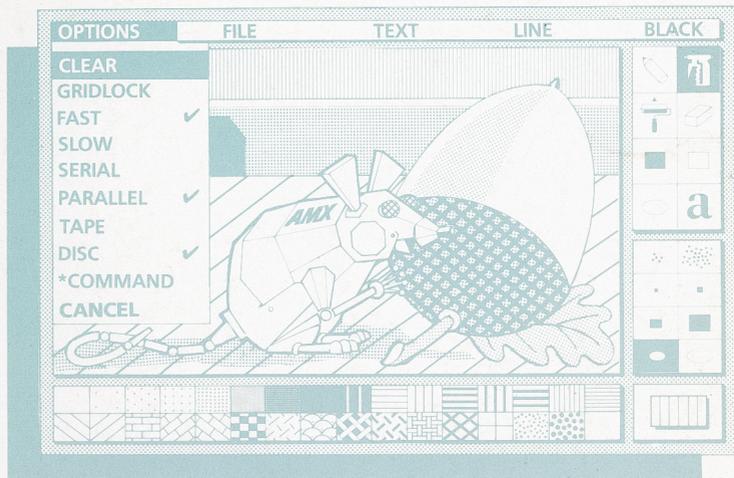
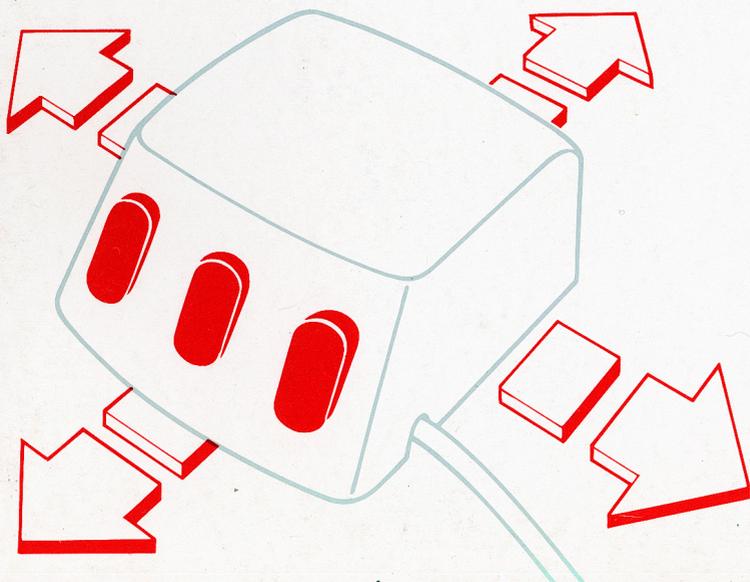


AMX ART



USERS GUIDE



AMX ART

Written by Peter and David Elliot

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1 INTRODUCTION

AMX ART is the most compulsive drawing program written for the BBC computer, and utilises to the full the amazing controllability of the AMX MOUSE and the advanced graphics facilities of the BBC computer.

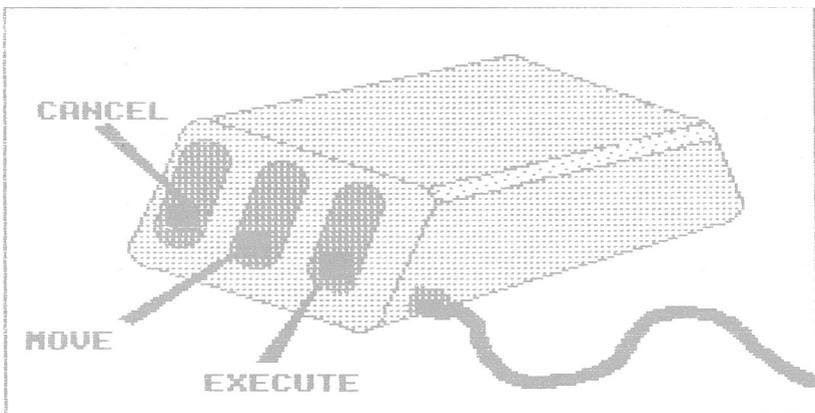
AMX ART has features hitherto only thought possible on computers costing thousands of pounds, including 'windows', 'pull-down menus', 'icons', and advanced 'CAD' facilities.

What are the uses of AMX ART? Well, the artistic uses of AMX ART are obvious, the program can be used to teach the principles of Sketching and can be used for the production of a wide range of Illustrations for various needs. Other uses include the production of small Architectural drawings, Engineering details, Kitchen layouts, Teacher's worksheets, family Xmas cards, etc. The range is only limited by your imagination!

2 HOW TO USE THIS GUIDE

We shall start by showing you some of the most exciting features of AMX ART to 'get you going', and then we shall describe in detail the various facilities available to you with hints and tips on how to use them to the best effect. We suggest you work your way through the guide - you will be amazed just how quickly your latent artistic talents will be revealed!

Throughout this guide, the Mouse buttons are referred to as EXECUTE, MOVE and CANCEL as indicated in (fig.1).



WARNING. This program is habit forming.

3 TECH REQUIREMENTS

AMX ART may be used on any BBC Model B computer, (any second processor should be switched off), and can be used with either disc or tape filing systems. Drawings can be saved for later use and can be printed out on any Epson compatible dot-matrix printer in either of t'NO sizes, 'dot-for-dot' (x1) size, or the useful)4' (xB) format.

For users with other types of non-compatible dot-matrix printers, a User Print option is available (see 5.2.2 later) so that user supplied screen dump routines may be utilised.

