special effects. If you want to take a brush for copying parts of a project, use the paint mode "as it is". The chosen brush will be inserted 1:1 into your new project. This mode can be used in common cases for brush manipulations.

1.235 Inverse

18.9 Inverse

menu: inverse

You'll need this feature just for some special effects. You can cause a total alienation of your project. Just try it to see what it can look like!

1.236 Color Exchange

18.10 Color Exchange

menu: color exchange

This feature allows you to dye an object a different color without changing outlines and contrast. Imagine the effect as looking at the chosen area through a filter. Xi-Paint allows you to set any color any position. For color exchange Xi-Paint will always use the

activated color. Black and white take a special position. They are not affected by "color exchange". Black has no brightness, so it will remain black. White contains each color itself, so it won't be exchanged.

1.237 Brightness Exchange

18.11 Brightness Exchange

menu: exchange brightness

By using this feature you can brighten or darken each part of a project without changing the color. For the value of brightness the brightness of the activated color will be used, that's why it's recommended to choose HSV instead of RGB. It is very difficult to explain this effect, but let's try it out:

Load a project as dark as possible and choose the color white (RGB = 255, 255, 255). Now choose an average sized brush (20x20) and paint by using a freehand tool over your project. It will get the full brightness. If you choose a dark grey (RGB = 50, 50, 50) instead of white, the affected areas will become darker. For this mode each tool can be used, but most time you will use the filled freehand area, the filled polygon or the filled rectangle.

1.238 Saturation Exchange

18.12 Saturation Exchange

menu: Satur. Change

This feature will transfer the saturation of the activated color to you project. To do so it's recommended to use HSV for setting an exact value for saturation. Any paint tool can be used, but it's recommended to use filled objects.

1.239 Darken

18.13 Darken

menu: Darken

Use this tool to darken complete areas of your project (you can set values between 0 and 100

1.240 Brighten

18.14 Brighten

menu: Brighten

Use this tool to brighten complete areas of your project (you can set a value between 0 and 100

1.241 Saturation +

18.15 Saturation +

menu: Saturation +

With this tool you can enrich the saturation of complete areas of your project, even by airbrushing.

1.242 Saturation -

18.16 Saturation -

menu: Saturation -

This tool lowers the saturation of complete areas of your project or bring it by airbrush closer to grey.

1.243 Color Degree

18.17 Color Degree

menu: Color Degree

With this tool you can change the hue values of complete areas of your project. You can also realize rainbow shades by airbrush.

1.244 Contrast +

18.18 Contrast +

menu: Contrast +

Use this tool to raise the contrast of complete areas of your project.

1.245 Contrast -

18.19 Contrast -

menu: Contrast -

With this tool you can lower the contrast of complete areas of your project.

1.246 Chapter 19

Chapter 19

Shortcuts

While most of Xi-Paint is handled with the mouse, for every function a shortcut is available.

Most of the shortcuts are the same as the shortcuts of DPaint.

The only exception are the shortcuts for the brush manipulation. These functions are only accessible via shortcut and not via menu. This is a kind of copy-protection - without the manual you don't know how to handle the brushes.

- 19.0.1 Mirror at the X-axis
 - 19.0.2 Mirror at the Y-axis
 - 19.0.3 Turn Brush 90°
 - 19.0.4 Brush Half
 - 19.0.5 Brush Double
 - 19.0.6 Brushwidth Half
 - 19.0.7 Brushheight Half
 - 19.0.8 Brushsize Individual
 - 19.0.9 Turn the Brush Individual
 - 19.0.10 Maximum Mask for the Actual Brush
 - 19.0.11 Mask a Brush
 - 19.0.12 Switch off Masking
 - 19.0.13 Get Color
-

19.0.14 Get a One Point Pen

19.0.15 Get a New Pen

19.1 Moving the Mouse with Keyboard

1.247 Mirror at the X-axis

19.0.1 Mirror at the X-axis

Key: x

Mirrors the brush around the X-Axis (Horizontal).

1.248 Mirror at the Y-axis

19.0.2 Mirror at the Y-axis

Key: y

Mirrors the brush around the Y-Axis (Vertical).

1.249 Turn Brush 90°

19.0.3 Turn Brush 90\textdegree{}

Key: z

Turns the brush around the Z-Axis (90?).

