

THE  
ARTIST II





# **The Artist II**

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## **The Artist II -Manual**

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## **WARNING**

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# Foreword

## 128/Plus 2 Edition

### Loading the 128/Plus 2 version of 'Artist II'

This version (like its sister version for the 48K Spectrums) actually consists of several separate programs; however unlike the 48K version this version has the **'PageMaker'** section **Artist II** program. The other two programs on the tape are the **'Sprite & Font Designer'** and the **'Screen Compressor'** - both programs being identical to those in the 48K suite.

### Using the PageMaker system in the 128/Plus 2 version

You should carefully read the relevant sections of this manual covering the use of the **Artist II** in general; this version of the program is essentially identical in all respects except for the operation of the PageMaker option.

Once the **Artist II** is loaded you will be able to pull-down the menu in the top left of the screen and see that one of the options is 'Pg-MAKER'. Selecting this option (see elsewhere in this manual for keyboard, joystick or mouse control of the cursor, selection of menus, etc) will take you to another menu giving 8 options. In the PageMaker mode you are effectively working on 8 screen-fulls of graphics and text. These 8 screens are laid out as 2 screens wide by 4 screens high, and roughly correspond to an A4 area of print when a 1-to-1 print is made to a standard printer. The PageMaker is thus ideally configured for the creation of A4 pages mixing text and graphics in a professional 'print shop' manner. It is ideally suited, therefore, for use in making reports, club magazines, mock-ups of circulars, and so forth.

#### PageMaker Menu Options

Option 1: This option allows you to 'Grab' an area of the 8-screen big page and transfer it to the main **Artist II** screen. To select the area of screen you wish to 'grab' by using the keys Q,S,I and O to move the screen around within the 8-screen sized 'page'. You can vary the speed of moving around the page area by holding down either the Caps Shift or Symbol Shift keys at the same time as the other keys thus creating steps of 4 and 8 character movements respectively. Once grabbed and back in the **Artist II**, this screen can be manipulated and worked on in the same way you work on any screen of graphics using this powerful graphics package. Note that a 'G' will appear on the right hand side of the status line which appears on top of the page in the PageView mode (which is automatically entered when you select either this option or option 2).

By the way, note that you can place this status line anywhere in the screen display area by using the keys 1,2,3 or 4 to move it around.

Option 2: This is effectively the reverse of option 1, and it inserts a screenful of graphics from the **Artist II** screen into the page. Note that in this mode the letter 'I' appears in the right hand side of the status line indicating that 'insert' mode has been selected.

Option 3: This option clears the entire page and you will be asked to confirm this option to avoid choosing it in error.

Option 4: This displays a compressed view of the entire page to allow you to gain an overview of the page layout.

Option 5: This option allows you to load in a **The Writer** text file. Note that this file must not be more than 8K long - if it is then this program will display an error message.

Option 6: Selecting this option will load an entire page .

Option 7: This option allows you to save an entire page to your currently selected medium. You are limited to only 9 characters for the name you give to the page you are saving. The PageMaker program will save the page as 4 separate parts, appending a 0 through to a 3 to the end of the name you have given the page for each of the 4 parts of that page. Note that each page will take up 48K, so please do ensure that you have sufficient space on your storage medium prior to selecting this option.

When you are saving a page to tape you will have to press a key to start saving of each of the individual 4 parts. Saving is fully automatic, though, to either microdrive or disc.

Option 8: This copies your page to the printer.

### **Setting up your printer/interface**

You should set up your printer/interface before loading in the program (or by breaking back into BASIC after loading - see BASIC option in first menu) and as an integral part of the set-up you should ensure that your printer is receiving NO line feeds (LFs) and no translation of any kind (it should be sending ALL control codes to the printer). If you have any doubts about this, then please refer to your printer and interface manuals.

### **Inadvertant return to BASIC**

In this version of **Artist II** you can simply enter RUN should you ever return to BASIC for any reason (intentionally or in error).

## USING THE PAGEMAKER OPTION

The PageMaker option has been designed to be flexible in the uses to which you may put it. You may wish to explore the world of 'Desk Top Publishing', mixing both text and graphics in a professional manner, or you may wish to use the 'page' as a larger graphics workspace creating larger graphics of up to 8 screens in size.

**'Desk Top Publishing':** To use the PageMaker/Artist II combination for page-make-up is very easy. The PageMaker program assumes that you are creating the text on SofTechnics' **The Writer** package. As detailed more fully elsewhere, you should essentially create your basic page layout using **The Writer** bearing in mind that you have a single (albeit large) page of a maximum of around 96 lines of 64 column text for a 'page'. Note that the PageMaker will assume that your text file was created in the 64 column mode (right margin set to 63), and that the entire file is no more than 8K .

You should create your page of text leaving spaces in the 64 by 96 area where you envisage the graphics to be placed, or where you want there to be space on the final page. Remember that you may not wish to use the entire 64 column width or the entire 96 row height - that might create a rather crowded looking page. Having created your text file for a page, you then load it into the PageMaker program by selecting option 5 in its menu. Once loaded in you are then able to merge graphics with your text for full effect.

There are two basic methods you can use to place graphics in with your text. If the area you have left within the page is at least a full screen in size (obviously at least one eighth of the total page area), then you can simply create your graphic in the main **Artist II** screen area and then chose option 2 in the PageMaker's menu to insert the graphics into the page. You can then simply line up where in the page the graphic is to be inserted using the Q,S,I and O keys as mentioned above.

Alternatively if you wish to add a graphic area to your page which is less than a full screen then you may wish to use the following method: 'grab' the area of the page you wish to merge graphics into by using option number 1 in the menu. Again you can move the screen area being grabbed around the general page area using the Q,S,I and O keys. This will bring the area of the page back into the **The Artist II**'s main graphic editing area. Once there you can use **The Artist II**'s 'insert' option in the right hand pull down menu (marked WINDOW). As described elsewhere in this leaflet, you will have to define a window to the size of the are you wish the graphic to occupy, and then by using the 'insert' option you can load in an entire screen of graphics but scroll around within that screen until you have the specific area you wish to 'cut & paste' into the main editing area.

Once you have merged the graphics into the text you then simply need to select the Pg-MAKER option again from the left hand menu (STORAGE) and this time select menu option 2 to insert the screen back into the page. If you simply do this then the screen will be placed back exactly where you 'grabbed' it from -- which in general is exactly what you will wish to do. However, you can of course use the movement keys to place the screen back elsewhere within the 8-screen page area.

### **Creating Headings etc.**

It is possible to use the **Artist II**/PageMaker combination to create professional looking newspaper like pages with headings, subtitles, etc. To achieve this you will have to create the headings etc within the **Artist II** main editing screen, and then you simply have to insert them into you main page area by using either of the above methods (direct insertion or grab, modify and re-insert).

It is also very easy to create larger versions of text within the page, or indeed to create expanded font headings from within **Artist II** itself. To do this you simply either have to 'grab' a piece of text from your main page, or create some text using the text option within the main graphics editing screen (the 'A' icon at the bottom of the screen). Once created this text can then be shrunk or expanded - both vertically or horizontally - by using the 'SCALE' option within the 'WINDOW' menu (having first created a window around the text in question).

### **Alternate fonts & character sets**

The PageMaker has five fonts - the first three of which it copies from **The Artist II**, and these are thus redefinable. The PageMaker makes use of 'control codes' within the text file generated by **The Writer** to tell it what font blocks of text should be in, whether the text should be inverted and whether or not it should be underlined.