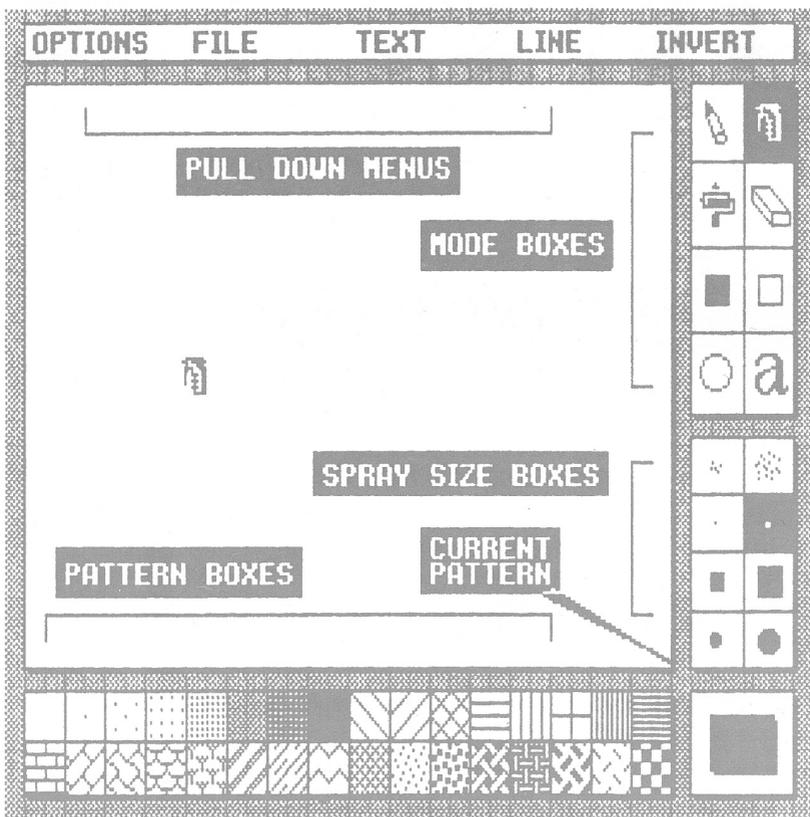


Figure 2 - Screen Layout

4 LETS GET STARTED

Load AMX ART by *RUN "ART" (or *ART with discs). This will run the program and present the screen shown in figure 2.

The drawing area is surrounded by menus which allow instant selection of any of the features available, by means of the Mouse buttons. Along the top of the screen are the pull-down menus which will be described a little later.

Down the side are two main areas, the MODE boxes, which allow selection of PENCIL, SPRAY, FILL, ERASER, BOX, FRAME, CIRCLE, and TEXT modes, and the SPRAY SIZE boxes, which allow selection of anyone of eight spray shapes for use with the spray mode.

Along the base of the screen are the PATTERN boxes which allow selection of anyone of 32 patterns for use with the spray or fill modes. The current pattern is indicated in the box at the bottom right hand corner of the screen.

4.1 SPRAY MODE

On loading you are ready to commence drawing in 'spray' mode! Simply move the Mouse around and you will see the 'SPRAY-GUN' cursor follow your movement on the screen. Pressing the EXECUTE button will produce a spray at the mouse position. Try a few 'doodles' to get the hang of the mouse movement.

The cursor on the drawing area reflects the current drawing mode, and when you leave the drawing area this will change into the 'POINTER' cursor which allows you to select any of the facilities available by simply pressing an Execute button.

Moving the pointer over the 'SPRAY SIZE' boxes and pressing the EXECUTE button will enable the selection of anyone of eight available spray sizes. This can be done at any time. Try it!

On loading, the spray pattern is black, but a different pattern may be selected at any time by moving the pointer over one of the pattern boxes at the bottom of the screen and pressing the EXECUTE button. The current spray pattern is indicated in the box at the bottom right hand corner of the screen.

Your page will now be covered in assorted 'doodles', let's clear the page for a new drawing. Move the pointer over the OPTIONS heading at the top of the screen and press the EXECUTE button. You will now be presented with a 'pull-down menu' as shown in (fig.3).



Figure 3 - Pull Down Menu

Moving the mouse will cause the inverted bar to move up and down the table of options. Simply move over CLEAR for now and press the EXECUTE button. This will remove the menu and prompt you for EXECUTE or CANCEL to make absolutely sure you want to clear the drawing.

Press EXECUTE to clear the drawing area to white ready to start drawing again.

4.2 FILL MODE

All the best graffiti artists prefer to select a suitable background for their work, so we will show you how to fill the page with the pattern of your choice. Simply move the pointer over the 'PAINT ROLLER' icon and press the EXECUTE button. You are now in 'FILL' mode, and on the drawing area you will have the 'PAINT ROLLER' cursor. Move off the 'paper' and select a pattern box at the bottom of the screen by pressing the EXECUTE button. Move back to the drawing area and press EXECUTE, and 'Hey presto!' the screen is filled with your pattern.

What! you don't like it? Simply press the CANCEL button and the pattern will be removed! This can only be used to undo the last fill operation, and is useful when filling shapes with pattern in case of a 'leak' - accidents happen to the best of us!

Selecting 'SPRAY' mode once more, and a pattern to your liking, you can really go to town! Remember you can CLEAR the page at any time.

4.3 ERASE MODE

Lets experiment with a few more of the drawing modes. Move the pointer over the 'eraser' icon and press EXECUTE. On moving back to the drawing area you will now have the ERASER cursor, and pressing EXECUTE will erase anything under the eraser, allowing you to remove mistakes. If as a result you erase the background pattern, simply select 'spray', and the appropriate pattern and 'spray' it back in again. There are other ways, but we shall discuss these later.

4.4 ERASE MODE

CLEAR the page and let's try the pencil mode. Select the 'pencil' icon by pressing EXECUTE. Moving back to the drawing area you will now have the 'PENCIL.' cursor and when you move the 'pencil' you will have a following line. Don't worry, nothing is drawn until the EXECUTE button is pressed!

First of all locate the pencil to the start of your line and press the centre MOVE button. The starting point of the line will now move to the selected point, and the line will be 'rubber-banded' to the current cursor position. Pressing EXECUTE at any time will 'fix' the line between the starting point and the cursor position, moving the starting point to the cursor position.

Try to draw a box shape and you may have difficulty in joining to your starting point accurately. Fear not! Help is at hand, there is a GRIDLOCK feature available.