1.250 Brush Half

19.0.4 Brush Half

Key: h

Divides the brush in half along the X-and Y-Axis.

1.251 Brush Double

19.0.5 Brush Double

Key: H

Doubles the brush along the X-and Y-Axis.

1.252 Brushwidth Half

19.0.6 Brushwidth Half

Key: X

Divides the brush in half along the X-Axis.

1.253 Brushheight Half

19.0.7 Brushheight Half

Key: Y

Divides the brush in half along the Y-Axis.

1.254 Brushsize Individual

19.0.8 Brushsize Individual

Key: %

Opens a window for entering the new dimension of the actual brush. Enter the new values or click on "Draw Size" for drawing a rectangle in the desired dimension. Click on Execute to create the new brush.

1.255 Turn the Brush Individual

19.0.9 Turn the Brush Individual

Key: \$

Opens a new window with a slider to enter the angle of the new brush. Click on "Draw angle" for drawing interactive an angle. Click on Execute to create the new brush.

1.256 Maximum Mask for the Actual Brush

19.0.10 Maximum Mask for the Actual Brush

Key: [

Creates an alpha-mask for the actual brush. Xi-Paint takes the maximum value of the R/G/B-Values and puts it into the alpha-Channel. The paint mode will be changed to alpha.

1.257 Mask a Brush

19.0.11 Mask a Brush

Key: /

Creates an alpha-mask for the actual brush in the actual color (look at the color-requester for the actual color). The paint mode will be switched to "cut-off".

1.258 Switch off Masking

19.0.12 Switch off Masking

Key:]

Turns off the paint-mode "cut-off" or "alpha". The actual brush is painted as a rectangle.

1.259 Get Color

19.0.13 Get Color

Key: #

After hitting this key, Xi-Paint waits for a mouse-click to an actual paint-window to pick the current color. This will be displayed in the color-requester and in the border of the actual paint window.

1.260 Get a One Point Pen

19.0.14 Get a One Point Pen

Key: .

The actual pen will be a one-point pen.

1.261 Get a New Pen

19.0.15 Get a New Pen

Key: .

After hitting this key, you can paint a circle which will be the diameter of the actual pen.

1.262 Moving the Mouse with Keyboard

19.1 Moving the Mouse with Keyboard

Key	function
<Amiga> <Left>	Mousepointer 1 Pixel to the left.
<Amiga> <Right>	Mousepointer 1 Pixel to the right.
<Amiga> <Up>	Mousepointer 1 Pixel up.
<Amiga> <Down>	Mousepointer 1 Pixel down.
<Amiga><Shift> <Left>	Mousepointer 60 Pixels to the left.
<Amiga><Shift> <Right>	Mousepointer 60 Pixels to the right.
<Amiga><Shift> <Up>	Mousepointer 60 Pixels up.
<Amiga><Shift> <Down>	Mousepointer 60 Pixels down.
<l-Amiga> <l-ALT>	press left mousebutton.
<r-Amiga> <r-ALT>	press righth mousebutton.
<r-Amiga> <n>	new project
<r-Amiga> <o>	load new file to a new project
<r-Amiga> <l>	load new picture in an old project
<r-Amiga> <L>	load brush
<r-Amiga> <s>	save project
<r-Amiga> <a>	save project with new name
<r-Amiga> 	save picture
<r-Amiga> <Q>	quit XiPaint
<r-Amiga> < >	opens Tool-Requester
<r-Amiga> <C>	opens Color-Requester
<r-Amiga> 	opens Brush-Requester
<r-Amiga> <P>	opens Pen-Requester
<r-Amiga> <G>	opens Grid-Requester

<r-Amiga> <H>	opens Shadow-Requester
<r-Amiga> <Y>	opens Cycle-Requester
<r-Amiga> <S>	opens SystemSetting-Requester
<r-Amiga> <M>	opens Mask-Requester
<r-Amiga> <V>	opens Gradient-Requester
<r-Amiga> <T>	opens Style-Requester

<r-Amiga> <Z>	opens Zoom-Requester
<r-Amiga> <E>	opens Layer-Requester
<r-Amiga> <D>	opens Parameter-Requester

<r-Amiga> <m>	Macro start
<r-Amiga> <u>	Macro execute
<r-Amiga> <f>	Empty Undo-Memory