The control codes are in the form of a graphic accessed within **The Writer** by pressing a number key when in graphics mode. G1 (graphics1) inverts the ensuing text, and SG1 (shift graphics 1) turns this off again. G2 underlines the following text, and this can be mixed with G1 to obtain underlined inverted text. SG2 switches the underlining off again (shift-graphic 2). G3 before text tells PageMaker that it should be in the standard Spectrum font, whereas G4-G7 tell it to display the text in one of the four alternative fonts.

Please note that the control codes do not actually take up any space in the text file. You will thus have to leave extra spaces in your text to compensate for this when it is finally displayed in the page within the **Artist II**, or indeed when it is printed out.

### **Abort**

During either 'grab' or 'insert' in the PageMaker mode you can abort by simply pressing 'ENTER'.



# Getting Started

## Loading 'The Artist II'

The entire **Artist II** actually consists of 4 separate programs: **Artist II** itself, a **'Sprite & Font Designer'**, a **'Page Maker'** and a **'Screen Compressor'**.

In all cases the programs can be loaded by entering:

**Load ""** and then pressing **ENTER**

All 4 programs will automatically load and run when loading is complete. Just before **Artist II** starts you will be asked whether you will be using the AMX mouse. If you are then enter 'y' and press ENTER, else just press 'n' and ENTER. **Artist II** will not operate correctly if you select this AMX mouse option when it is not attached, or fail to select it when the mouse is attached. So please note!

## An Introduction

At the heart of **The Artist II** is a series of highly acclaimed graphics routines which contributed toward this program's predecessor (**The Artist**) being rated as one of the best graphics packages ever to appear on a home computer. But what makes this graphics package (in the words of *Sinclair User*, November 1986) "... **the best Spectrum artist program bar none**" is its extensive use of **ICONS**, **WINDOWS**, **PULL-DOWN MENUS**, and a host of graphical routines more usually associated with computers costing over £1,000.

The use of icons, windows, pull-down menus and so forth has been popularised on such computers as the Apple Macintosh, the Atari ST, and more recently on IBM PC compatible micros running environments such as GEM, WINDOWS, and other similar on-screen simulations of a 'desk top'.

Computers using an environment based on windows, icons and menus have become increasingly popular, almost certainly because they are almost always associated with much greater 'user friendliness'. Such computers also usually what has been called a 'mouse'. This is a small device which can be attached to your Sinclair Spectrum (at least two 'mice' can be purchased for your computer, and both are supported by **Artist II**: the Kempston Mouse and the AMX Mouse). Instead of using the computer keyboard to control what is going on on the screen (such as when you might be required to use the 'cursor' keys to control the movement of an arrow on the screen), with a mouse you simply move it around on a flat surface near the micro and the cursor, or whatever else you are controlling, on the screen will move accordingly.

In fact, we strongly recommend the use of a mouse with **Artist II**, because impressive as it is when controlled from the keyboard, it is an order of 10 times easier still to draw on-screen and to select items using the mouse.

But the general 'feel' of this program remains 'friendly' no matter which method you use to control what happens on the screen. Upon loading you will see a clear central screen area with a so-called 'menu bar' at the top of the screen, and a selection of icons at the bottom.

Your control of **Artist II** could hardly be easier, as in almost all cases you can interact with this program by simply selecting an item from one of the pull-down menus at the top of the screen, or by selecting one of the icons at the bottom.

## The arrow cursor

This is at the heart of your use of **Artist II**. To create graphic images you simply have to get to know how to control the movement of this arrow cursor, and realise that no more than a couple of other keys (or the mouse button/joystick button) need to be pressed in order for you to have fully flexible control of this program.

The arrow cursor acts as a pointer on screen. During the actual process of drawing a picture the cursor will point to the exact position you are drawing at. It will also indicate exactly where boxes/circles/lines/etc will be drawn from and to. And it will also allow you to accurately set up windows (see later for a full explanation of these).

When you wish to choose one of the many features or functions of this program you simply need to point the arrow cursor at the required item on a menu or at an icon and press a key or button. It could hardly be more simple.

## A quick guided tour

Let's quickly have a look at what is involved in using **Artist II**. At the top of the screen you can see a number of menu names: STORAGE, TYPEFACE, MODES, SCREEN, EXTRAS, and WINDOW.

You can probably guess what many of these are about simply from their names. But let's have a closer look.

First you will need to know the basic keys to press to operate **Artist II**.

**Mouse/Joystick use:** When using a mouse (AMX or Kempston) or a joystick (Kempston), moving the cursor around the screen is done by simply moving the mouse or joystick in the usual manner. There are 2 buttons on the Kempston mouse, and 3 on the AMX. Only two buttons are used by **Artist II**, and thus the right hand most button on the AMX is non-functional. The right button (middle on the AMX) allows you to draw (it sets pixels on the screen), and also allows you to select items on the menus or any of the icons. The left hand button allows you to de-select a menu and also allows you to erase pixels on the screen. This button too will allow you to select icons and such options as patterns in the 'paint pattern' menu, and so forth. Experiment with the mouse until you have a good feel for which button to press and when. You will be surprised at how quickly using the mouse with the two buttons becomes second nature to you.

On the joystick the fire button allows you to draw, whereas the 'M' key on the keyboard is used for selecting and deselecting menu items and so on.

The keyboard controls are:

- Q** - UP
- S** - DOWN
- I** - LEFT
- O** - RIGHT
- M** - Select items/draw
- N** - Erase

Using one of the above methods of controlling the arrow cursor, move it up to the top left side of the screen. Notice, by the way, that the movement of this cursor is 'intelligent' insofar as it speeds up the longer you hold the key or button down. Using this cursor as a pointer pull down the upper left hand menu entitled STORAGE.

You can see that this menu (as you'd expect from its name) allows you to choose from a number of options relating to saving or loading your works of art, or to printing them in one of a number of ways.

We'll return to discuss these options more fully later, but for now notice that there are two items which are green on the menu rather than black. These items are non-functional unless **Artist II** detects that you have loaded it into a Spectrum with either microdrives or an Opus disc drive attached. The items do of course relate to gaining a catalogue from a cartridge or disc, and to erasing files on them too.

In general, then, those items in green are either switched off or non-functional depending upon the peripherals you are currently using.

**TYPEFACE:** To de-select the STORAGE menu when you are using a mouse you simply press the left hand button. With the keyboard or joystick control simply move the cursor to one side and you see that the menu disappears. Now by simply moving the cursor up to the next menu along you can pull down the TYPEFACE menu.

Again, no surprises here. As the menu's name implies this menu allows you to choose from one of two sizes of typeface (or text-font) and from three different typefaces stored in memory by the program. These typefaces are in fact redefinable (but we'll return to this a little later).

Now, as before, let's de-select this menu and select the next one: **MODES**. There's a little more explanation required here perhaps, although once again you should find most of what you see in **Artist II** fairly self-evident. In general, **If in doubt experiment!**

This menu will be dealt with more fully below, but essentially it allows you to set up the basic way in which the drawing mode will work. So you would use this menu, for instance, if you wanted to select a new colour to use, if you wanted to draw with a patterned line rather than a pure black one, if you wanted to invert or XOR what is on the screen, and so on.

Now let's move on to the next menu entitled 'SCREEN'. Again, few surprises here either. All these options refer to the screen in general (in contrast to windows that you might set up within the screen - see later). So by selecting CLEAR for instance you would erase whatever you had put on the screen. Similarly, VIEW allows you to see the entire screen (with the menu bar and icon area removed), and so on.

EXTRAS is the menu to head for when you wish to change your method of control (but be careful not to select a mouse or joystick if you do not have one attached). Items here also allow you to edit either the **Artist II's** 5 sets of fonts (characters), or to edit the designs used by the paint/fill routine. In general, then, this menu would be selected only occasionally for set-up and for changing fairly fundamental definitions.