4.5 GRIDLOCK

Let's try it - move to the OPTIONS menu and select GRIDLOCK. You will notice a tick appear on pressing EXECUTE, this denotes which features are currently selected, and is common to all the pull-down menus. Also select SLOW to get slow mouse response for more accurate positioning, although FAST is the more usual mode. Press the right hand CANCEL button to leave the menu. Should you ever select a menu in error, pressing CANCEL will always get you back to the previous mode.

Now when you move the 'pencil' you will be restricted to an invisible axa grid and you will find it much easier to draw shapes using straight lines. The PENCIL mode is in fact very powerful when used in conjunction with the LINE menu, but a full description appears later. After drawing a few shapes, try returning to the FILL mode and fill them with patterns. Remember you can 'undo' any FILL mistakes with the CANCEL button. Similarly you can select SPRAY or ERASER mode to get a wide range of effects, even spraying over one pattern with another!

4.6 BOX AND FRAME MODE

Let's experiment with the BOX and FRAME modes, - select the solid BOX icon and on returning to the drawing area you will now have a CROSS-HAIR cursor with rubber-banded lines following your movements. Move into the centre of the screen and press the MOVE button to establish a starting point.

On moving and pressing EXECUTE you will have solid boxes in the current LINE mode (Black, White, Inverted - see later).

Selecting the FRAME icon will similarly draw rubber-banded frames on the page, and this feature is most useful for technical drawings when used in conjunction with the GRIDLOCK feature.

4.7 CIRCLE MODE

Next, let's try the complex CIRCLE mode. First remove the GRIDLOCK function by reselecting as above. This is a powerful mode which is selected by moving the pointer to the CIRCLE icon and pressing EXECUTE. On returning to the drawing area you have a CROSS-HAIR cursor. Press the MOVE button and a circle will appear at the cursor position. Now hold down the CANCEL button and move the Mouse. The circle radius will now alter according to the vertical displacement of the cross-hair from the circle centre.

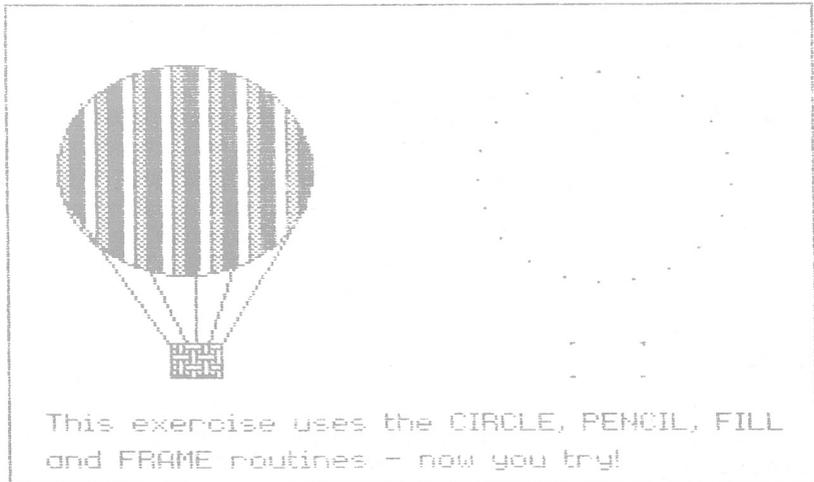
The circle can be relocated by holding down the MOVE button and moving the Mouse. When you are satisfied press EXECUTE to fix the circle. By alternately using the CANCEL and EXECUTE buttons it is easy to draw concentric circles. By alternately using the MOVE and EXECUTE buttons it is easy to draw several circles of the same diameter.

Finally we shall try the TEXT mode. Select the TEXT icon, and on returning to the drawing area you will have the I-shape TEXT cursor which can be positioned anywhere on the 'paper'. On pressing EXECUTE this will change to a normal underline cursor. Any text entered via the keyboard (the thing with all the keys which you used to use constantly) will now appear at the cursor position in the current TEXT style. If you are satisfied with the positioning press EXECUTE to fix in position, otherwise CANCEL will erase that line of text for re-positioning.

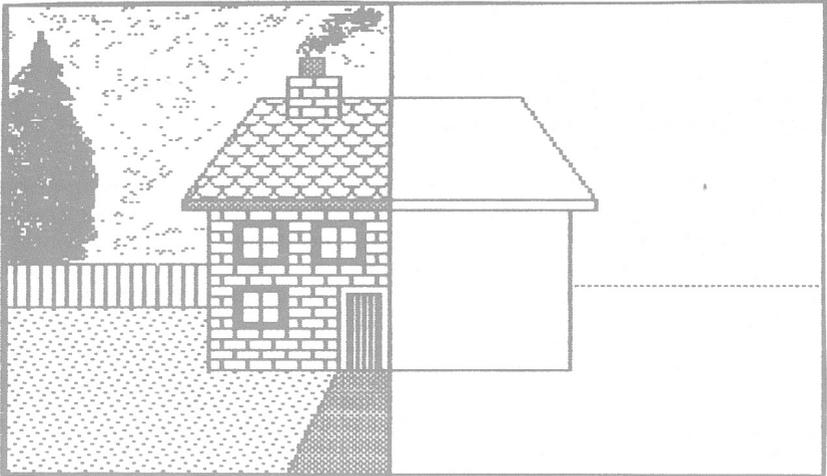
The TEXT style may be chosen from six using the pull-down TEXT menu at the top of the screen. Select Normal, Bold, or Very Bold type, and Italic on/off. Press CANCEL to leave the menu.

GRIDLOCK is a useful feature to use with TEXT as it allows areas of text to be lined up accurately horizontally and vertically.