<r-Amiga> <1>	Paintmode Solid
<r-Amiga> <2>	Paintmode Background
<r-Amiga> <3>	Paintmode Gradient
<r-Amiga> <4>	Paintmode Cycle
<r-Amiga> <5>	Paintmode Soften
<r-Amiga> <6>	Paintmode Smear
<r-Amiga> <7>	Paintmode Tear
<r-Amiga> <8>	Paintmode As-it-is

b	Get rectangular brush
n	Get polygonal brush
N	Get freedraw-brush
x	Mirrors brush at the X-Axis
y	Mirrors brush at the Y-Axis
z	Turns brush
X	Halves brush at the X-Axis
Y	Halves brush at the Y-Axis
Z	Transpose brush
%	Size brush
h	Halfs brush
H	Doubles brush
\$	Turns brush

e	Ellipse
E	Filled Ellipse

r	Rectangle
R	Filled Rectangle
t	Text
T	New Font
p	Polygon
P	Filled Polygon
F	Freedraw filled Polygon
W	Filled Polygon
v	Line
D	Freedraw
q	Curve
d	Freedraw
f	Fill
m	Zoom
a	Lighttable

		k		Clears Project black	
		K		Clears Project white	
		u		undo	
		U		redo	
		Esc		Cancel	
		Alt-y		Flip Picture 0	
		Alt-z		Flip_Picture_90	

		[mask brush with maximum mask	
		/		mask brush with actual color	
]		no alpha mask for brush	

		#		get color	
		.		one point pen	
		,		get individual pen	

1.263 Chapter 20

Chapter 20

The AREXX Interface

All functions of Xi-Paint can also be externally controlled with the script language AREXX. Although some functions are not available from the main menu, if required by the user, they can easily be integrated into AREXX macro menu. Additionally AREXX script enables you to automatically perform tedious picture manipulations automatically, to program self running demos, or effects.

20.1 Table of AREXX-commands

20.2 Description of AREXX-Commands

20.3 Parameter-Tabels

20.3.1 Color Modes

1.264 Table of AREXX-commands

20.1 Table of AREXX-commands

In the following list represents all available Xi-Paint AREXX commands.

Befehl	Param	String	Menu	Key
--------	-------	--------	------	-----

	arc	6	no	yes	yes	
	aslreq	1	no	yes	no	
	beginpoly	0	no	yes	yes	
	box	4	no	yes	yes	
	brushload	0	yes	yes	yes	
	brushsave	0	yes	yes	yes	
	brushturnd	1	no	no	yes	
	brushturnx	0	no	no	yes	
	brushturny	0	no	no	yes	
	brushturnz	0	no	no	yes	
	brushxhalf	0	no	no	yes	
	brushyhalf	0	no	no	yes	
	brushhalf	0	no	no	yes	
	brushdouble	0	no	no	yes	
	brushsize	2	no	no	yes	
	cls	1	no	yes	yes	
	color	4	no	yes	yes	
	cyclemode	5	no	yes	no	
	dline	2	no	yes	yes	
	drawpara	7	no	yes	no	
	edge	1	no	no	no	
	ellips	4	no	yes	yes	
	endfpoly	0	no	yes	yes	
	endpbrush	0	no	yes	yes	
	endpoly	0	no	yes	yes	
	endrex	0	no	no	yes	
	exit	0	no	yes	yes	
	fbox	4	no	yes	yes	
	fellips	4	no	yes	yes	
	fill	4	no	yes	yes	
	fontdpi	3	no	yes	no	
	getbrush	4	no	yes	yes	
	gradmode	3	no	yes	no	
	itext	0	no	yes	yes	
	line	4	no	yes	yes	
	lighttable	0	no	yes	yes	
	maskclut	2	no	yes	yes	
	maskmode	7	no	yes	yes	
	maxmask	0	no	no	yes	
	minipic	1	yes	yes	no	
	picload	0	yes	yes	yes	
	picsave	0	yes	yes	yes	
	pointlayout	3	no	yes	no	
	polymove	2	no	yes	yes	
	polydraw	2	no	yes	yes	
	redo	0	no	yes	yes	
	savemode	2	no	yes	no	
	setfont	1	yes	yes	yes	
	setgrid	5	no	yes	no	
	setmaxmove	1	no	yes	no	
	setpoint	2	no	yes	yes	
	setshadow	3	no	yes	yes	
	text	0	yes	yes	yes	
	undo	0	no	yes	yes	
	version	0	no	no	no	
	vlabdigi	0	no	yes	no	

	vlabinput		3		no		yes		no	
	vlabs cansize		4		no		yes		no	
	vlabdeinter		0		no		yes		no	
	wait		1		no		no		no	

1.265 Description of AREXX-Commands

20.2 Description of AREXX-Commands

In order to easily understand each of the parameters it might be useful to call Xi-Paint and to create an AREXX script with the auto macro function included. To start the macro function use the key combination <Amiga> m.

