Amstrad

CPC

Schneider

Melbourne House

MelbourneDraw

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Melbourne Draw

a graphics program for AMSTRAD CPC Computers

Programmed by:

ANDREW COLIN
CHRIS MADEN
JON R MALONE

Demonstration pictures by:

NEIL BAIRD

Published by
Melbourne House
60 High Street
Hampton Wick
Kingston-upon-Thames
Surrey KT1 4DB
United Kingdom

96/100 Tope Street, South Melbourne 3205, Victoria, Australia

1. INTRODUCTION

The MELBOURNE DRAW graphics package is a software tool for drawing pictures on the AMSTRAD CPC computers. It is based on the successful GRAPHIQL program for the Sinclair QL.

With MELBOURNE DRAW you can draw full screen pictures in any of the three modes or resolutions of the AMSTRAD. Any picture can be saved on tape or disk and can be incorporated into other programs: for example, as the background picture for a game or an illustration for educational software. Finally, facilities are provided to reproduce your picture on a dot matrix printer.

This booklet is divided into two sections. First comes a tutorial introduction to MELBOURNE DRAW with examples for you to try out.

Secondly, there is a reference manual. Like all reference manuals, it states but does not explain. It is intended to provide a memory jog for someone who is already familiar with the package.

2. FUNDAMENTALS

MELBOURNE DRAW draws pictures on the screen using dots of coloured light or pixels. These pixels vary in size depending on which of the three AMSTRAD modes or resolutions you choose. High resolution gives you fine detail but limits you to two colours; medium resolution allows you to use four colours; low resolution gives you a relatively coarse picture but allows you to use up to sixteen colours. Choosing which resolution to use depends on the type of picture you intend to paint.

2.1 Starting up

To load MELBOURNE DRAW, set up the AMSTRAD. Open the holder on the cassette unit, take out any tape which might be there already and insert the MELBOURNE DRAW program tape, the label uppermost and with the tape window towards you. Close the holder and press the ENTER key while holding down the CTRL key. Then press down the PLAY button on the front of the cassette unit until it locks, followed by any other key on the keyboard. The program will take about 15 minutes to load.

2.2 Commands

When loading is complete, the program shows you a title screen. When you hit any key, you get an initial screen which is blue with a yellow cursor in the centre.

MELBOURNE DRAW responds to a number of commands which can be selected in one of two ways:

* By choosing an item on a drop-down menu
* By typing in one, two or three characters on the keyboard

The first method has been designed to make it easy for you to learn to use the program. As you become more familar with it, you may prefer to dispense with the menus and type in the commands yourself.

2.3 The Menu bar and drop-down menus

Press the ENTER key once. You will see a menu bar displayed in yellow across the top of the screen.

Fig.1 Menu bar

control	colours	lines	blocks	textures	areas	files

These words are menu titles and refer to groups of commands in MELBOURNE DRAW - line drawing, colour selection, textures etc. The first menu title, CONTROL, is HIGHLIGHTED, printed in yellow letters on a blue background. Press the right arrow key or push the joystick to the right and you will see the various menu titles highlighted in turn. The cursor keys (or joystick) can move you forwards or backwards along the menu bar.

Each menu title has an associated drop-down menu. The various menus together with their titles are illustrated in Figure 2.

Fig.2 Drop-down menus

control
RESolution
WIpe
Crib On/off
Crib Down
Crib Up
Ind. List
Alt. Cursor
Cursor col.
Alt. Noise
Mag. On/off
Mag. Move

lines
Point Trail
LIne
Rubber Band
BOx
CIrcle
ELlipse
Zap
airbrush
TeXt

textures
On/off
Define
Plant
Trail
Step
Indicate
Use
Erase

colours
choose colour
Ind. Colour
Jam mode
Xor mode
Change Colour
Flash colour
Border colour
Colour List

blocks
Remember
Copy
Drag
Mirror Horiz.
Mirror Vert.
Mirror Both

areas
Block Mark
Find Area
Fill Colour
Fill Texture
Colour Swap
Colour Merge

files
Save Picture
Save Textures
Load Picture
Load Texture
Set Speed

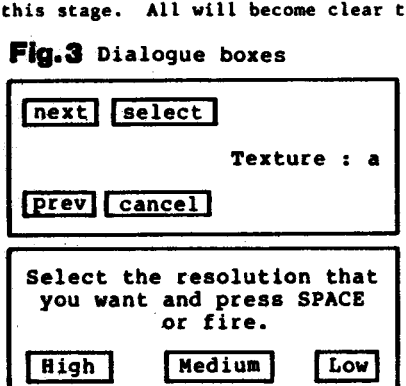
To display a menu, move the cursor or joystick along the bar until your selected menu title is highlighted. Then press the space bar, fire button or ENTER key . The menu 'drops-down' with the first item on the list highlighted. Continue down the menu and up again using the arrow keys or joystick, noticing how each item is highlighted in turn. When you reach the option you want, press the space bar or fire button. The menu screen immediately clears and you are returned to the main drawing screen with the yellow cursor still exactly where you left it. Any picture being composed on the screen is not permanently affected by calling up the menu bar and menus.

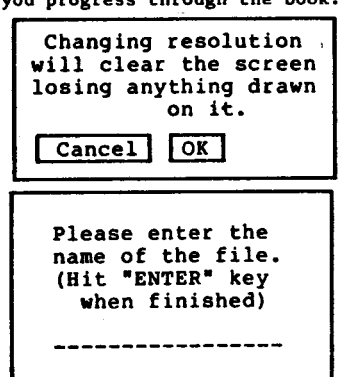
If you make a mistake and go down into the wrong menu, you can always get out of it by pressing ESC once. This will take you back to the menu bar and you can travel along to the menu you want and try again. Press ESC twice and you are returned to the main drawing screen. You should note that once you have started to highlight the items on a menu, you can only get out of the menu by taking a specific action - by choosing an item with the space or fire button or by ESCaping.