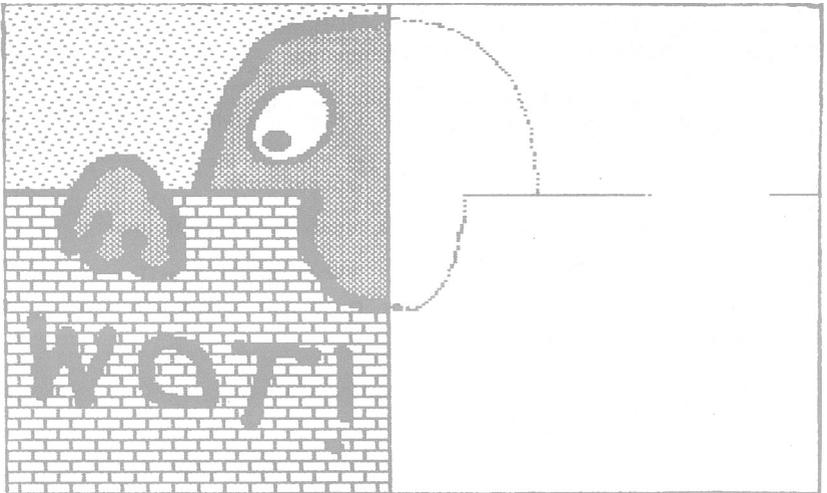
By now you should have some idea of the capabilities of AMX ARTWORX and perhaps this is the time to load some of the exercise pieces supplied with the program to give you some practice! Simply select the FILES menu, LOAD option, and when prompted, type in the name of the piece (Ex1, Ex2, or Ex3) followed by Return. You can now practise completing the pictures.



Exercise one



Exercise two



Exercise three

Remember - with AMX ART you 'get what you see', it doesn't matter how you achieve your drawing, when you are satisfied you can save it or print it out!

5 REFERENCE

Now we shall detail the facilities of AMX ART and give hints on how to use them to their best effect.

5.0 THE PULL DOWN MENUS

The pull down menus are available at any time during the drawing process, and are selected by moving the cursor to the top of the screen over the menu heading required, and pressing the EXECUTE button. The current option is shown as an inverted bar, and moving the Mouse moves the bar up and down the menu. Select the required option by pressing EXECUTE. Current options are shown by a tick.

Where two options are opposites, as in FAST and SLOW, selecting one option will automatically de-select the other. To leave a menu after making selections, or should you select a pull-down menu in error, you can return to the drawing by selecting the CANCEL option and pressing EXECUTE. This is duplicated by the option of pressing the CANCEL button.

5.1 OPTIONS MENU

Selecting OPTIONS at the head of the screen will reveal the OPTIONS menu (fig.4).

This menu contains three types of option:-

- Options such as CLEAR, GRIDLOCK, FAST, and SLOW, affect the way the drawing facilities operate.
- Options SERIAL, PARALLEL, TAPE, and DISC are used to set up the program to match your hardware configuration.
- COMMAND allows you to use Operating System commands such as disc filing operations, set up your printer, etc.

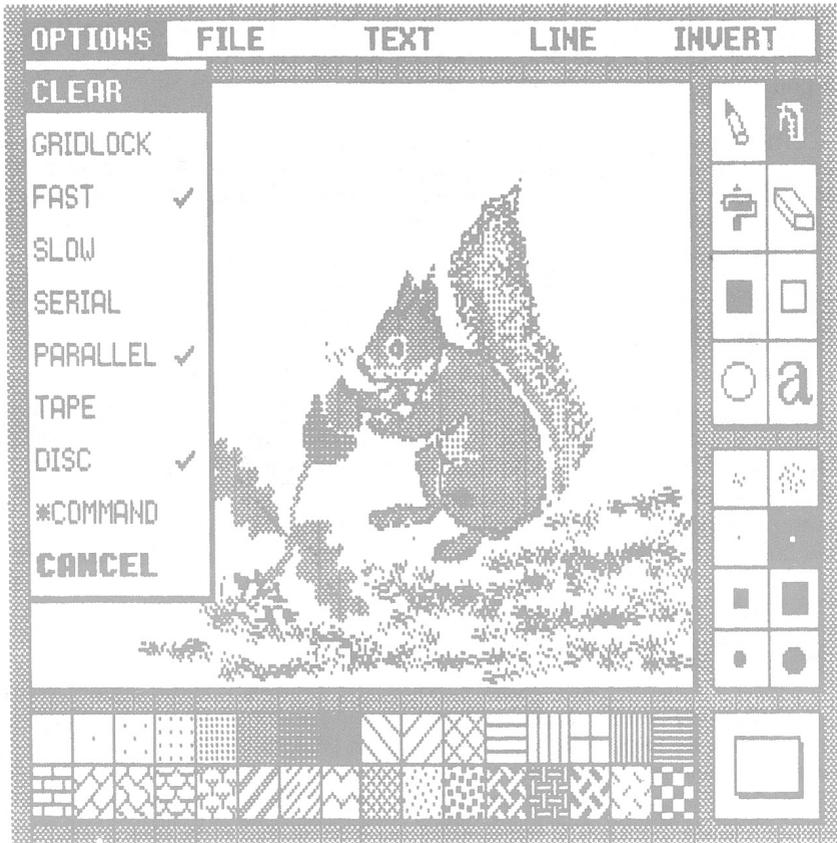


Figure 4 - The OPTIONS Menu

5.1.1 CLEAR

CLEAR is used to wipe the drawing area 'clean' in order to commence another drawing. Simply select by pressing EXECUTE, and because of the disastrous effect this could have on your drawing, you are prompted "Execute or Cancel". This gives you a chance to change your mind if you have selected the option in error. Pressing EXECUTE once more will remove the menu and clear the drawing area.

5.1.2 GRIDLOCK

GRIDLOCK is a useful option which is used in conjunction with the PENCIL, BOX, FRAME, CIRCLE and TEXT modes, and restricts cursor movement to an invisible 8x8 grid.

This allows accurate lining up of points, 'homing in' on previous points, easy drawing of horizontal, vertical and diagonal lines, and lining up of areas of text. GRIDLOCK is especially useful when doing technical drawings as opposed to 'sketches'. Reselecting GRIDLOCK will remove this facility.

5.1.3 FAST/SLOW

FAST and its opposite SLOW are used to control the response of the Mouse to your hand movement. Selecting one will automatically deselect the other. SLOW is mainly used for putting in fine detail on a dot by dot basis. FAST is the default mode and the one usually used.

5.1.4 FAST/SLOW

SERIAL/PARALLEL allows you to set up the program to suit your printer. SERIAL sets the computer to print via the RS423 port for printers with Serial interfaces. Any special requirements of the printer can be set up using the * COMMAND option (see 5.1.6 later). PARALLEL sets the computer to print via the Centronics parallel port. Printers must be Epson compatible unless a specially written screen dump routine is being used. (See the FILES menu, 5.2.2 later.)