To start macro recording, execute any menu or drawing command that you want recorded and finish the macro using the <Amiga> m a second time. This will bring up a file-requester (Save the file for example as ram:test).

You may now go and examine your script by leaving Xi-Paint (either by pressing <Amiga M/N> or entering "Quit") and load the created AREXX script into any text editor: 1> ed ram:test It is important to note that Undo steps are NOT recorded! In some of the following examples of AREXX the following two lines may have been omitted, however, they are required for any AREXX script to work:

```
/* REXX-Macro of XiXi-Paint */
address 'xipaint'
```

The first line within the remarks can be any given line. AREXX requires this line to recognize whether it is a valid AREXX script. The second line gives AREXX the information about which program has to work on the following data; in this case Xi-Paint. Having started Xi-Paint you can now return to any Amiga screen by pressing Amiga N %where you can execute the script.

You can start an AREXX Script as follows: 1> rx ram:test

Now something should happen on the screen of the display. The double quotes at the left and the right side of some of the commands ensure that the AREXX commands are correctly read. Under normal conditions they might not be necessary, but to ensure that AREXX finds the correct message port the command "address 'xipaint' " must be put in double quotes. In the case where a transfer string contains negative numbers AREXX will try to calculate two parameters and the parameter list would subsequently be incomplete.

- o arc, 6 Parameter

Draws a Bezier curve with three supporting points. The coor-

dinates are given in the first 6 parameters, X and Y respectively.

Example:

```
'arc 227 89 381 140 272 216'
```

o aslreq, 1 Parameter

Causes Xi-Paint to use the ASL File Requester instead of the built in requester.

Example:

```
aslreq 1
```

o beginpoly, no Parameter

Starts the process of drawing a filled or unfilled polygon, or the cutting of a polygon brush.

Example:

```
/* Automatic generated macro from XiXi-Paint 3.0 */  
address 'xipaint' beginpoly  
'polymove 200 181'  
'polydraw 119 212'  
'polydraw 118 213'  
'polydraw 120 213'  
'polydraw 189 202'  
'polydraw 228 226'  
'polydraw 200 181'  
'endpoly'  
beginpoly  
'polymove 17 8 285'  
'polydraw 106 333'  
'polydraw 172 313'  
'polydraw 184 360'  
'polydraw 178 285'  
'endpbrush
```

o box, 4 Parameter

Draws a rectangle. The first 4 parameters indicate the corner points.

Example:

```
'box' 190 419 232 474
```

o brushload, eine Zeichenkette

Loads a brush.

Example:

```
'brushload' 'pictures/TutEnchS.jpg'
```

- o brushsave, a string

Saves a brush.

Example:

```
'brushsave' 'pictures/TutEnchS.iff'
```

- o brushturnd, one Parameter

Turns the brush with the desired angle.

Example:

```
/* Automatically generated macro from XiPaint 3.0 */  
address 'xipaint'  
'getbrush 142 235 56 29'  
'brushdouble'  
'brushyhalf'  
'brushxhalf'  
'brushdouble'  
'brushhalf'  
'brushsize 41 266 '  
'turnbrushy'  
'turnbrushz'  
'brushturnd' 23  
endrex
```

- o brushturnx, no Parameter

Mirrors the brush around the X-Axis.

Example: look at "brushturnd"

- o brushturny, no Parameter

Mirrors the brush around the Y-Axis.

Example: look at "brushturnd"

- o brushturnz, no Parameter

Turns a brush 90° .

Example: look at "brushturnd"

- o brushxhalf, no Parameter

Halves a brush along the X-Axis.

Example: look at "brushturnd"

- o brushyhalf, no Parameter

Halves a brush along the Y-Axis.

Example: look at "brushturnd"

- o brushhalf, no Parameter

Halves a brush.