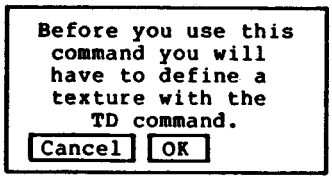
Capital letters are used in the drop-down menus to help you remember the equivalent keyboard command. For example, you can draw a circle either by selecting CIrcle or by typing the two letters CI directly onto the keyboard. You can type ci in lower case if you want. There is no need to use the SHIFT key.

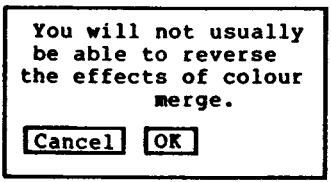
When you choose certain options on the drop-down menus, you are given a DIALOGUE BOX in the centre of the screen. Dialogue boxes demand a specific response from you. You must choose some course of action or acknowledge that you understand the message in the box. For example, 'colour choice' will give you a box with sixteen squares of colour to choose from. Sometimes dialogue boxes warn you of the consequences of your choice. You can abandon the action or confirm that you do indeed want to proceed. In all cases the dialogue box will remain on the screen until you have responded to it. Figure 3 gives examples of all the dialogue boxes it is possible to encounter. Don't worry if they don't mean much to you at this stage. All will become clear to you as you progress through the book.

Fig.3 Dialogue boxes









2.4 Accept and the ESC Key

From now on we shall use the word 'Accept' to mean the space bar or fire button. Accept is pressed to select an option on one of the drop-down menus. It is also used to 'freeze' a graphics operation. For example, you may want to draw a circle. You have selected the circle option and are using the cursor keys to expand and contract your shape until it is the size you want. As soon as you are satisfied with it, press Accept and the circle is drawn permanently on your screen.

You can always get out of trouble by pressing the ESC key one or more times. It sometimes happens that you select an option which you did not really want. Sometimes the machine appears to be stuck because it is waiting for you to complete a command and sometimes it will groan at you because you have made a mistake. The ESC key allows you to start afresh, returning you to the menu bar or to the main drawing screen.

2.5 The Demonstration pictures

MELBOURNE DRAW comes with two demonstration pictures. To display them, make sure that the main program has already been loaded.

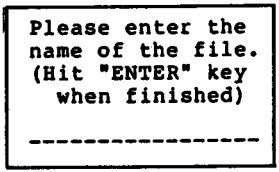
* Turn over the program tape and place it in the cassette unit, rewinding it back to the beginning.

* Bring up the menu bar by pressing ENTER.

* Select the menu title, files, and press Accept.

* Select Load Picture and hit Accept. The drop-down menu and menu bar is replaced by:

Fig. 4



* Type in demo1 (five key presses) using the DEL key to erase any mistakes and then ENTER. The message:

Press PLAY then any key

appears at the top of the screen.

* Press down the PLAY button on the cassette unit followed by any key. The picture will be loaded into the AMSTRAD, taking about five minutes.

The second demo picture, demo2, can be loaded in the same way. Calling up the menu bar while the first picture is still on the screen will appear to corrupt the display. This is because you are temporarily switching out of the low-resolution multi-colour mode used for the picture to the high-resolution mode used for the menus. As soon as you have finished telling the program to load the new picture - or to carry out any other option - the menus are switched off and the picture is restored.

3. BASIC DRAWING TOOLS

3.1 The Cursor

The cursor is your pencil or paintbrush. It shows the system exactly where the points, lines and areas you draw are to be placed.

The cursor can be moved about the screen by using the arrow keys. You will see that the actual movement of the cursor is very small. Each keystroke represents a single pixel.

You can move the cursor a number of pixels at a time by holding down the SHIFT or the CTRL key while you use the arrow keys. SHIFT and an arrow key move the cursor a large distance (32 pixels) while CTRL and an arrow key move the cursor a smaller distance (8 pixels). Holding down both the CTRL and SHIFT keys at the same time as the arrow key will move the cursor in steps of 40 pixels. This could be useful if you want to get to another part of the screen quickly.

Try running the cursor off the top of the screen. You will see it appear at the bottom. This effect is called 'wraparound' and it works for left and right movement as well as for

up and down. Remember that it will sometimes be quicker to use wraparound to get from one side of the screen to the other than to use the most obvious across-screen route.

If you have a joystick, you can use it to move the cursor around the screen. Just push the stick in the direction you want to go.

3.2 Resolution

As has already been mentioned, the AMSTRAD can draw pictures in three different resolutions. These are:

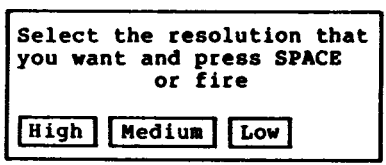
High resolution : 640 x 200 pixels. Only two different colours can appear on the screen. Good for technical or precision drawings.

Medium resolution : 320 x 200 pixels. Four colours permitted. Clever shading can be used to give the illusion of more.

Low resolution : 160 x 200 pixels. Sixteen colours permitted.

To change resolution, select the RESolution option on the control drop-down menu. The dialogue box appears:

Fig.5



Use the cursor keys or joystick to highlight your choice, confirming it with Accept. A warning dialogue box is then displayed. Select OK to confirm your choice and hit Accept again. The screen is now cleared with the cursor placed in the centre, set in the resolution you have chosen.