5.1.5 TAPE/DISC

TAPE sets the computer to use a tape filing system for storing your drawings. DISC sets the computer to use a Disc system. Filing systems may be changed at any time. Cassette systems default to the TAPE option, disc systems default to the DISC option.

5.1.6 *COMMAND

* COMMAND allows you to use the * commands available in the BBC Operating System. This allows you to catalogue a disc to ensure that you do not overwrite drawings previously SAVED, change drives, set up printers etc.

5.1.7 CANCEL

CANCEL appears on all menus, and allows you to exit the menu when you are satisfied that the options are correctly set.

5.2 FILE MENU

Selecting FILE at the head of the screen will reveal the FILE menu (fig.5). This menu contains two types of option. The first enables LOADING and SAVING drawings to the current filing system as selected by the OPTIONS menu. The second allows PRINTING out of the drawing in one of two sizes on a printer selected by the OPTIONS menu.

5.2.1 LOAD/SAVE

LOAD allows you to load a drawing previously SAVED on disc or tape for editing or printing out.

You will be prompted for the drawing name which is followed by the Return key. You are then prompted for EXECUTE or CANCEL, which allows you to change your mind. Obviously, on loading a new drawing your existing drawing is lost!

SAVE allows you to save the drawing on screen to disc or tape. You will be prompted for the drawing name which is followed by the Return key. You are then prompted for EXECUTE or CANCEL, which allows you to change your mind. After saving, your drawing is retained on screen for further work if required.

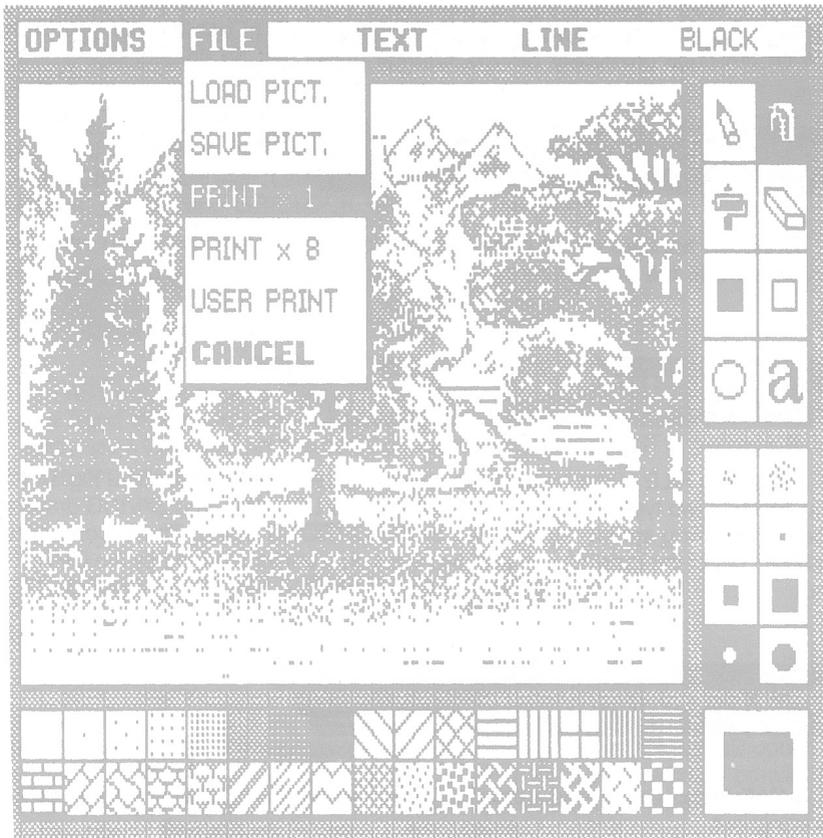


Figure 5 - The FILE Menu

5.2.2 PRINT

PRINTx1 allows you to dump the drawing to a dot-matrix printer on a dot-for-dot basis, via the Serial or Parallel interface as set by the OPTIONS menu (see 5.1.4 above). The default value is for a Parallel interface. The resulting printout is upright and centered on the page. A series of pictures printed out will form a continuous strip down the paper, so the line feed should be used to separate the drawings as necessary.

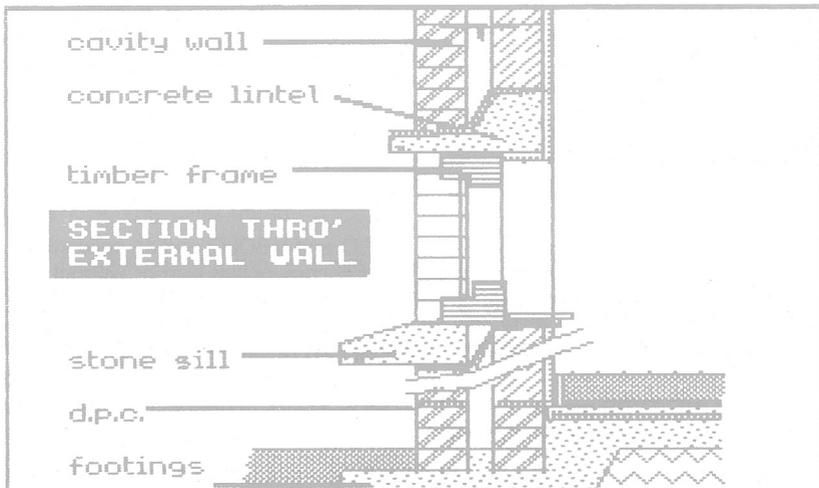
PRINTx8 allows you to dump the drawing to a dot-matrix printer in an enlarged version. The resulting printout is approximately A4 size and again a series of pictures printed out will form a continuous strip down the paper.

USER PRINT allows disc users without an Epson compatible printer to use their own screen dump routine. The routine is called as *RUN "XDUMP" and users should add their screen dump routine to the disc under the file name 'XDUMP'. This routine should use memory locations &5000 to &5800 and no other locations.