The last menu, WINDOW, is one of the key menus on the bar. Basically, the ability to set up windows within the graphic area of the screen is one of **Artist II's** most powerful features. This menu allows you to control what happens within these windows that you set up, and allows you to both manipulate the image within the window itself as well as the relationship between the area you have chosen and the rest of the screen. Using this menu you can change the colours within a window, move a window of graphics around the screen, scroll within a window, mirror images, scale images up or down by various degrees, and even use an item to blend previously saved images with the one currently on screen.

Now let's have a quick look at the icons at the foot of the screen. We'll just scan these and return to their actual use in a minute.

On the left are the icons relating to drawing lines, circles, ellipses and rectangles - with options to draw both filled (painted) or open shapes automatically. To the right of these icons is a brush icon, which when selected allows you to choose the brush size you wish to use, or even a spray-can effect. Note that the selected icon is reversed (white on black). To the right of the brush is a scissor icon which is selected when you wish to cut out an irregular part of your artwork and manipulate this chosen image. This feature alone makes **Artist II** more powerful than virtually any other package available for popular home computers. To the right of this is a magnifying glass icon, which you can select when you want to enlarge an area of your picture to make fine alterations. Next along to the right is a paintpot icon which is selected when you wish to paint or fill an area with a chosen pattern (or just solid colour if you so choose). To the right of this is the text option (the letter 'A') which allows you to opt to put text directly onto your picture at any given point). The dotted rectangle icon to the right is selected for setting up a window.

Finally in this quick overview, the bottom right corner has the colour selection and paint/fill-pattern selection boxes.

## Drawing a simple image

Let's actually draw something now.

First let's select a slightly thicker brush to work with. Take your arrow cursor down to the bottom of the screen and select the 'brush' icon. You'll see that a menu appears across the top of the picture area, and the currently selected brush size is indicated with a blue flashing square.

Let's select a brush which is 3 pixels by 3 pixels, that's the one two steps further to the right of the single pixel brush which **Artist II** defaults to. Move your mouse or use the I and O keys to select this brush.

Now you can start drawing on the screen by simply moving your mouse or joystick and pressing the firebutton, or the right/middle mouse button. Using the keyboard you can move your brush around with the 4 keys (Q,S,I,O) and 'paint' by using the 'M' key (hold it down with your thumb to get a continuous line).

Try erasing parts of your masterpiece by either pressing the left mouse button, or if you are not using a mouse, the 'N' key.

## Lines

Drawing lines is just as easy, and it's very flexible. For instance, let's select the upper of the two line-icons in the bottom left hand corner of the screen. But first, if your screen is somewhat 'full' after experimenting with the line-drawing, then CLEAR the screen by selecting the SCREEN menu and the item CLEAR.

Once you have selected CLEAR you will see that the left hand mouse button (or 'N' with the keyboard) allows you to set a kind of 'reference' spot from which a line will be drawn. You can then stretch this line around the screen by moving the 'cross' cursor which has appeared, and actually draw the line by pressing the right hand/middle button or the 'M' key. With this option you can thus easily draw lines which follow on from one another all over the screen. Drawing a number of different linked lines is simply done by re-setting the reference cursor position using the left button or the 'N' key. You don't to de-select and re-select this line drawing function again.

The next icon below this one is a more usual 'elastic-line' drawing feature. You get out of the last line-drawing mode by simply moving the 'cross' cursor down to the lower icon-menu bar again. Select the single line icon ( it is reversed). This mode of drawing a line is fairly similar to the last. But in this case it is assumed that you want to draw a number of lines from a single origin point, rather than drawing a line from where the last line you drew ended.

## Circles/Ellipses/Boxes

It is very simple to draw circles, ellipses and rectangles or boxes using **Artist II**.

As with the line drawing options, the left hand mouse button (or the 'N' key) allows you to set a kind of reference point on the screen. In the case of the circle or ellipse, this is the centre of the shape. In the case of a square, rectangle or box, the reference is the upper lefthand corner.

The right hand/middle mouse button (or key 'M') is used to actually draw the shape. In each case you have the option of either drawing outline shapes or filled shapes. The shape will be filled with the currently selected fill pattern and in the currently selected colours if COLOUR is selected in the MODES menu at the top of the screen.

## Brushes

You can easily select different brush sizes and types by using the brush icon at the base of the screen. Select this now and note that a flashing blue indicator shows the currently chosen brush. You can move right and left through the choices available and select another type using the select button or key. Notice that there is a blank brush type on the far left. You can use this, for instance, when drawing filled shapes. With this brush type selected your shape will have now 'line' bordering it other than that created by the pattern selected at that time.

Note too that there is a slanted brush on the far right, and another forth in from the right. These can be useful for creating 'italic' looking lines or wherever you want a variation of thick and thin lining. The third pattern from the right is a spray can effect, and the second from the right gives a rounded brush effect.

## Re-designing brush patterns

You can re-design any of these brush patterns quite easily by selecting the FONT DESIGNER from the EXTRAS menu at the top of the screen. This is dealt with more fully below, but at this point we'll just note that the brush designs are held in font number 6 in the designer.

## Cut & Paste (Scissors)

The next option along at the bottom of the screen is the Cut and Paste facility indicated with an icon of a pair of scissors. To cover this powerful feature fully it is best if you can either load in a previously created screen design, or at least it is recommend that you fill then screen with, say, a large rectangle filled with a pattern.

Selecting this feature will provide you with a different screen display in which an area of the main screen is displayed on the righthand side, and in the upper left corner you will see: 1=INSERT (in white on blue background).

The INSERT option at this point allows you to chose to merge another graphical image with the one already in memory. But more than merely merging the images in a general manner, this option from within this mode allows you to merge in some graphics and actually cut out a selected, irregularly shaped area to be blended with your main picture.

First, note that on the righthand side of the upper area of the screen is a section of your main screen's artwork. It is best to regard this as a 'window' into your main artwork, and by moving your mouse/joystick or using the movement keys you can select which area of the main screen you wish to cut out.

Whne you are happy with the area chosen, press 'M' or the select button. You will now see that the upper area of the screen is in two halves - with part of your main screen in the right hand half. At the bottom will have appeared a list of 6 options:

1=LINE 2=CIRCLE 3=FILL 4=PLOT 5=SHOW 6=EXIT

What you can now do is literally 'cut out' a section of what you see of you main picture displayed on the right side. To 'cut out' you simply have to make an area inverted. You can do this in a number of ways - as the options suggest. You can simply draw around an irregular area by moving the arrow cursor and pressing the 'set' key ('M', or the mouse button). And when the shape is drawn you can then FILL that area by placing the cursor within it and pressing the '3' key.

Alternatively, you can cut out circular areas, or draw areas bounded with lines. Note that the '4' key (PLOT) sets a kind of reference cursor which forms the centre of the circlce or one end of the line.

At any moment you can see more clearly which part of the picture you have cut out by looking at the 'black' area appearing simultaneously on the left of the screen. Atnd you can also check that the area you are trying to cut out is correct by pressing the SHOW option (key '5'). The part you have cut out so far is then shown on the right. Note that you are not limited to cutting out just one area. You can cut out several at once, all different shapes. When you are satisfied that you have cut out the required area, simply press the EXIT key ('6') to go on to the next step. You will now see that the area you have cut out is overlaid on top of your main screen area, with 7 new options displayed at the top of the screen:

1=MIR 2=INV 3=TURN 4=BLEND 5=MIX 6=QUIT 7=SCROLL

First note that you can now position your cut-out area anywhere on your main screen by simply using the movement keys, or moving your mouse/joystick.