Resetting or changing resolution always clears the screen - it will delete everything you have done and allow you to start afresh. You can also clear the screen by using the WIpe command (keyboard command WI). See Section 10.2.

You should choose the resolution before you start drawing a picture, since there is no simple way of converting pictures from one resolution to another. The default resolution, selected automatically if you don't do anything about it is Medium.

3.3 Choosing Colour

There are many ways of drawing the elements of pictures such as points, lines areas and so on. In every case you must begin by choosing the right ink colour: this is rather like the artist putting paint on his brush before making the first stroke.

The number of different colours you may show in your picture at the same time depends on which resolution your drawing screen is in: 2 for high-res, 4 for medium-res and 16 for low-res. In all these cases, the colours can be selected from a palette of 27 built-in to your AMSTRAD.

To choose an ink colour, select the choose colour field of the colour menu. A dialogue box is then displayed which will give you 16 squares of colour. In low-res, the colours are all different, in high and medium-res the colours are duplicated. The square containing the current selected colour is outlined by a larger square. Use the cursor keys or joystick to move this larger square around until it is positioned over the colour you want. Now press Accept. The colour will remain selected until you choose a different one.

You may also choose the current ink colour by typing directly on to the keyboard. Hold down the CTRL key and then press a letter. The following table indicates the valid letters. These are the colours you get when you switch the machine one and load the program. You can change these colours and Section 5.3 explains how to do this.

	Resolution		
Preset colours	High	Medium	Low
Blue	A	A	A
Bright Yellow	B	B	B
Bright Cyan		C	C
Bright Red		D	D
Bright White			E
Black			F
Bright Blue			G
Bright Magenta			H
Cyan			I
Yellow			J
Pastel Blue			K
Pink			L
Bright Green			M
Pastel Green			N
Flashing Blue/Yellow			O
Flashing Pink/Sky Blue			P

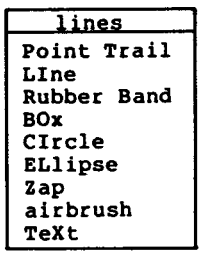
You can find out which colour a colour code corresponds to by using the IC command (short for Indicate Colour). When you type this, the border changes to the current ink colour. Now type the colour codes (CTRL and a letter) and the border will change accordingly. If you type a code which is not valid, the machine will groan at you. When you have found the colour you want, press Accept. The border will revert to its old colour and the current ink colour will be the one you have just chosen.

Pressing the ESC key at any point will make the border change back to its original colour and leave the current ink colour unaffected.

4. SIMPLE LINE DRAWING

Having selected a colour, move to the Lines menu title and press Accept. This will display the following drop-down menu:

Fig.6



4.1 Point Trail

When you select this option (or type PT) a trail of the current ink colour follows the cursor until the ESC key is pressed. You can select a new colour without leaving the command.

4.2 Line

This command allows you to draw a straight line between two points. Move the cursor to one end of the line and select LIne (or type LI). Now move the cursor to the other end of the line and hit Accept. A line in the current colour will be drawn between the two points. The line can be at any angle but if it is almost horizontal or almost vertical, it will appear rather jagged. This is a feature of all computer displays which use rows of pixels. If you don't want the line to be drawn, hit ESC to cancel the command.

4.3 Rubber Band

This command is also used to draw straight lines between points, but in a different way.

Put the cursor on one end of the line, select Rubber Band (or RB) and then press Accept. Move the cursor to the other end point. As you move you will see a line following you from the anchored end. The line is drawn in an arbitrary colour and uses the XOR mode - more of this later. It means that you can move it over detail on the screen without destroying anything. It is only when you terminate a rubber band command with Accept that the line is drawn permanently in the current colour.

Occasionally you may wish to abandon the rubber band operation. ESC will take you back to where you were.

4.4 Box

This is like the Rubber Band command but gives you a rubber box. Move the cursor near to the top left of the screen and then choose the BOx option (or type the command BO). Now move the cursor down and to the right. As you do so, you will see it being followed by an elastic box. When it is the size you want, hit Accept and it will be drawn permanently on the screen in the current colour. ESC will cancel the commmand.

4.5 Circle

First put the cursor at the centre of the circle you want to draw and select CIrcle. As you move the cursor a rubber circle follows you. When you have positioned the circle correctly, hit Accept and the circle will be drawn permanently in the current colour. The cursor will return to the centre of the circle.

As usual, you can abandon the circle drawing command by hitting the ESC key. The trial rubber circle will vanish.

4.6 Ellipse

Drawing an ellipse is similar to drawing a circle but requires an extra step.

* First position the cursor in the centre of your proposed ellipse.
* Select ELlipse on the drop-down menu (or type EL) and hit Accept.
* Move the cursor by a distance which specifies one of the radii of the ellipse and hit Accept again. The cursor will then automatically return to the centre.
* Move the cursor anywhere you want. The ellipse you are defining will grow and follow it.

When the ellipse is correct, hit Accept and it will be drawn permanently. Alternatively you can cancel the command with the ESC key.

4.7 Zap

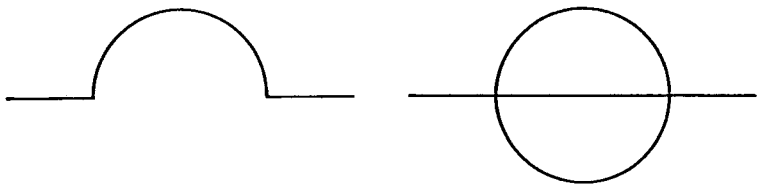
You can use the Zap command to change the colour of a line. A line is taken as any unbroken sequence of pixels of the same colour running in any direction. In the specific case where a line is drawn over a single colour background, Zap will allow you to delete it by changing it into the background colour.