If your Epson compatible printer is not set up to give an automatic carriage return line feed, then you should call up the * command on the options menu and type in * FX 6,0 which will give you carriage return line feed.



AMX ART 1



AMX ART 2

Selecting TEXT at the head of the screen will reveal the TEXT menu (fig.6). This will reveal a choice of three basic text styles used in the TEXT mode.

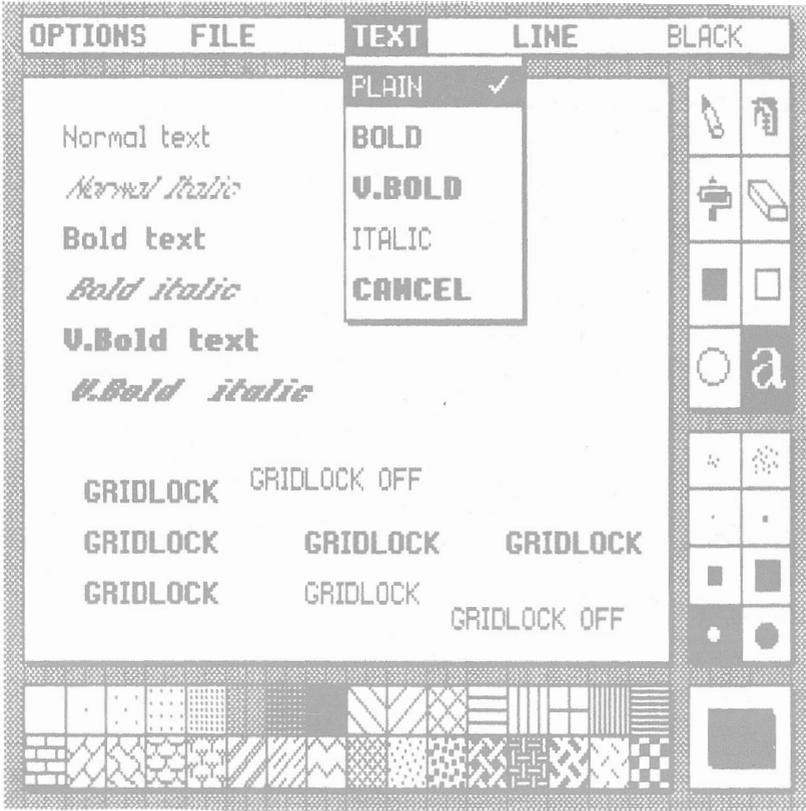


Figure 6 – The TEXT Menu

The styles available are:-NORMAL, BOLD, and VBOLD, and an optional ITALIC font. Anyone of the three styles may be used in conjunction with or without ITALIC font. The current Text alternatives selected are indicated by ticks.

Selecting ITALIC will toggle the Italic font on or off.

The LINE TYPE prompt (see 5.4 below) is always printed in the current TEXT style, and can be used as a reminder.

Select CANCEL, or use the CANCEL button to exit the menu when you are satisfied with the selections.

Selecting LINE at the head of the screen will reveal the LINE menu (fig.7).

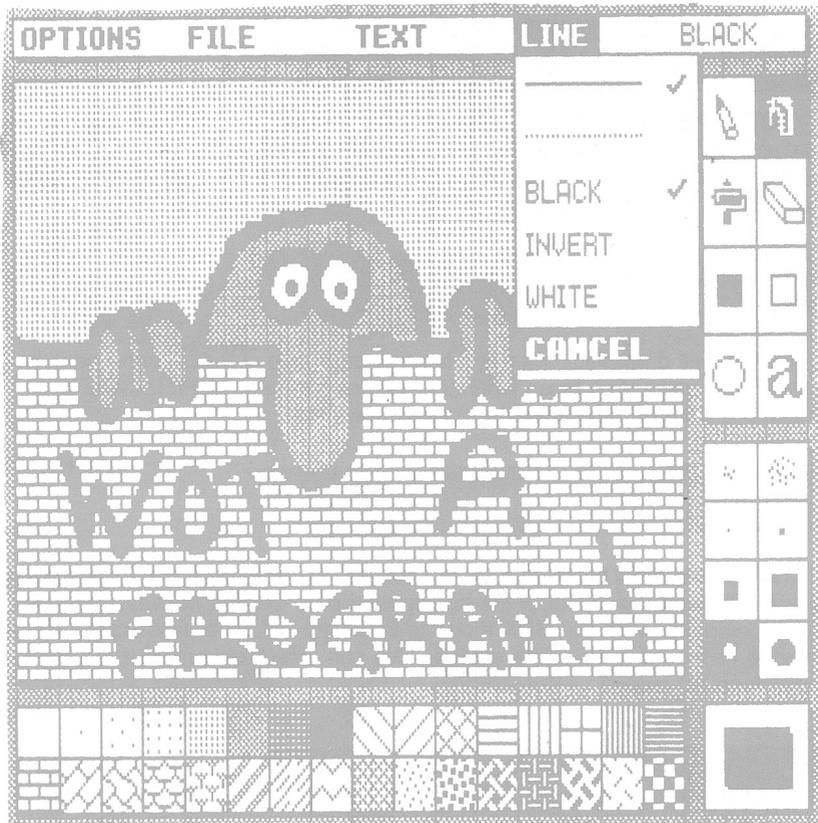


Figure 7 - The LINE menu

This will reveal a choice of two basic line types, SOLID or DOTIED, and three line 'colours' BLACK, INVERT and WHITE. These are used in conjunction with the PENCIL, BOX, and FRAME modes. The current LINE type, TEXT style and font is displayed continuously at the top right of the screen.

5.4.1 SOLID LINES

SOLID line type may be used with the PENCIL, BOX, FRAME, and CIRCLE drawing modes, and obviously draws a full line in the current line 'colour'.

5.4.2 DOTTED LINES

DOTIED line type may be used with the PENCIL, and FRAME modes only. Should you attempt to select BOX or CIRCLE modes when in the DOTIED line type, you will be warned this is not available! This draws dotted lines using alternate dots and spaces in the current line 'colour'.