You can experiment with these options to see the differing possible effects. For instance, pressing '1' clearly mirrors the shape you have cut out. Pressing '2' reverses its PAPER and INK, whilst pressing '3' rotates the shape around through 90 degrees with each key press (in fact you press twice per turn). Pressing '4' shows you an effect we have called 'blend' (pressing it again will revert to the original un-blended state). And pressing '5' shows you the effect we call 'mix'. Again pressing '5' again reverses the effect. For the knowledgeable, these two options are equivalent to 'AND'ing and 'XOR'ing the images. Straightforward placing of the image on the screen ('OR'ing) is done by simply pressing the 'set' key/button.

Finally, pressing '7' will allow you to scroll the image you have cut out within the window of effect on the main screen. To stop scrolling simply press the 'set' button ('M' for keyboard usage). Pressing '6', as you'd guess, quits this mode. But if you want the effect to be permanent (that is, if you want the area in question actually placed in position on the main screen), then press the 'set' button ('M' key) before exiting back to the main screen by pressing '6'. Note too that there is no limit to the number of times you can move your 'cut out' image around the screen and press 'M' (or your set button) to place the image in any given position.

## Insert

You can blend part of an image from an already previously saved piece of artwork by pressing the '1' key as you enter this Cut & Paste mode. You will be prompted with:

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FILE: " "
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And there is the usual Sinclair flashing 'L' cursor, indicating readiness for you to enter the name of the file you wish to load. As is usual, you can load the next file on tape by simply pressing the ENTER key.

The loaded file is then put into memory without destroying your main picture, and you can move around within this merged picture using the same method you would to move the arrow cursor. When you have selected the part of the artwork to be worked on, press 'M' or the 'set' button to go ahead with the selection of an area to cut out as above. You will then be able to blend or mix areas of the saved artwork with the artwork you have just created on the main screen.

This mode of operating has many advantages over simply using the windows and the WINDOW menu option (we'll return to this later), because the area of your picture you can deal with must always be rectangular and you can only move the image around within the window in character square movements. Thus fine tuning and dealing with irregular shapes is best done in the Cut & Paste mode.

## Enlarge/Magnify Mode.

By selecting the magnifying glass icon, you can enter **Artist II's** very powerful enlargement mode. In this mode you can do finedetail work on your graphics, whilst have both the enlarged and normal sized images visible at the same time.

To see this in action first get some kind of image on the screen using simple drawing, filled shapes, or loading in a previously saved SCREEN\$.

Now select the magnify mode and you will see that the screen becomes divided into two areas - - the normal sized image on the left, and the magnified image on the right. In the left hand area you will also see a rectangle with a dotted-line surround. This outline indicates the position of the 'window' of the main artwork which is being magnified on the righthand side. You can easily choose an area to work on by pointing the arrow cursor to an area and pressing the set key/button. You'll then see the rectangular window move to that spot and the enlarged version of the image appear on the righthand side.

You can now set and unset (draw and erase) the pixels in the righthand enlarged area and simultaneously see what changes you are making to the main artwork at its normal size.



To get back to the main screen again having finished in this mode you simply move the arrow cursor down into the icons' area at the base of the screen.

Note that this is true in general - **when you are in a mode you can get out of it again by putting your cursor into the ICON area at the bottom of the screen.** You do not have to select any of the other icon options.

## Painting an area

**Artist II** has a superb painting/filling facility which is used by selecting the paint can icon at the base of the screen. This facility can handle painting either in colour or not, solid colours or in a pattern, and it can fill any area no matter how intricately you have drawn it.

To test this and see how to use it to best effect, draw an irregular shape using the simple movement of the cursor and holding down the 'set' key/button.

When you have done this, select a pattern by moving your arrow cursor to the very bottom right hand corner of the screen and pressing the 'set' button/key again. You will be given a menu display of various patterns and the current one is highlighted in pale blue. Simply chose another by moving the blue indicator about the menu and selecting one with the 'set' key. **Note:** You can also select a new fill pattern by pressing the '7' or '8' key to step through the options.

Back in the main screen again, select the paint can icon and you will see that your arrow cursor has been replaced with one looking like a paint can. Move this icon to within the area which you want painted - ensure that the 'drip' that is coming out of the upper left side of the icon is within the area to be painted. One dot out, and you will probably fill everything except for the shape concerned!

Press the 'set' key/button when you want to paint and almost instantly the entire of your shape will be filled with the chosen pattern.

## Undo ...

By the way, if you did make a small error in placing the paint can icon and the wrong area of the the image was filled, simply press the 'N' key to UNDO the mistake (or the left hand mouse button). Then move the paint can and paint again by pressing 'set'.

## Painting in colour

This is simply accomplished by first selecting the COLOUR option within the pull-down menu at the top of the screen entitled MODES. Simply press 'set' when you have this option selected and you will see that the word COLOUR is now highlighted in light blue to indicate you have switched this mode ON.

Now when you paint an area it will be painted with the INK and PAPER currently selected at that time. You can see what you have selected, by the way, by looking at the area labelled 'COL' just above the selected-pattern indicator in the bottom right of the screen.

Filling/painting an area now with this mode switched on has the obvious effects. Try it, and note the importance of taking into account character square boundaries. Don't forget that you can UNDO the painting by pressing the 'N' key (or the lefthand button on the mouse).

## **Solid versus pattern fill**

Quite simply, to do a solidly painted area you simply have to chose the solid fill-pattern from the menu of patterns displayed when you select that option from the bottom righthand corner of the screen.

## **Changing colours**

This is an appropriate place to discuss the various ways in which you can change the colours that you are currently using. In, fact you can also of course set the current status of FLASH and BRIGHT, too.

There are in fact three main ways of changing the currently selected colours. One way is to select the item PALETTE from the pull-down menu entitled MODES. You can then select your INK, PAPER, BORDER, FLASH and BRIGHT by moving up and down and using the 'set' key/button. You end you selection by simply moving to the bottom of the PALETTE window where 'END' is highlighted, and press 'set'.

Note that once you exit from the PALETTE the newly chosen attributes are displayed, as they always are, in the area labelled COL in the bottom righthand corner.

You can also chose colours by selecting this area called COL -- in the same way that you select any of the icons at the bottom of the screen. The area becomes inverted (INK and PAPER) are swopped when it is selected, and pressing 'set' will call up the PALETTE display, as you saw above.

The third way of changing the attributes is a more direct manner using the keys 1 to 6:

- |       |                                       |
|-------|---------------------------------------|
| 1 - 2 | Move left/right through INK options   |
| 3 - 4 | Move left/right through PAPER options |
| 5     | Switch BRIGHT on/off                  |
| 6     | Swithc FLASH on/off                   |

This can be a very useful alternative to using the PALETTE display.

## **Why is there more than one method of changing colours?**

Obviously using the PALETTE display is somewhat easier (if more time consuming perhaps) than using the direct key-press method. The difference between the other two methods, though, is simply that when you select the PALETTE from the pull-down menu you still retain the paint can icon (for example), where as if you select the new colours from the lower area your paint can cursor will revert to its usual arrow cursor, and you will have to re-select the paint option to paint another area in a different colour.

## Putting text on the screen

Painting another area in a different colour is done by selecting the 'A' icon at the base of the screen. What text you will be writing in, and what size of text -- are first determined by selecting the pull-down menu called 'TYPEFACE' at the top of the screen.

When you select the text icon you will see that you are given a new sort of cursor, a vertical line with a forked top and bottom. Using it to put text on the screen anywhere you want could hardly be easier. You simply place the cursor where you wish the text to appear, and then press the 'set' key/button. Note that you can use this to put text anywhere on the screen - to pixel accuracy, not just within usual Spectrum character squares. Note too that if COLOUR is on in the MODES menu, then you will write in colour too. You may not always want this to be the case, so check the MODES menu before you start writing. Although if you make an error you can always select UNDO from the SCREEN menu. To get out of this text writing mode again you simply press the ENTER key. Note that you can redefine your own fonts for this mode: see the font designer covered below.