Move the cursor to the section of line you want to change and select Zap on the menu. A dialogue box with a selection of colours will be displayed. Choose the new colour and hit Accept. The system will change the colour of the line in both directions until it reaches

a) the end of the line
b) the edge of the screen
c) a junction where the line splits into a number of parts

To give an example, suppose you want to plot a straight line with a large circular kink in it, like this:

Fig.7



One simple way to get this figure is to plot a line and circle, and then use Zap to erase the two unwanted segments.

When typing directly on to the keyboard, use the command Z, and then the colour code of the new colour (CTRL and a letter - see Section 3.3).

4.8 Airbrush

The airbrush is a replacement for a paintbrush. It produces a splattered circular pattern in a slightly haphazard way - rather like the spray produced by an almost exhausted aerosol. Because of the randomness in an airbrush, it is possible to merge a number of colours without producing a 'hard' line.

The airbrush can be switched on by choosing Airbrush or by typing AT (short for Airbrush Trail). It is switched off by pressing Accept or ESC.

4.9 Text

This command allows you to place text in your picture. Select the command or type TX and enter the characters you want to include. In XOR mode (see Section 5.2) you can delete mistakes by using the DEL key. In JAM mode you can use backspace. The text will be entered in the current colour and mode.

5. COLOUR AND SCREEN PLOTTING MODES

5.1 Colours revisited

The first two items on the COLOURS menu, Choose Colour and Indicate Colour, allow you to select your current ink colour or find out what this is by setting the border of the screen to that colour. Note that to choose colours via the keyboard, you only need to type CTRL and the appropriate letter code.

5.2 The JAM and XOR mode

In all of the examples we have used so far, the colour of any pixel is determined by the colour of the most recent ink used to paint it. This seems so obvious that it is hardly worth saying! We refer to this as JAM or 'forced' mode.

However, there is another mode for colouring pixels on the screen. This is called the XOR mode (pronounced 'EXOR'). With this mode the new colour depends on the old colour as well as the colour of the ink, but not in the way you'd expect!

The rules for mixing electronic paints are simply different from those which you may have learnt with the real (liquid) stuff. The AMSTRAD has a big range of colours - 27 in all - and the only way to find out what happens when you mix any combination of them is to try it and see. The one thing to remember is that if you paint over an area a second time with the same colour in XOR mode, the effect will be as if nothing had happened.

Select XOR mode on the colours menu or type X and then try the following experiment.

Draw a rectangle in any colour by plotting a series of lines with the Point Trail, LIne or Rubber Band commands. Select another colour and draw some more lines across the rectangle. Notice that where the lines intersect, a third colour becomes visible. Now, with the ink still set in the same colour, go back and draw over the lines you have just put on the screen. You will see that the lines are erased and the pixels of your rectangle are restored to their original state.

You have just shown that if you carry out some operation on the screen and then repeat exactly the same operation the screen reverts back to the original picture. This is true no matter how complex an operation you carry out. You will often be able to use this knowledge to your advantage.

The only exception to this rule is the airbrush. The random way in which the airbrush plots pixels cannot be repeated.
To switch the system back into the JAM mode, select Jam mode on the menu or type J.

5.3 Change Colour

Depending on which resolution you have chosen, you can have 2, 4 or 16 colours on the screen at the same time. You choose the colours you want from the colour dialogue box as described in 3.3.

Often the 'default' colours in the table will be quite sufficient for the job. Sometimes, especially with medium or high resolution, you may want to replace some - or even all- of the colours in the dialogue box by others taken from the full range of 27. This section describes how to do it.

Choose Colour Change - (keyboard command CC).

Select the colour you want to change from. Use either the colour dialogue box or CTRL and the letter code. The border of the screen changes (temporarily) to the colour you have just selected.

Next, change the shade of the border by using the up-arrow and down-arrow keys over and over again. Up-arrow gives you progressively lighter shades up to white while down-arrow goes the other way down to black.

When you arrive at a suitable colour, press Accept and the new colour will be exchanged for the old one in the colour dialogue box. From now you can use that colour in your picture.

As usual ESC will cancel the whole process.

To give an example, suppose you decide to discard bright yellow in favour of lime green. You should:

a) Select Colour Change
b) Select yellow (or type CTRL-B)
c) Change the border colour to lime green
d) Press Accept

Repeat this for other colours you want to change.

Your picture can now include lime green but not yellow (that is, unless you swap yellow back for another colour).

Electronic pictures are repainted afresh many times each second. This means that when you change a colour in the colour dialogue box, anything you may have drawn in the old colour will now appear in the new colour, even though it was drawn before the colour change. It might be a good idea to get your colour selection finished before you start painting the picture.

5.4 Flash Colour

You may have noticed that two of the paints in the low-res colour dialogue box are flashing combinations. In fact, any of the paints in the box can be combinations of two colours which flash alternately.

Setting up a new flashing paint is very similar to choosing a new colour.

a) Choose the Flash colour command (F) on the keyboard
b) Select the colour you want to change
c) Use the up and down-arrow keys to change the second colour
d) Press Accept to finalise your choice or ESC to cancel the whole procedure

5.5 Border Colour

The command changes the colour of the border. The keyboard command is B' followed by a colour code. Although other commands may temporarily alter the border colour - such as Indicate Colour - this is the only way to change it permanently.

5.6 Colour List

This command will be discussed in Section 9 since it affects the way blocks and textures are drawn.

6. BLOCKS

A useful feature of MELBOURNE DRAW is the ability to define an area so that it can be filled with texture or colour. The area can be either rectangular or irregular. We shall consider rectangular areas or blocks first.