5.4.3 BLACK LINES

BLACK will draw black lines and boxes irrespective of the background colours, and should be used at all times when it is intended to use the FILL mode to fill the shape with a pattern, otherwise the pattern may 'leak'.

5.4.4 INVERTED LINES

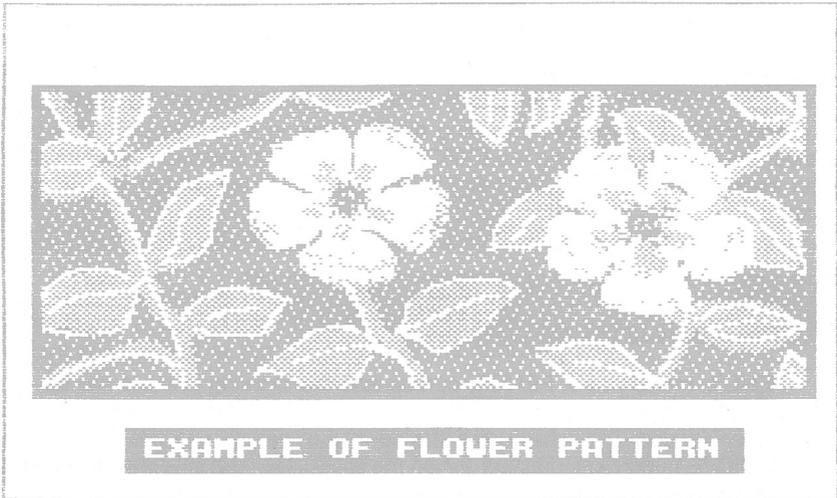
INVERT will draw black on a white background, white on a black background. That is, it will invert the colour of the background over which it passes. This can be used in conjunction with the BOX mode to invert the colour of rectangular shapes in sizes up to the full area of the screen. This can effectively produce a further 30 patterns! (see 8.0 below).

5.4.5 WHITE LINES

WHITE will draw white lines and boxes irrespective of the background colours, and can be used to erase rectangular areas of the drawing when used in conjunction with the BOX mode.



AMX ART 3



AMX ART 4

6 MODE BOXES

The eight MODE boxes (fig.8) are down the right hand side of the screen, and allow selection of PENCIL, SPRAY, FILL, ERASER, BOX, FRAME, CIRCLE, and TEXT modes. Each contains an icon which graphically indicates the mode to be selected.

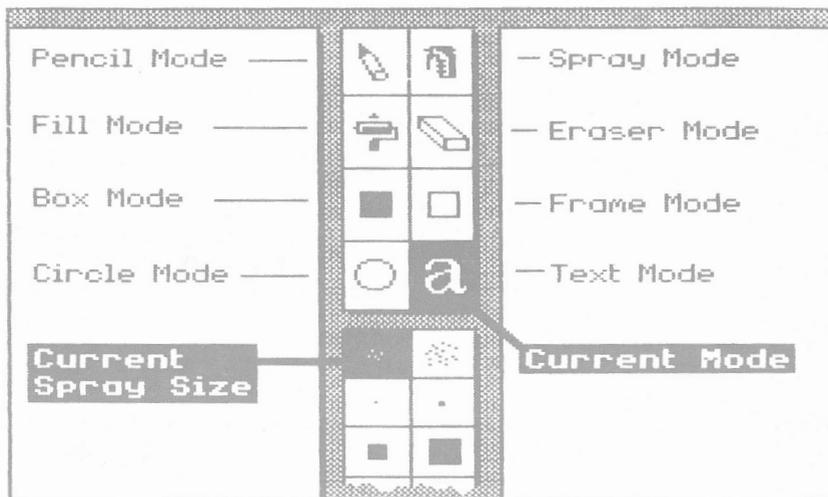


Figure 8 - The Mode Boxes

The mode is selected by moving off the drawing area and using the pointer to select the mode by pressing the EXECUTE button. The selected mode is indicated by an inverted box, and on returning to the drawing area the cursor will change appropriately.

6.1 PENCIL MODE

PENCIL mode has a PENCIL cursor, and the drawing point is the tip of the 'pencil'. Used in conjunction with the LINE menu (see 5.4 above), the pencil is followed by a 'rubber-banded' line which joins the tip of the 'pencil' and the previous point when the MOVE button was pressed. When the EXECUTE button is pressed, a straight line is drawn in the current LINE type and the starting point is moved to the end of that line.

To move without drawing a line press the MOVE button. This allows you to commence drawing from a new point. Curved lines are drawn by holding the EXECUTE button down as you move the Mouse.

GRIDLOCK (see 5.1.2 above) is a useful option which is used in conjunction with the PENCIL mode, and restricts cursor movement to an invisible 8x8 grid. This allows accurate lining up of points, 'homing in' on previous points, easy drawing of horizontal, vertical, and diagonal lines, and lining up of areas of text. GRIDLOCK is especially useful when doing technical drawings as opposed to 'sketches'. Reselecting GRIDLOCK will remove this facility.

6.2 SPRAY MODE

SPRAY mode has a 'SPRAY-GUN' cursor, and the drawing point is the tip of the gun. Used in conjunction with the eight SPRAY SIZE boxes below the MODE boxes, and the PATTERN boxes at the base of the screen they allow a remarkable range of drawing effects to be produced. Using the 'mist' spray it is easy to put one pattern over another to get shading effects.

To select a spray size, move the pointer over the size required and press EXECUTE. The selected spray will be indicated with an inverted box. To select a different spray pattern, move over the required PATTERN box at the bottom of the screen and press EXECUTE. The selected pattern is indicated in a box at the bottom right hand side of the screen.

Using the small dot spray it is easy to make 'freehand' sketches. If a grey pattern is used this can be the preliminary sketch before the final drawing is done.

6.3 FILL MODE

FILL mode has a 'PAINT ROLLER' cursor, and is used in conjunction with the 32 PATTERN boxes at the base of the screen. Moving onto the drawing area, the fill point is indicated at the top centre of the cursor.