## WINDOWS

The ability of **Artist II** to handle windowing is one of its most powerful features. For this reason it is being covered here in a separate section.

Two things relate particularly to using and setting up windows: the dotted outline rectangle icon at the base of the screen (to the right of the 'A' icon), and the WINDOW pull-down menu at the top right.

### Setting up a window

First let's note that if you do not set up a window (or if you close the window) then **Artist II** assumes that the entire screen is to be treated as a single window.

To set up a window, though, you select the window icon from the base of the screen (to the right of the 'A' icon). Once selected, you will see that you have a shimmering rectangle on the screen defining a particular area. To vary the size of the window, you simply move the mouse/joystick or use the movement keys as usual. To vary where it is on the screen you use the 'N' key or the lefthand mouse button to select where the upper left corner of the window is to be.

Once you are happy with the positioning of the window, simply press the 'set' key/button to select it. All that will appear to have happened is that the shimmering rectangle has disappeared and your arrow cursor has reappeared again. However, you can easily check that you have successfully set up a window by now pulling down the menu called WINDOW. As you do so the rectangular area selected is immediately outlined again.

Quite simply, you can now manipulate and generally deal with this specific area of the screen independently of the rest of the picture.

To see this you can experiment with the various options under the menu called **WINDOW**. They are as follows:

**MOVE**: This does what you would expect it to. Select this option and you can move the windowed area of the picture around, and mirror it, invert it, turn it, and then either blend it or mix it with the original screen, or simply place it in its new position, and new orientation.

**CLEAR** also does the expected: it clears the area defined by the window. Notice though that it will clear to the currently selected attributes. If you make an error here don't forget the **UNDO** option on menu **SCREEN**!

**INSERT** is a fantastic feature which enables you to literally insert a section of another piece of artwork into the one currently on screen. Simply select the **INSERT** option, load in another screen and once it is loaded, note that you can scroll around in the loaded picture using the normal movement controls thus you can select what part of the loaded in picture is to be put in the position occupied by the window.

**SCALE** can be equally useful and impressive to use. Select this and you will be presented with another shimmering window area. As with the original window selection, you can place this window anywhere and make it any size you wish. When you have finished you then simply press the 'set' key/button and **Artist II** will automatically re-create the image that was in your original window and scale it to fit into the new window and in the new position.

**TURN** again holds few surprises: simply selecting this enables you to turn the image in the window around in 90 degree turns. Selecting **TURN**, then, followed by pressing the 'set' key/button will cause the image to rotate. Pressing the 'unset' key/button (lefthand button, or key 'N') will place the image in its new position and rotation.

**INVERT** and **MIRROR** allow you to selectively invert and mirror the area within the selected window. And similarly, **SET INK**, **SET PAPER**, **SET BRIGHT**, **SET FLASH** all selectively set the attributes within the chosen window to the attributes currently selected from the **PALETTE**.

**SCROLL** allows you to scroll this image around within the selected window area. This is a powerful way to realign images. Remember too that if no window is defined (as it is after you **CLOSE** the window), then the entire screen can be scrolled in this manner.

**THICKEN** allows you to literally thicken all the lines and dots within the windowed area. Similarly, **OUTLINE** puts an outline around everything. To get the clearest idea of what these two functions do and how they might be employed, put some text onto the screen, and then put a window around the text.

## **Windowing the entire screen**

Note that if no window is defined (or if you **CLOSE** the window by selecting the first item in the **WINDOW** menu) all window features will operate on the whole screen.

You can thus change the attributes of the entire screen, rotate the screen, mirror it, invert it, and so on.

## Other screen manipulations

Using the items on the menu called **SCREEN** you can do a number of other screen manipulations too. **CLEAR** erases the entire screen area (in contrast to just that within a window). If you have cleared by mistake, then **UNDO** further down this menu will put you back where you were before the screen clear.

**UP** - as its name implies - moves the entire screen up three character lines to reveal that part of the screen otherwise hidden below the icon display at the base of the screen. This option is used when you want to work on this lower area of the screen.

**DOWN** - when you have selected UP it will become green on the menu indicating it cannot now be re-selected (obviously), and you will now be able to select the DOWN option to move the screen back down again.

**VIEW** enables you to view the entire screen - with no menu bar or icon selection area visible.

**PATTERN** puts a bright/non-bright checker pattern on the entire screen to assist you in seeing the character square boundaries which are so important when considering attributes on the Spectrum computers. This pattern effect does not effect the stored bright and non-bright attributes of the screen.

**UNDO** does what it sounds like, it 'undoes' the last thing or series of things that you did. The way it works is not totally straightforward insofar as it will 'UNDO' back to the last up-date which **Artist II** did to its secondary screen area. This will happen when, for instance, you paint an area, or when you go into the cut & paste mode, or when you insert another image into the screen display, and so on. You can cause it to happen, though, by selecting **OK** which is at the bottom of this menu. You should think in terms of using the OK option whenever you are satisfied with some graphics which you have put on the screen. By doing this as a matter of habit then can ensure that you never have to go back too far in the creation of your graphics.

# Printers & Print Dumps

## Printers

You will have seen that upon loading **Artist II**, you were asked whether you are using either a Kempston 'E' printer interface, an Opus one, or any other kind.

**Artist II** has been designed to work immediately with either the Kempston E or the Opus interface, but will require amendments to its BASIC code in order to support other printer interfaces. Without modification, though, **Artist II** should operate with most Epson compatible, parallel interface printers

On the STORAGE menu at the top left of the screen you will see that there are four possible choices of printer dump, in addition to the option to dump straight to a ZX Printer. The first dump option (LARGE DUMP) puts a straightforward dump onto your printer, with no stippling effects to indicate colour or grey scale. Similarly, SMALL DUMP will put a small screen dump to the printer with no grey scale stippling effects.

The options, GREY DUMP L and GREY DUMP S, by contrast, produce larger print dumps which are at 90 degrees to the printer paper's orientation and which provide a grey scale stippling effect whereby each colour is represented differently giving a 'truer' representation of the colour screen display.

## SAVE and LOAD

### SAVING & LOADING

On the STORAGE pull-down menu, the initial two options are LOAD and SAVE. **Artist II** is programmed to save and load to and from the currently selected storage medium. It is initially, upon loading, set up to work with tape. However, it is possible to use the program with either Microdrives or an Opus Disc Drive by selecting OTHER in the STORAGE menu. As you select this option you will see that OTHER is replaced with TAPE and that both CAT and ERASE now become selectable items.

**Artist II** is not designed to be used with other storage media, but there is no reason why its BASIC code should not be amended to allow it to save to and load from other media such as, for example, a BETA disc.

### Saving and Loading Fill Patterns

**Artist II** allows you not only to create your own fill patterns but it also allows you to store them and reload them. These options are clearly marked in the STORAGE menu.

# Other Points to Note

## Mouse operation

As mentioned above, **Artist II** is designed to operate with either the AMX or Kempston Mouse.

**Drawing straight lines with a mouse:** a special facility has been inserted in this program to facilitate the drawing of straight lines using a mouse. When the mouse is in operation simply hold down the 'M' key and all mouse movement will only result in accurate straight up and down movements of the cursor. Similarly, holding down the 'N' key whilst using the mouse will allow you to move in accurate straight lines left and right.

**Returning to keyboard control:** As well as being able to re-select the keyboard by pulling down the EXTRAS menu, you can also press the 'B' key whilst the mouse is in use.