6.1 Remember a block

To do something with a rectangular area, you must first let the computer know what it is. To do this, use the Remember command (keyboard command BR for Block Remember). This command lets you put a box cursor around the block. The box cursor works is exactly the same way as the rubber box described in 4.4.

Move the cursor to one of the corners of the area you want to define. Select Remember (BR), move the cursor to the opposite corner of the area and hit Accept. The box cursor vanishes. An internal memo has been made of the block you outlined which is safe against damage by any subsequent command, with the exception of another Remember or a texture command - more of these later. Furthermore, only one block can be remembered at any one time, no matter how small it may be.

The program can only remember a certain number of pixels and thus the size of your block is also limited. If the
area you try to outline is too big for the machine, the cursor will not move and the machine will groan at you.

The ESC can be used to leave the Remember command without storing a new area.

6.2 Block Copy

The command Copy, keyboard command BC, allows you to make a copy of the area you have marked and saved, putting it anywhere on the screen. Move the cursor to the top left-hand corner of the position you wish to place the copy, select Copy and then hit Accept. A copy of the remembered block will be planted at the new position.

6.3 Block Drag

The Drag command (keyboard command BD) is used to move parts of the picture about the screen, while leaving all other areas stationary. For example, you might have drawn a bird too high in the sky. Drag will let you bring it nearer the ground.

Before you use this command, you must identify the area you wish to move with the Remember command. The block should contain only the object you wish to move.

Once the area has been saved, Drag will replant a copy of the area at the current cursor position and flood the area it was taken from with the current ink colour.

6.4 Mirror Horizontal

The command -(keyboard command MH) - is similar to Copy except that the copy is drawn upside down, reflected about a horizontal line. Notice that the copy is reflected, not rotated.

6.5 Mirror Vertical

This command -(keyboard command MV) - is similar to Mirror Horizontal except that the area is reflected about a vertical line.

6.6 Mirror Both

This command -(keyboard command MB) - replants an area of screen after reflecting it both horizontally and vertically. This is the same as a rotation by 180 degrees.

7. TEXTURES

MELBOURNE DRAW provides you with powerful and sophisticated methods of filling areas with colours and textures.

In this book, the word 'texture' is given a special technical meaning. It is an area, usually rectangular, filled with any pattern you choose. As we shall see, such a pattern can be used, in various ways, to fill up whole areas of the screen no matter what their shape and size.

At any one time there can be up to 26 different textures in MELBOURNE DRAW, labelled by the letters of the alphabet.

When typing directly onto the keyboard, nearly all texture commands start with a T and many of them finish with the name of the texture referred to - a single letter.

7.1 On/Off

Many artists keep pads of scrap paper on which to scribble and to try out patterns and colour effects before putting them into the picture being painted. In the same way MELBOURNE DRAW gives you an alternative area of screen in which to define textures, to try out sketches or just to doodle harmlessly. This area is totally distinct from any drawing you may have on the main screen.

Clear the screen. You do this by resetting or selecting a new resolution. Now draw four or five vertical lines down the whole of the screen.

Select the (texture) On/off command or type TO. You will see the bottom half of the screen being erased and replaced by a blank screen. Do not worry, your original screen has not been lost - simply replaced with a doodle pad. The single horizontal line across the middle of the screen shows the divide bewteen the texture screen and the drawing screen.

Now move to the bottom half of the screen and draw some horizontal lines on it. If you now select On/off again or type TO, the texture screen will disappear and be replaced by your original picture. As you can see no damage has been done.

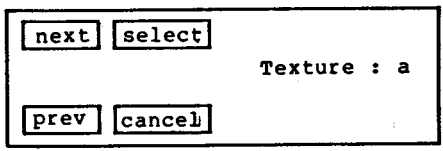
Put on the texture screen once more and notice that your previous doodles have reappeared.

Apart from showing you where the texture screen begins, there is no special meaning to the horizontal line. With a few exceptions commands will work above and below the line. Thus, if you want, you can draw a line from the normal screen straight through to the texture screen. For the most part such operations are unlikely to be useful, but, so as not to limit your ingenuity, we have permitted commands to cross this line. All exceptions will be noted.

7.2 Define

We shall now define a simple texture. Any rectangular area of the screen up to about 4000 pixels can be defined as a texture.

Make sure that the texture screen is on and that the cursor is inside the texture screen. Use the airbrush to spray an area of the texture screen and hit ESC to switch it off. Move the cursor to one corner of the airbrushed area and select the DEFINE command on the menu. A dialogue box appears of the screen.



To choose the name for your texture,select the next or previous fields by highlighting them and hitting accept. This advances the list up or down the alphabet. An asterisk next to the letter means that a definition already exists for that letter. When you reach the letter you want to use, (say, B, for example), choose the SELECT field with accept and your texture will be given that name. Choose CANCEL if you change your mind.

Now move the cursor to pull a rubber box over your chosen part of the texture screen. As soon as it is the size you want, hit accept, your airbrushed rectangle is now texture B. It is also set up as the current texture and will be used in all texture commands until you decide to change it.

The keyboard command to define a texture is TD. Again, you must make sure that the texture screen is on and that the cursor is positioned inside the texture screen at one corner of the texture you want to define. No prompt box appears when you type TD - you just follow the command with the name of the texture (A,B,C, etc.) pull the box over the area of the texture you want and then hit accept.

7.3 Plant

The Plant or TP (Texture Plant) command will put a single block of the current texture so that its top left-hand corner coincides with the current cursor position. This command is useful for filling small regular areas, or for dropping single items in particular places. For example, the texture might be a sketch of a tree and you could plant a tree anywhere on the screen using Plant.