Example: look at "brushturnd"

- o brushdouble, no Parameter

Doubles a brush.

Example: look at "brushturnd"

- o brushsize, 2 Parameter

Sizes a brush to the given parameters.

Example: look at "brushturnd"

- o cls, ein Parameter

Clears the actual project in the actual color, black or white.

Kind	Value
20922	Clears in black
20921	Clears in white
20920	Clears in the actual color

Example:

```
cls 20920
```

- o color, 4 Parameter

Determines the colors. The first 3 parameters give the r , g and b value. The last parameter gives the color to be changed, which is valid from 0 to 255.

Example:

```
'color 12 254 242 0'
'color 239 254 14 1'
```

- o cyclemode, 1 Parameter

This mode defines which colors cycling should be used. The

following values are possible: The first value gives the offset of the beginning of color entry. This is a value of 0 to 1999 if you want to use 2000 entries. The second value gives the internal step, also within 0 and 1999. The third value gives the maximum steps. Also from 1 to 2000. The fourth and fifth value are the beginning and end-entry of the color-register.

Example:

```
'cyclemode' 0 0 2000 2 6
```

o dline, 6 Parameter

Is used for drawing a solid line. The only difference to the "line" command is the missing first pixel of the line. Due to this you need to use the "move" command before executing "dline".

Example:

```
'setpoint' 124 62
'setpoint' 124 62
'polymove' 81 81
'dline' 82 83
'dline' 85 90
'dline' 87 101
'dline' 90 110
'dline' 93 117
'dline' 111 123
'dline' 116 122
'dline' 118 120
'endrex'
```

o drawpara, 7 Parameter

Is used for defining the darkness and brightness etc.

Parameter	Value	Limits
1	Brightness	0-255
2	Darkness	0-255
3	Antialiasingfactor	0-255
4	fastfill	0-1
5	keep-mask	0-1
6	Pixel-Current	0-16000
7	1-Pixel-Current	0-16000

o edge, 1 Parameter

the handle is attached to the brush. Usually it is located in the middle. Use this command to change the location of the holding point. The parameters indicate the X and Y values in relation to the upper left corner of the brush. It is easier, however, to use the command "setedge" instead which automatically calculates the coordinates.

Value	Setting
1	left top
2	left bottom
3	right top
4	right bottom
0	middle

Example:
edge 1

o ellipsis, 4 Parameter

Draws an ellipse. The first four parameters indicate the middle point and the radius.

Example:
'ellipsis' 297 305 316 329

o endpoly, no Parameter

Ends a polygon.

Example:
look at beginpoly.

o endfpoly, no Parameter

Ends a filled polygon.

Example:
look at beginpoly.

o endpbrush, no Parameter

Ends a polygonal brush.

Example:
look at beginpoly

o endrexx, no Parameter

Ends an AREXX script, returning to all functions normal paint conditions. This command should be entered after each AREXX script. If you don't do this the Undo will not work properly.

Example:
endrexx

- o exit, no Parameter

Quits Xi-Paint.

Example:

```
exit
```

- o fbox, 4 Parameter

Draws a filled rectangle. The first 4 parameters indicate the corner points.

Example:

```
'fbox' 190 419 232 474
```

- o fellips, 4 Parameter

Draws a filled ellipse. The first four parameters indicate the middle point and the radius.

Example:

```
'fellips' 297 305 316 329
```

- o fill, 4 Parameter

Fills at the given coordinate.

Example:

```
'fill 100 100'
```

- o fontdpi, 3 Parameter

Sets the dpi of a given font. The third parameter switches Antialias on/off.

Example:

```
fontdpi 75 80 0
```

- o getbrush, 4 Parameter

Cuts off an rectangular brush.

Example: look at "brushturnd"

- o gradmode, 3 Parameter

Enters the mode for gradient. The second and third parameter gives the percentage of the fifth point (if chosen).

Mode	Value
1	Horizontal, 2 Colors
2	Vertical, 2 Colors
4	3 Colors, Top two
3	3 Colors, Bottom two
5	4 Colors
6	5 Colors

o itext, 3 Parameter

Gives an interactive string-requester. The string will be converted to a brush.

Example:

```
/* Interaktiver Text */
address 'xipaint'
'itext'
endrex
```

o line, 4 Parameter

Line from x1, y1 to x2, y2.