## The Font Designer

### Designing Fonts & Fill Patterns

It is very simple using **Artist II** to create new fonts, typefaces, characters and fill patterns for the paint and fill routines.

To do re-design the fonts you simply select the FONT DESIGN option from the top of the EXTRAS menu. When you do this you will be presented with a new screen displaying one entire font set, out of a possible 6. At the very top of the screen you can see just the first 8 characters or fonts from the set displayed several times their normal size. By pointing your arrow cursor to a block of 8 characters in the set you can reselect which 8 characters are enlarged at the top. You will see that the actual character that you point to in a block of 8 is the one highlighted in yellow at the top and in the listing. By using the set and unset (erase) keys/buttons as usual (as when you are drawing), you can make dot-by-dot changes to any one of the characters/fonts in the set.

You can see in the menu at the bottom of the screen that you have the option to save and load sets of fonts/characters, and there are numerous options to mirror the fonts, invert them, and so on. Note that reference to acting on FONT means that it will affect the entire set, whereas acting on a CHR (character) just affects the currently selected actual character (highlighted in yellow).

You can exit this mode at any time by selecting the EXIT option at the bottom of the screen.

# The Page Maker

## Loading The Page Maker

You can load The Page Maker by simply entering **LOAD""** and press **ENTER**. This program is immediately after **Artist II** on side one of the tape.

## Using The Page Maker

This program has been designed to provide you with a simple, yet very effective 'page make-up' system. It has been created specifically with the idea of combining text from **The Writer** with graphics from **Artist II**.

Essentially, The Page Maker will allow you to create an 'A4' size print of a mixture of graphics and text. The way this is achieved is to split the final A4 page up into 4 equal horizontal blocks - A to D.

Each section (A - D) in Page Maker is equivalent to a pair of screens on your Spectrum. In each block you can have two screen-fulls of information, and this is equivalent to 24 lines of text in **The Writer**. Each screen of text shows one half (32 characters) of a total screen which is 64 characters wide.

To use Page Maker, then, you must start by planning your overall page from within **The Writer**. To plan a page you must think in terms of the entire page being equivalent to 96 lines of text, where each line is 64 characters wide.

A block of text which is 32 characters wide by 24 lines high will be equivalent to one screen-full of information when you enter The Page Maker. Thus if you wish to have as part of your final page an entire screen of graphics, you will need to leave an area in your text which is at least this size - 32 characters wide by 24 tall.

But of course, Page Maker does not restrict you to only putting entire screens of graphics into your text. You can put as little as a single character square (8 by 8 pixels) if you wish!

You do not, of course, have to put an entire 96 lines of 64 column text into Page Maker. You can put as little or as much as you like. But you should bear in mind that the entire 'page' you are working on is 64 characters wide by a total of 96 tall. Thus if you want a little text at the top of a page, some more halfway down, and then a footnote at the bottom, you will have to think carefully in terms of where these lines will fall on the overall area of text 96 lines high.

You should think, then, if your basic **Writer** text file as the basis for your A4 page of text and graphics - the skeleton. Having created your basic page using **The Writer**, you should then load up Page Maker.



## Printer variations...

Page Maker has been created to be used with most Epson-compatible printers attached to your Spectrum via a standard parallel interface (such as Kempston Interface E, or the printer interface on the Opus Disc Drive).

For the technically minded, it addresses the dot matrix printer by opening channel 3 and prints using RST 16. It assumes that NO characters are being filtered out. But if you are not technically minded, don't worry! It isn't at all essential for you to understand these points in order to make full use of The Page Maker.

If you own a Kempston E Interface you will need to initialise it before using this program. We suggest that when Page Maker is loaded you should BREAK into it (using the SHIFT and BREAK/SPACE keys as usual). Once into the BASIC listing, create lines 21 and 22 to read:

```
21 COPY:REM CHR$0
22 LOAD"writload" CODE 23424
```

Because the set-up of the interface interferes with the "writload" file, it is necessary to reload it again in line 22 before starting the program proper. You can then SAVE this amended version of the BASIC by entering:

```
SAVE"PAGEMAKER" LINE 20
```

Similarly, if you own an Opus Disc Drive, then you will need to BREAK into the BASIC and enter the following as a direct command:

```
OPEN#3,"b"
```

You can then RUN the program again to get back to the menu.

If you own another printer interface, then you can initialise it as you normally would by BREAKing into the BASIC as described above. You may wish to modify the BASIC and resave it (as detailed above) to customise The Page Maker to your own particular interface and printer arrangement. However, note, we cannot guarantee that Page Maker can be customised to work with any printer/interface combination.

## The main menu

You will see the main menu is as follows:

```
THE PAGE MAKER
©1986 SofTechnics
```

```
1 ... Load ASCII text file
2 ... Load a graphics screen
3 ... Start editing block
4 ... Continue editing block
5 ... Change block
6 ... Print current block
7 ... SAVE current block
8 ... LOAD a saved block
    Current Block ... A
```

Most of these menu items are self explanatory. To load in your basic text file created using **The Writer** you chose option number 1 (press the '1' key). You will then be prompted to enter a file name, but pressing ENTER will simply load the next file on tape.

Again, this program was designed to be customised. If you are using a disc drive or microdrive arrangement, then you may wish to alter the BASIC to enable it to LOAD from the particular format you are working with.

Once your text file is in you will quickly be able to see essentially how The Page Maker operates. With an entire 96 lines of text in memory you will now be able to select the 4 different blocks (A - D) by pressing the '5' key. As you select each block, then select to edit the block by pressing the '3' key and you will be able to see what section of the text is in that particular quarter of the overall A4 sized page.

In fact, you will immediately see the lefthand screen of a two screen block. To be able to move around this entire block you simply use the following keys:

Q - UP; A - DOWN; I - LEFT; O - RIGHT

By going right (using the 'O' key) you will be able to see the block scroll over as you reach the right side of the screen.

You can now insert blocks of graphics (anything from a single 8 by 8 pixel single character square up to an entire screen full) by using the 'M' key to first select a rectangular area, and then to define the area of graphics to be placed there.

To do this you use the movement keys to place the 'star' cursor in one corner of the rectangular area you wish to place the graphics in. Press 'M' to select that point and now move the cursor to the opposite corner of the rectangle. Press 'M' again and you will find that you now have a 'WINDOW' into your screen of graphics which you loaded in. You can scroll around within you graphic screen by using the movement keys. Once you are satisfied with the section of graphics you wished placed in the rectangular area, then press 'M' again. If you change your mind, then simply press the BREAK/SPACE key and it will abort that window.

You can place as many graphic areas on the 2-screen block as you like. When you are satisfied with that particular block, you EXIT by pressing the CAPS SHIFT key. This takes you back to the main menu again.

You can then print that particular block (remembering that it is equivalent to roughly a quarter slice of an A4 size sheet of paper). Simply press '6', and that block will be dumped to your printer in a 'what you see is what you get' manner.

### **The next quarter ...**

Having edited the initial quarter, you would then select block 'B' by using '5' and (if you wish any graphics in this block) you would then select '2' to load more graphics. If you want to 'cut & paste' more of the same graphics into this block as you put into the first one, then note that the initial screen of graphics has remained in memory .

Having set up all the graphics for block 'B' you can then print it, and go on to working on blocks 'C' and 'D' in the same manner.

Note that these 4 blocks virtually fill an A4 sheet area on most printers. You may, therefore, wish to deal with a text file which is somewhat less than 64 characters wide and 96 tall in order to have a reasonable margin around your page.

## Saving blocks

Option 7 in the menu allows you to save the current block to tape (although you could modify the BASIC to allow saving to an alternate medium). This may well be an advisable thing to do as it will allow you to re-load the block later should the print-out of the page not meet your requirements.