Remember that JAM and XOR modes apply to this command so that you can XOR a texture over your design. You can also get some interesting effects for XORing textures over each other.

7.4 Trail

The Trail command, (keyboard command TT) combines the Point Trail and the Texture Plant commands.

Select Trail or TT and the current texture -in this case, your airbrushed square - will appear under the cursor. Move the cursor about the screen and you will see an airbrushed swathe. The texture you have defined is being used as a paintbrush. Every time you make a cursor movement, a copy of the texture is planted and the cursor is moved the size of the texture block in the appropriate direction. When you have finished with this command, you can come out of it with ESC.

Note that you may not use the CTRL or SHIFT keys while using this command but you can switch between JAM and XOR modes. As with Plant, interesting effects can be created by XORing textures on top of one another.

If you define a block of background colour as a texture, you can use the Trail command as an eraser. Make sure that you're in JAM mode, though.

7.5 Step

Until now, each texture planted with the Trail (TT) command caused the cursor to move a distance determined by the size of the texture block.

If you wish, you may specify the step distance for a texture trail. This will give you control over the distance the cursor moves whenever a texture block is planted.

To set a step size for a texture use the Step command (keyboard command TS). You will be shown the box cursor which you use to outline the step and repeat size. Hit Accept when you have selected the step size you want.

The Step command can be used whether the texture screen is on or off. You do not need to have the cursor on or near the texture of which you are defining the size. This lets you set up a step distance which relates to some other area or shape. The only restriction is that the size of the step must be equal to or less than the original size of the texture, in both directions.

When you have defined a step distance for a texture, try the TS command and see the result.

7.6 Indicate

If you are using many different textures you may find it difficult to remember which is which. The Indicate command - (on the keyboard it is IT for Indicate Texture) will let you identify them.

Make sure the texture screen is on and then select Indicate. A box will flash around the area of the screen which is the current texture. If you type a letter (a-z) the box will move to that texture, provided that it has already been defined. If you type Accept, you will leave the Indicate mode and the last texture you examined becomes the current texture. If you hit ESC you will leave the command without changing anything.

7.7 Use

You will sometimes want to return to a previous texture. The Use command (keyboard command TU) selects a previously defined texture.

When you select Use from the menu you will be given the dialogue box which was used to define textures. next or prev take you to the correct letter, Accept brings it up as the current texture.

When typing this command, follow TU by the name of the texture (a-z).

7.8 Erase

This command - keyboard command TE for texture erase - will clear the texture screen. The texture screen must be on for this command to work. The current texture will still be remembered although the screen is empty.

7.9 Notes on Textures

Now that you have been introduced to the texture commands, you should look at the following points of detail.

A texture is defined as an area of the texture screen. If that area is altered after a texture has been set up, then the texture definition itself is altered. This means that there is no need to redefine a texture just because you have modified it slightly - of course there is no harm in doing so!

Similarly, there is nothing special about an area of screen which holds a texture. For example, you may define one texture to overlap with another, or to be part of another.

Notice that nearly all MELBOURNE DRAW commands are available for use on the texture screen. Thus you can use Trail to construct a larger texture out of existing textures.

Because of the limited size of store in the AMSTRAD certain texture commands won't work with certain block commands.

Occasionally you might find that you have created an interesting pattern on the full screen and would like to use this pattern as a texture. You can use the Remember and Plant commands (BR and BP) to take a copy of a pattern and plant it on to the texture screen.

Remember that a texture may be used as a paintbrush with theTT command. This lets you paint areas in stipple, patterns or even tartans.

Do not change resolution when the texture screen is up.

At first, using textures may seem rather complex. You will soon get used to them and find them a powerful, flexible and rapid way of painting complicated pictures.

8. AREAS

MELBOURNE DRAW has the ability to fill areas of arbitrary complexity with colour or textures. Before it can do this, it must be infformed of the exact shape and position of the screen area. The commands to be used are Block Mark or Find Area (BM and FA).

8.1 Block Mark

This command is used to mark a rectangular area of the screen. Move the cursor to one corner of the area you want to mark then select Block Mark or BM. Pull the box cursor over your chosen area and then hit Accept. ESC will cancel the command

8.2 Find Area

The Find Area command is used to mark an area which consists of pixels of a single colour. The area is bounded either by the edge of the screen or by any pixels which are not of the same colour as the one under the cursor when the command is called.

To mark an area, put the cursor anywhere inside the area you wish to mark and select Find Area (keyboard command FA). You will see the area 'flood' with a colour. When the area has been filled, the tide runs out, leaving the area empty. However the exact shape of the whole area is remembered by the system.

Take care in creating the area to be marked, since if even one pixel is missing from the border, the colour will leak out and flood the whole screen. If this happens cancel the command by hitting the ESC key. Repair the breach and try again. If the area is too large or complicated to be marked in this way, the machine will groan at you and the command will not be carried out.

8.3 Fill Colour

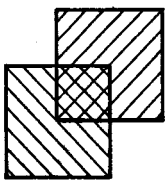
This command fills the marked area with the current colour. It makes no difference whether the area was marked with Block Mark or Find Area commands.

Both JAM and XOR modes apply to this command.

As an example, switch on the texture screen and move the cursor into it. Select Block Mark and outline a square of about 16 x 16 pixels. Now select Fill Colour and the square will be filled with the current colour.

Now select a different colour and XOR mode. Move the cursor into the centre of the square you have just marked. Select Block Mark again and outline another square of the same size. When you select Fill Colour (FC) you will get two overlapping boxes filled with colour and a third colour in the square where they overlap.

Fig.8



Define the whole as a texture.

8.4 Fill Texture

Once an area has been marked, the Fill Texture command fills it with the current texture.