Example:

```
'Color' 102 102 102 0
'line' 319 140 412 234
```

o lighttable, no Parameter Switches the lighttable on/off

Example:

```
lighttable
```

o maskclut, 2 Parameter Gives the coordinates for the taken CLUT.

Example:

```
'maskclut' 194 144
```

o maskmode, 7 Parameter Switches the mask on/off

Modes:

Parameter	Value	Function
1	0	Don't Paint on mask
1	1	Paint on mask
2	0-255	Mask color-entry
3	0-3600	Hue-of mask
4	0-255	Saturation of mask
5	0-255	Intensity of mask

	6		1-20		Side of CLUT-Square	
	7		0		Mask off	
	7		1		Mask on	

Example:

```
'maskmode' 1 1 10 10 10 10 1
```

- o maxmask, no Parameter

Generates automatically a maximum mask for the actual brush.

- o minipic, one Parameter, a string

Creates a minipic for the desired filename. The first parameter gives the information, if the file (0) is a picture or a font (1).

- o picload, a string

Loads pictures.

Example:

```
'picload' 'pictures/TutEnch.jpg'
```

- o picsave, a string

Saves pictures.

Example:

```
'picsave' 'pictures/TutEnch.iff'
```

- o pointlayout, 3 Parameter

Mode of generating a pen: round(1), squared (0).

The second parameter gives the diameter in pixel. The last parameter says the mode (color-mode) for creating the pen.

Example:

```
pointlayout 0 8 3
```

- o polymove, 2 Parameter Moves the internal cursor for polygonal lines.

Example:

```
beginpoly
```

```
'polymove 186 154'
```

```
'polydraw 121 187'
```

```
'polydraw 164 238'
```

```
'polydraw 163 238'
'polydraw 222 206'
'polydraw 186 154'
'endpbrush'
'setpoint 221 156'
```

- o polydraw, 2 Parameter Draws a polygonial line or cuts a polygonial brush.

Example: look at "polymove"

- o redo, no Parameter Makes a redo.

- o savemode, 2 Parameter Gives the save-format (table below). The second parameter says the deepness (24 bit or 32 bit).

Value	Fileformat
0	IFF-DEEP
1	IFF-ILBM
2	PBM
3	PPM
4	SUNRASTER

Example:

```
'savemode' 4 32
```

- o setfont, a string, 1 Parameter Loads the desired font.

Example: look at "text"

- o setgrid, 5 Parameter Switches on a grid in the desired size (width/height, Offset x/y). The last parameter switches on(1) or off(0).

Example:

```
setgrid 3 3 0 0 1
```

- o setmaxmove, ein Parameter Gives the maximal size of a full displayed brush.

Example:

```
setmaxmove 50000
```

- o setpoint, 2 Parameter To set a point at the given coordinate.

Example:

```
'setpoint 145 184'
```

- o setshadow, 3 Parameter Gives the direction of the shadow. The third parameter switches the shadow on (1) or off(0).

Example: look at "text"

- o text, no Parameter, string Makes from the given string a brush.

Example:

```
'setfont' 60 'FONTS:CGTriumvirate.font'  
'setshadow' 10 '-10' 1  
'text' 'Der Versuch'  
setpoint 10 30
```

- o undo, no Parameter Makes an undo.
- o version, no Parameter Versionnumber of Xi-Paint.

Example:

```
/* gets the version from Xi-Paint */  
options results  
address 'xipaint' 'Version'  
say result 'version'
```

- o vlabinput, 3 Parameter Sets the VTR-Mode (0/1), PAL/NTSC (1/0) and the Input-Channel of the VLab-Digitizer.

Example:

```
vlabinput 0 1 2
```

- o vlabscansize, 4 Parameter Defines the digitizer areas of VLab. The four parameters specify the leftupper corner, the width and the height.

Example:

```
vlabscansize 0 20 720 600
```

- o vlabdigi, no Parameter Digitizes a picture using the VLab digitizer.

Example:

```
vlabgrab 0 20 720 600
```

- o vlabdeinter, no Parameter Deinterlaces the actual picture.

Example:
vlabdeinter

- o wait, ein Parameter This command suffices to perform a waiting loop during a demonstration. The parameter gives the time in 1/50 of a second Xi-Paint should wait before the next action can be started.