Selecting a suitable pattern from the PATTERN boxes at the base of the screen, when the fill point is placed in a closed WHITE area and EXECUTE pressed, the area is filled with the chosen pattern in an up and down direction. If the drawing is an awkward shape, you will have to repeat the procedure until filling is complete.

Should you change your mind, or should the pattern 'leak', the last FILL operation can be 'undone' by using the CANCEL button.

6.4 ERASER MODE

ERASER mode is selected by the 'ERASER' icon, and on entering the drawing area this is replaced by a SQUARE cursor. On pressing the EXECUTE button, the precise area beneath the cursor is erased to white. To erase a sizeable area, simply hold down the EXECUTE button whilst moving the Mouse.

Two other ways of erasing areas of the screen are by using the WHITE BOX (see 5.4.3 above), or by selecting SPRAY mode with a white pattern and a small spray size. (This can be used to erase individual dots if necessary).

6.5 BOX MODE

BOX mode is indicated by a solid black rectangle icon, and on the drawing area it is replaced by a CROSS HAIR cursor. It can be used in conjunction with the BLACK, INVERT, and WHITE line 'colours' and the SOLID line type.

On entering the drawing area, a rectangular frame is 'rubber-banded' to the cursor position. To draw a rectangular box, simply move to one of the required corner positions and press MOVE. Moving the mouse will now produce a rectangle from that point.

Pressing EXECUTE will Draw the box in the current line colour. As indicated above, this can be used to invert areas of the screen in INVERT, or erase areas when in WHITE.

6.6 FRAME MODE

FRAME mode is represented by an open rectangle icon, and on the drawing area it is replaced by a CROSS-HAIR cursor. FRAME can be used with both the SOLID and DOTIED line types, and in the BLACK, INVERT and WHITE line 'colours'.

On entering the drawing area, a rectangular frame is 'rubber-banded' to the cursor position. To draw a rectangle, simply move to one of the required corner positions and press MOVE. Moving the mouse will now produce a rectangle from that point. Pressing EXECUTE will draw the rectangle in the current line colour.

6.7 CIRCLE MODE

CIRCLE is represented by a circular icon, and on entering the drawing area this is replaced by a CROSS-HAIR cursor. The cursor is positioned on the drawing area by moving the mouse, and on pressing the MOVE button a circle of 12 dots radius the first time used, or equal to the last radius used will appear. By pressing the CANCEL button, and moving the mouse, the radius will alter according to the vertical displacement of the cursor from the centre of the circle.

The circle can be relocated by holding down the MOVE button as you move the mouse. When you are satisfied, press EXECUTE to fix the circle. By alternately using the CANCEL and EXECUTE buttons it is simple to draw a series of concentric circles. By alternately using the MOVE and EXECUTE buttons you can draw several circles of the same diameter anywhere on the drawing surface.

CIRCLE can only be used with the SOLID line type and the BLACK and WHITE line 'colours'.

6.8 TEXT MODE

TEXT mode is represented by a small "a" icon, on the drawing area this is replaced by an 'I' cursor. TEXT can be in anyone of three styles and in upright or ITALIC mode (see 5.3 above) as selected by the TEXT menu.

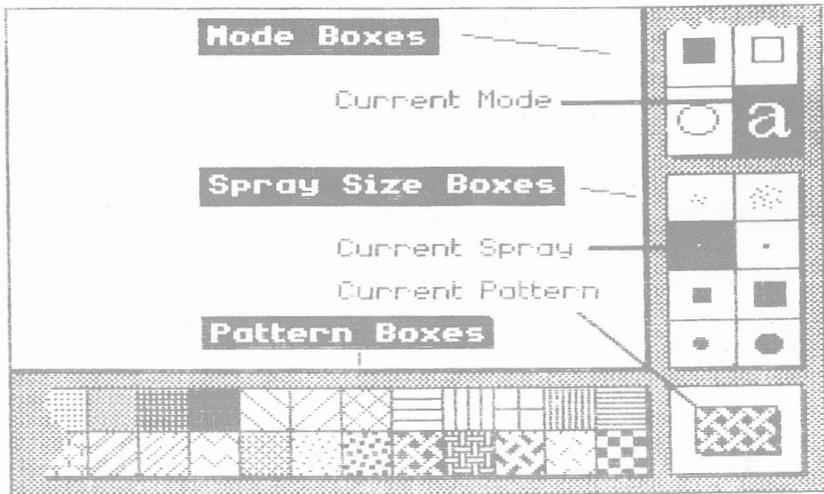
The cursor may be positioned on the drawing area by moving the mouse, and to commence entering text press the EXECUTE button. The 'I' cursor is replaced by the standard 'underline' cursor, and text is now entered via the computer keyboard. Should you try to type off the edge of the drawing area, a 'beep' will be heard and the program will not accept any more characters. At this stage you have two choices, either press the Return key to go to the line below, or press the CANCEL button to erase the line and return to the 'I' cursor so as to relocate the text.

GRIDLOCK (see 5.1.2 above) is a useful feature when entering text as it allows various areas of text to be lined up easily, both vertically and horizontally.

7 THE SPRAY SIZE BOXES

Below the MODE boxes are eight SPRAY SIZE boxes which are used in conjunction with the SPRAY mode (see 6.2 above). The appropriate spray size is chosen with the pointer and EXECUTE button, and the current spray size is indicated by an inverted box.

Naturally, any spray size may be used with any pattern, and a myriad of effects can be achieved. The top 'NO' options are 'mist' sprays, and can be used to mix patterns and to achieve shading effects.



8 THE PATTERN BOXES

At the bottom of the screen are the 32 PATTERN BOXES, (fig.9) which are used in conjunction with the SPRAY and FILL modes as described above (6.2 and 6.3). Various densities of dots ranging from white through greys to black are available, together with vertical, horizontal, diagonal and grid lines.

Also available are B.S.1192 standard building materials symbols, and an assortment of 'specials' such as bricks, tiles, basketweave etc. Remember, these can be inverted from black to white by using the INVERT BOX mode (see, 5.4.4 above). The current PATTERN selected is always indicated in the box at the bottom right hand corner of the screen.

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NOTES

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