## Loading saved blocks

Loading saved blocks is simply achieved by using option 8 in the main menu. HOWEVER, note that once the block is loaded you **must** use option '4' (Continue editing block) to go back to the screen or The Page Maker will place the relevant section of the current text file into the block in question, and it will also destroy the graphic windows in the block just loaded.

## Alternative character sets/special features

The Page Maker supports 5 sets of fonts, and come with these ready defined as variations on familiar typefaces, with a set to enable enboldening, as well as a futuristic font. These, thought, are re-definable and are located at 29696 in memory, with each set of fonts being 768 bytes long. You can thus easily create further fonts and character sets using **Artist II** and merge them with Page Maker.

To change the font you want the text to appear in you simply have to insert a special character into the text just before you want the change to occur.

As Page Maker comes set-up, this special character is: \x - where x is a number between 0 and 4. Thus the following would cause the word 'Fred' to appear in font style number 3:

\3Fred

But don't forget to change the font style back again. Obviously, you can use this to enbolden certain words by arranging for one of the other fonts to be a bold version of the main typeface.

## Underline/Inversion

Page Maker is also set up to handle the automatic underlining and reversal (white on black background) of any word, or indeed of any part of the text from a single letter to an entire paragraph.

To underline a word you simply ensure that it is bounded in the **Writer** text file by the following 'curly brackets' = { }. Hence {Fred} would appear on screen in Page Maker as Fred.

Similarly, if you want to invert some text simply put square brackets either side of it:  
[Fred]

In line with the general philosophy, though, of Page Maker these symbols which indicate the font and special characteristics are re-definable.

If you BREAK into the BASIC you will see that lines 110 to 160 define these symbols as those in use. You can change these to anything you want, even to normal Sinclair graphic characters which you are unlikely to use in a block of text.

### Some notes:

In order to ensure that you can modify and customise Page Maker as fully as possible, it is possible that you may unwittingly corrupt one of the machine code files whilst making an amendment. As a rule it is a fairly easy matter, should this seem to be the case, to re-load the file concerned from your **Artist II** tape. For instance, you may well corrupt the routine that loads in the special **Writer** files. If you get a strange result to attempts to load such files then re-load the appropriate file from the tape and re-start Page Maker by simply entering RUN.

Your text file **must not exceed 7000 bytes**. If it does then it can over-write part of Page Maker itself, and this is likely to cause the program to crash.

Page Maker expects each page of text to be 24 lines long and 64 characters wide. If you try to load in a file wider than 64 characters, it will truncate it.

A page can be less than 24 lines, though, if it is terminated by a Form Feed (Chr\$12). Again, whilst a line is usually 64 characters wide, it can be less if it is terminated by a Carriage Return (CR, Chr\$13).

For the technically minded only, the end of file marker is assumed to be Chr\$26.

# The Sprite/Font Designer

## Loading 'Sprite II'

This is simply done by loading the first file on side 2 of the tape by entering:

**LOAD""** and then pressing **ENTER**.

Sprite II is a full featured program unto itself. It is probably the most powerful utility of its kind available for the Spectrum computers.

This program has been designed to allow you to create sprites up to 6 by 6 character squares in size. It allows you to load in a screen created with **Artist II** and then to 'grab' areas of that screen. You can animate the frames, mirror the sprite, invert it, outline it, and so on. Indeed, many of the features in **Artist II** are also here in Sprite II.

To gain some idea of the power of Sprite II, lets load up a screen\$ previously created with **Artist II**. The keys to press are exactly as they are on **Artist II**, and you can opt for mouse or joystick operation as normal.

First, then, select the menu item called 'STORAGE' and then select LOAD. Load in your previously saved screen.

Now select the item called 'GRAB'. You will see that you loaded-in screen has now appeared and there is a blue bordered window under you control on the screen. Use this window to select an area 6 by 6 in size to 'grab' from this screen. Having chosen it, press the 'set' key/button to confirm you selection and Sprite II will return you to the sprite editor screen.

You will see that the area of screen which you grabbed is now displayed both normal size in the area in the top left, as well as enlarged in the main area on the right side of the screen.

You are now free to modify the enlarged area pixel-by-pixel (dot-by-dot), seeing all the time the effect you are having on the un-enlarged version.

You do not, of course, have to deal with such large sprites. You can use the 'FORMAT SPRITE' option on the menu to chose what size you wish to deal with just a 3 by 3 character square sized sprite then you simply select this option and use the left and right keys (or your mouse/joystick) to alter the X value to 3, and then press 'set' and select a Y value of 3 too.

If having done this you select GRAB again, you will see that Sprite II intelligently inferred that you only wish to grab an area 3 by 3 from the main graphics screen.

SET allows you to put the sprite, you have created onto the main graphic screen. Using the 'set' key/button, you can place it on the screen with pixel accuracy, and do so several times over if you wish. The 'un-set' key/button gets you back to the main editor again.

## Animation

You can create up to 79 frames of a 3 by 3 graphic! To chose a new frame you simply place your cursor up by one of the arrows to the right of the actual upper lefthand area (above which is display FRAME X). You can use these arrows (select them and then use the 'set' key/button) to advance the frame number or reduce it.

To animate your frames you simply select the menu item 'ANIMATE'. When you do this you are presented with the display 'SPEED' in the upper left area. You can vary the speed by moving left and right as usual. The higher the number, the longer the delay between frames.

Having selected the speed you will then be asked

FROM?

and then:

TO?

Obviously, you are to put in the first and last frame numbers of the sequence of sprites you wish to animate. Pressing 'set' again will then cause the frames to animate until a key is pressed: they will rotate contiuously until a key is pressed.

## Turn,Invert,Mirror,Thicken,Outline,Scroll

These functions all behave very much as they did in the main **Artist II** program. It is advisable for you to just experiment with these features to gain a better idea of their uses and power. Note that there is an UNDO option on the menu as well as an OK one. The GRID option allows you to turn on an off the overall checkboard effect created by bright and non-bright squares. When on this effect gives you a clear idea of the character square boundaries. But they can be suppressed to allow you to see the sprite as it will appear without the checkboard effect over it.

## Saving and Loading Sprites

You can save and load sprites and frames of sprites using the options LOAD SPRITE and SAVE SPRITE in the STORAGE menu option. These options store all the information about the sprite and frame within sequence and so forth.

However, more than likely, when you have created your sprite and tested its animation (if it is to have any), you will then wish to save the graphic data simply as a long string of bytes. This is done by selecting the option SAVE FINAL. This option, as indicated, will save the 'raw' bytes of the sprites and frames that you have created, without information about their size, frame number, and etc.

# The Screen Compressor

At the end of side 2 of the tape you will find a program for compressing your screens created with **Artist II** so that you can get far more than usual in memory at the same time.

To load this program simply type: **LOAD ""** and press **ENTER**

Typically this program will allow you to compress a screen to between a third and half of its normal size (which for a full size screen is around 6,900 bytes).

You can compress several screens, and even compress selected thirds of screens. The program also allows you to store these screens or thirds/two thirds of screens giving each one a number, and then allows you to view a screen by simply selecting its number.

The program has a menu which allows you to chose to load a screen, view a screen, delete the last screen or save the finished block of screens.

If you wish to compress just one or two thirds of a screen then first press the 'C' key. You will be asked:

FROM THIRD?

And then:

TO?

If you want just the first third then enter '1' as the answer to both questions. Similarly, if you want the middle third, answer '2' each time. Answering '3' each time gives you the lower third, and the obvious combinations give you the two-third screen areas.

Note that compression is automatic following loading from tape or microdrive. You must therefore select the compression option **just before** you start loading.