1.266 Parameter-Tables

20.3 Parameter-Tables

The following tables give the values for individual operations stated in the AREXX chapter. They are not necessary, however, during normal operation of Xi-Paint.

20.3.1 Color Modes

1.267 Color Modes

20.3.1 Color Modes

The following table lists the different color modes with their according values. They have to be stated with almost every drawing tool, since they define the drawing mode.

Colormode	Value
Solid	1
Background	2
Gradient	3
Cycle	4
invers	5
Smooth	6
Smear	7
Tear	8
Huechange	9
Brightnesschange	10
Saturationchange	11
As-It-is	12
Darken	13
Brighten	14
Saturation+	15
Saturation-	16
Move Hue	17

Contrast+	18	
Contrast-	19	

1.268 Chapter 21

Chapter 21

VLab

This chapter gives you some characteristics of the implementation of the real time video digitizer from MacroSystem. You can only call up the VLab menu if the version of the VLab library is at least release 7 or higher. Since Xi-Paint does not use all the features of VLab, some adjustments can only be performed via special VLab software. To do so start the VLab software before Xi-Paint and adjust the desired parameters. Afterward close VLab and start Xi-Paint. The adjustments made to the VLab will be maintained. In future versions of Xi-Paint the digitizer will be better implemented.

1.269 Chapter 22

Chapter 22

Load- and Save-Functions

In an effort to provide as much functionality as possible Xi-Paint supports several graphic formats, each of them having advantages and disadvantages. These formats for loading and saving images and brushes are depending on the version of the multipic.library, for now there listed be low:

- o IFF-DEEP
 - o IFF-24Bit
 - o IFF-8Bit
 - o Amiga-IFF (also HAM)
 - o PPM
 - o JPEG
 - o Xi-Paint-Format (old)
 - o IFF-YUV
-

Save:

- o IFF-24Bit
- o PPM
- o BMP
- o IFF DEEP

The following is a description of the individual formats:

IFF-24Bit: Although a bitmap technology for 24 bit pictures is not particularly useful, this format still represents a kind of standard. It is supported by most programs running with 24Bit. It represents an expansion of the Amiga IFF Standard to more bit planes. It also compresses, but as well as the JPEG Algorithm. Unfortunately the bitplane concept causes a relatively slow loading since the color value of each pixel has to be retrieved from the different picture planes.

IFF-8Bit: For pictures containing only shades of grey a color-depth of 8 Bit is sufficient. Such pictures often occur with DTP applications, when no color is required. Xi-Paint maintains the pictures according to their palette, i. e. color pictures can also be loaded with up to 256 colors. When saving you can choose in the system menu which of the 3 color planes you want to save as 8 Bit. The picture's palette is then a palette of grey shades.

Amiga-IFF: In order for you to use your old pictures created with DPaint Xi-Paint is able to load all Amiga formats including HAM and ExtraHalfBright. Using AREXX you can determine with 'loadalign' and 'loadaspect' how this is done. 'loadaspect' can be set to 1 and then adapts the pixel ratio of the Amiga resolution to the display buffer. 'loadalign' aligns the picture either to the left or the right side or adjusts the Amiga picture to the size of the display buffer. Further information on these commands is supplied in the AREXX chapter of this manual.

PPM: This originates from UNIX. It was implemented for importing pictures of other work stations.

JPEG: The JPEG format is standardized as well. It is not a problem to transfer JPEG pictures from other computers. Another advantage of the JPEG formats is the small size of a picture on the hard disk. Picture compression is performed according to a specific algorithm, which, unfortunately, does not work without losses. In the system menu you can choose

the quality of the image to be saved in JPEG format. The value 100 results in almost no losses, whereas a picture save with the value 1 is completely unrecognizable. The smaller the value the smaller the file on the hard disk. You have to try to find the appropriate compression degree for your application. If pictures are loaded which have been extremely compressed it is advisable to use smoothing (also available in the system menu). In contrast to the other formats loading and saving of highly compressed pictures takes a long time. Since the uncompressed picture must be stored as an intermediate file, you must enter a path for this file in the tool types.

1.270 Chapter 23

Chapter 23

The Future

The next version of Xi-Paint will have animation-features, an built in raytracer, more and enhanced brush-manipulation and and and

Figure: Ice-Cream

Figure: Ring

1.271 Chapter 24

Chapter 24

Copyrights

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