Switch off the texture screen and clear the whole screen with the RESolution command. Draw a circle with the CIrcle command and mark the area with the Find Area command. Now select JAM mode and then the the Fill Texture command (keyboard command FT). The circle will be filled with the overlapping squares of the texture defined in 8.3.

Carry out some more experiments and see if you can draw a brick wall using texture and fill.

The XOR and JAM modes work with the Fill Texture command in their usual way. Some interesting effects can be achieved with the XOR mode by repeartedly filling an area with different textures.

It is important to note that the texture command is 'pitch-matched'. That is to say, if you mark several adjacent areas with the Find Area command and fill them with the same texture, the patterns connect up correctly like well-hung wallpaper. If you do not wish the textures in adjacent areas to meet in this way, define a second texture which overlaps the first and fill the area with this new texture.

If you make a serious mistake in filling an area, such as choosing the wrong texture, the following option is available.

* select JAM mode

* select a colour

* select Fill Colour

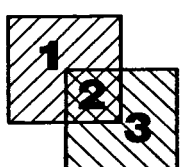
This will recolour the entire marked area.

8.5 Colour Swap

This command allows you to exchange two colours within a marked area.

Continuing from our previous example, we have the current texture defined as:

Fig.9



Select Colour Swap. When the colour dialogue box appears, select the colour corresponding to (1). A cross will be drawn through the box containing that colour. Now select the colour corresponding to (2). The menu disappears leaving all pixels of colour (1) changed to (2) and vice-versa.

Repeating the command with the same colours will restore the picture to its orginal state.

The keyboard command is CS. This is followed by the two colour codes of the colours to want to exchange.

Use Indicate Colour if you forget which colours are available.

8.6 Colour Merge

It is possible to merge two colours with the Colour Merge command. Like Colour Swap, this command requires two colour choices. All pixels of the first colour are changed into the second.

Unlike Colour Swap, Colour Merge is not always reversible. A warning dialogue box is displayed to remind you of this. Select OK if you wish to proceed. The keyboard command is CM, followed by two colour codes.

As with Colour Swap, the change to the screen is limited to the area defined by the last use of Block Mark.

Use Indicate Colour if you forget which colours are available.

8.7 Area Revisited

Find Area and Block Mark both mark areas of the screen. The Find Area command will mark an area of considerable complexity holding one colour only. Block Mark will mark an area with many colours, but it is limited to rectangular shapes.

If an area is too large and complicated to be marked in one operation, divide it up into smaller segments and deal with these individually. You can do this by first drawing lines in XOR mode. Remember to move the lines one pixel across between the Find Area commands or there will be gaps in the final picture.

Using drop-down menus can cut down the amount of memory available to hold areas. If you have defined a very complicated area, calling up the menus may destroy it. A warning box will be displayed before this happens. One way round this is not to use the menus and to type in the commands directly from the keyboard. The Reference Section gives the keyboard abbreviations for all the commands in MELBOURNE DRAW.

9. THE COLOUR LIST

The colour list is a list of all the colours which can be included in certain block and texture commands. Use of the colour list can help you to transfer designs or textures to your picture with the minimum of fuss - as if you had drawn them on a sheet of transparent film .

For example,suppose you want to place a row of identical palm trees in your picture. One way to do this is to design one tree in the texture screen, define it as a texture and then plant it where you want it on the main screen. Your tree is green and brown with a black

background. You want to place the tree on a desert island and your picture has a predominantly yellow background. If you just plant the texture block as it stands, the tree will be surrounded by an unsightly black rectangle.

Here is where the colour list has its use. Remove black from the colour list and then plant the texture block. All the black backgrounds pixels are removed from the tree texture block and your tree appears to be entirely surrounded by sand.

9.1 Selection by Menu

Select the Colour List on the Colours menu. The colour dialogue box appears with a cross drawn through each box, indicating that all colours are available for use.

To take a colour away from the list, position the larger box over it and hit Accept. The colour menu is redrawn: this time the cross is missing, indicating that this colour can no longer be used. To put a colour back in the list, simply repeat the operation.

When you have finished changing the colour list, hit ESC to leave the command.

9.2 Selection from the Keyboard

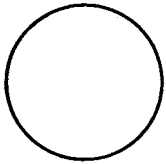
The keyboard command is CL+. This puts all colours into the colour list, the initial setting. Likewise, CL- removes all colours from the list. In this case the texture and block commands will appear not to work at all.

You can add and subtract colours from the list using the separate commands + and - , both followed by colour codes.

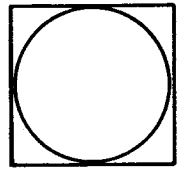
Here is another example which you can try out for yourself.To see the effect of the Colour List command, define a texture which is a pair of concentric circles on a blue background. Colour the circles differently, perhaps red and yellow. Ensure that the texture you have defined incorporates both circles. Now return to the normal screen and fill a rectangular area in white. If you place the cursor in this area and select Texture Trail you will see that the entire rectangular texture is planted in the white box. Draw the white box again and remove blue from the colour list. If you repeat the Texture Trail experiment, you will see that only the circles are planted - there is no hint of a rectangular box.

By using a combination of a texture definition, a texture repeat and the colour list it is possible to produce paintbrushes with user-defined widths and shapes. Try this experiment.

* Create the shape shown below using the circle command

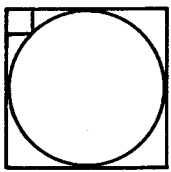
(a) 

* Fill the shape with red

(b) 

* Define it as a texture

* Set the texture repeat distance as the actual width of the brush - say one pixel in each direction.

(c) 

* Select only red for use with the colour list

* Call the Texture Trail (TT) command.