The compressor will tell you how much free memory you have.

To use the compressed block of graphics load it in wherever you wish to call it. To decide which picture or part of a picture you want to call you must poke the number of the picture into the memory location two higher than the address you loaded the picture into. For example, say you load the compressed screen into memory starting at address 50000, then this BASIC program would allow you to recall the screen again:

```
10 CLEAR 49999
20 LOAD""CODE 50000
30 INPUT"PICTURE: ";X
40 POKE 50002,X
50 RANDOMISE USR 50000
60 PAUSE 4E4: GOTO 30
```

Line 60 simply waits for a key press before asking you for another picture to look at.

# Summary of Features and their use

## The 'pull down menus':

### General notes:

In any given menu an item which is in green means that the item in question cannot be selected (this may be because a device is not attached, or because logically that action cannot be actioned at that time).

Items you have selected, other than those which have an immediate effect, will appear as black against a pale blue background as opposed to the usual yellow background.

Which item you are currently pointing to will be reversed - that is, it will generally appear as yellow on a black strip.

## The menus:

### STORAGE

LOAD	Load in a screen of graphics (a SCREEN\$)
SAVE	Save the entire screen of graphics
VERIFY	Verify saved screen
CAT	Get catalogue of disc/microdrive (if in use)
ERASE	
OTHER/TAPE	Switch between tape and other storage media
SAVE FILL	Save a created fill pattern
LOAD FILL	Load a previously saved fill pattern
ZX PRINT	Print current screen to ZX Printer
LARGE DUMP	Do large dump (no grey scale)
SMALL DUMP	Do small dump (no grey scale)
GREY DUMP.L	Large dump with grey scaling/stippling
GREY DUMP.S	Small dump with grey scaling/stippling

### TYPEFACE

NORMAL	A normal typeface from the choice of fonts
SMALL	Smaller face from choice of fonts
BOLD	A bold typeface
GOTHIC	A gothic style typeface
FUTURE	A futuristic typeface

### MODES

INVERSE	Inverts pixels on the screen
OVER	Pixels are XOR'd with those already on screen
COLOUR	Puts current colour on screen when drawing/filling
PATTERN	Chose to draw with a brush in current pattern
PALETTE	Allows you to chose new attributes to work with



## SCREEN

CLEAR	Clears entire screen area (UNDO, undoes this)
DOWN	Moves screen down if it is UP
UP	Moves screen up if it is DOWN
VIEW	Allows viewing of entire screen area
PATTERN	Switches on a bright/non-bright checker pattern over screen to assist in seeing characters
UNDO	'Undoes' the last action(s) you did
OK	Up-dates the program so that UNDO cannot undo to a point before you chose 'OK'

## EXTRAS

FONT DESIGN	Design new fonts/characters
FILL DESIGN	Design new fill/paint designs
KEMPS MOUSE	Select Kempston Mouse operation
AMX MOUSE	Select AMX Mouse operation
KEYBOARD	Select keyboard operation
KEMPS JOYST	Select use of a Kempston Joystick

## WINDOW

CLOSE	Close the current window
MOVE	Move window around screen
CLEAR	Clear the current window (uses current attributes)
INSERT	Allows another screen to be merged in window
SCALE	Allows scaling of contents of window to size of another window.
TURN	Turn the image in window through 90 degrees
INVERT	Invert image in window
MIRROR	Mirror image in window
THICKEN	Thicken all lines/pixels within window
OUTLINE	Create outline around all lines/dots in window
SET INK	Set the INK colour within window
SET PAPER	Set the PAPER colour within window
SET BRIGHT	Set BRIGHT in window to current value
SET FLASH	Set FLASH in window to current value
SCROLL	Scroll image within the window area

## ICONS at bottom of screen:

**Bottom left hand section** - - these eight icons deal with the drawing of lines, circles, ellipses and rectangles. The first two allow you to either draw lines that follow on from one another, or ones that radiate from a single point. The second two allow the creation of circles (filled and not filled - note the current fill pattern will be used). The third pair are for creating ellipses (again filled and not filled), and finally the fourth pair allow you to create both filled and empty rectangles.

**Brush icon** - - chose this to select what type and size of brush you wish to draw with.

**Scissor icon** - - allows you to enter the 'Cut & Paste' mode for cutting out and manipulating irregular shapes.

**Magnifying glass** - - enter the enlargement mode

**Paint can** - - paint/fill an area with the current pattern

**'A' icon** - - opt to put text on the screen

**Dotted square** - - select to set up a window on the screen

**COL** - shows actual current attributes (select to bring up the 'palette' )

**Patterned area** - - shows current pattern for fill/paint (select to chose new pattern)

# APPENDIX 1

## Addendum to 48K/Plus version of Artist II

If you own versions V.1 or V.2 of **Artist II** for the Spectrum 48/Plus, then the following amendments may assist you in gaining additional features, assisting in printing of graphics, and so forth.

1. If you are using Interface 1 then you should select 'Opus' when the program asks you to just after loading.

2. If you are using an Opus or Interface 1 and the program is not functioning correctly with them then you should try breaking into the BASIC of **Artist II** (BASIC is an option in the upper left menu), and look at line number 97. If 'NOT PI' is in that line of BASIC then this should be edited to remove the NOT PI and replace it with 0 (a zero).

3. If you are trying to use an Epson compatible printer and it is not working properly with **Artist II**, then you can try POKEing the following two locations with either a '1' or a '6': 65180 and 65186. The results have not been found to be entirely predicatable across all so-called Epson compatibles, so you may have to try up to the entire 4 permutations of POKES. With the PageMaker you should try POKEing 64034 with either 1 or 6.

4. If you are trying to use your **Sprite Designer** with Micro Drives then you should remember to amend the BASIC so that it CLEARs RAM 200 bytes higher than the address it currently does. Also, when using either MicroDrives or disc drives (such as the Opus) you should be able to customise the programs on the tape yourself by inspecting the BASIC and changing all of the LOAD and SAVE commands to the Micro Drive or disc drive operating system equivalents.

5. Again in the **Sprite Designer**, you may find it useful to note that if you set the parameters for the first two frames of an animated sprite sequence, then the program will automatically set all the other frames to the same dimensions - set the first frame, then the second, then go back to the first to make the program automatically set the rest.

6. Saving and Loading fonts in **Artist II**. If you own V1.1 of **Artist II** you may well have some problems with saving and loading of fonts. If so, then you should select the BASIC option in the upper righthand menu of the main screen, and once back in BASIC you should do the following: First enter the following: LET B=number (where 'number' is one of the following 3 numbers depending upon which font (3,4, or 5) you wish to deal with).

number=62268 for font 3

number=61500 for font 4

number=63036 for font 5

Now enter GOT TO

72 to load from microdrive/disc

74 to load from tape

82 to save to microdrive/disc

84 to save to tape

7. Loading Micro Drive 'Writer' files in to the PageMaker: To do this you will have to add the following lines of BASIC:

```
2040 LET b=VAL "40960"
```

```
2041 OPEN #VAL"5";"m";n;n$
```

```
2042 LET d=93:GOSUB 2050
```

```
2043 LET d=(PEEK(d+b+2)+256*PEEK(d+b+3)-(PEEK(d+b)+56*PEEK(d+b+1))
```

```
2044 GOSUB 2050
```

```
2045 CLOSE#5:POKEd+b+1,26
```

```
2046 RUN 100
```

```
2050 FOR a=0 TO d:POKE(a+b),CODE INKEY$#5:NEXT a: RETURN
```

In line 2041 'n' is the number of your Micro Drive (usually 1 or 2), and 'n\$' is the name of the file you wish to load in.