You will have a circular red paintbrush. Vary these operations to obtain more complex shapes and widths of brush.

10. CONTROL

Selecting the Control menu produces

Fig.10

control

RESolution
WIpe
Crib On/off
Crib Down
Crib Up
Ind. List
Alt. Cursor
Cursor col.
Alt. Noise
Mag. On/off
Mag. Move

This useful collection of miscellaneous functions is described below.

10.1 Resolution

The RESolution command changes the mode of the display into high, medium or low resolution. The keyboard command is RES. When the command has been selected, type a single resolution letter: 'h' for high, 'm' for medium, and 'l' for low.

Remember that any RES command will clear the screen; even one which leaves the resolution unchanged.

10.2 Wipe

This command clears the entire screen ready for a new picture. The key sequence for the command is WI. A warning dialogue box is displayed which checks that you really do mean to give this command
As with RESolution, this command should be used with care, as there is no automatic way of restoring any picture which has been WIped from the screen.

10.3 Crib On/Off

Many artists find it useful to have a continuous display which gives the position of the cursor and other useful aspects of the system. This information is provided by the crib, which is a line of numbers and characters. Once the crib line has been switched on it will always appear unless you are actually typing a command.

The crib line holds the following four items of information:

a) Cursor position. On the AMSTRAD, the screen is divided into 200 rows of pixels. Each row contains 640 pixels in high-resolution mode, 320 in medium-resolution, and 160 in low resolution. The cursor position is given as an x-coordinate (so many pixels along from the left of the picture) and a y-coordinate (so many pixels down from the top). The x-coordinate is always measured as if the screen were in high resolution (irrespective of the resolution it is actually in), so that an x-coordinate of - say - 620 - always refers to a position near the right of the picture.

As you will know, the medium-res pixels are twice as wide as the high-res ones. This means that with a medium-resolution picture the x-coordinate will always change in steps of two units: 0,2,4,6,... and so on. Similarly, the x-coordinate in a low-res picture can only change in multiples of 4.

b) The current command. If you are in a command which uses the joystick or cursor keys (such as Point Trail or Circle) the initial letters of the command will appear. If you see a double star "**" it means that something has gone wrong. For example, you might have tried to fill an area with colour without marking the area first. Hit ESC to go on.

c) The pixel plotting mode. This is shown as J for JAM and X for XOR.

d) The colour code of the current colour. This is shown as a letter on a background of the corresponding colour.

The 'Crib On' command (keyboard command CO) toggles the crib line: that is, it turns it on if it was off, or off if it was previously on. Normally, the crib line appears at the top of the screen, overwriting the highest eight rows of pixels.

10.4 Crib Down

This command, which you can type as CD, moves the crib to the bottom of the screen, leaving the top free to work in.

10.5 Crib Up

This command sends the crib line back to the top of the screen. It can be entered on the keyboard as CU.

10.6 Indicate List

The name of this command stands for 'Indicate List'. In Section 9, we described the facility for making a 'colour list' which helps to control the way in which textures are copied into the main picture. The Ind. List command lets you see which colours are actually on the colour list. If a colour is present, its letter will appear in the crib line: otherwise it won't.

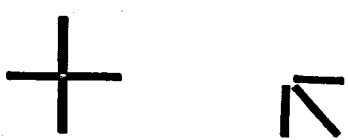
When the Ind. List command is in force, it stops the crib line from being used for its normal purpose. Like CO, it is a toggle command. Call it once to switch on, and again to switch off and go back to the normal crib. The keyboard code for Ind. List is IL.

10.7 Alternative Cursor

This name stands for "Alternative Cursor", and the typed command is AC.

The system offers three cursors, one of which is invisible:

Fig.11



If you give the Alt. Cursor command repeatedly you will move from the cross to the arrow, to the invisible cursor and back to the cross.

10.8 Cursor Colour

This command lets you choose the colour of the cursor.

If you use the main menu, you will be given the colour menu to choose from. If you type the command as C, you must follow with a colour code - one of the letters A to P.

You will probably want to choose a cursor colour which is easy to see against the prevailing background of your picture.

10.9 Alternative Noise

This is another command to switch things on and off.

When you first load MELBOURNE DRAW, it squeaks when you do something correctly, and groans if you make a mistake. Alt. Noise (which you type as AN) can be used to change this arrangement:

The first time you use AN, the squeaks stop but the groans persist.

The second time, groans also stop, leaving the machine silent.

The third time, both the squeaks and the groans come back.

From then on, the cycle is repeated.

10.10 Magnification On/Off

The pixels on the screen are so small that it is very hard to see each one by itself. Melbourne draw helps you draw fine detail correctly by offering a 'magnification' feature. When magnification is switched on, a window appears in the centre of the screen. This magnifies the area under the cursor so that each pixel is clearly visible, as you draw the picture you can see each change take effect, pixel by pixel.
The MAG ON/OFF command (typed MO) is another toggle command. Use it once, and the magnified screen appears: use it again, and it goes away. Do not move the cursor into the magnification window.

10.11 Magnification Move

The Mag Move command, which you type as MM is also a toggle. It moves the magnified image back and forth between the two sides of the screen.

11. FILES

MELBOURNE DRAW lets you use cassette tapes to save and restore pictures and texture screens in much the same way as ordinary programs. Each picture or screen is stored away as a 'file' with its own special name, and can be reloaded by telling the machine what name to look for.

11.1 Save Picture

When you select this command, (or when you type SP) a dialogue box appears in the middle of the screen. It contains a space for the file name of the picture you want to save. Use the keyboard to type this name, which must not be more than 16 characters long. Possible names are

```
GIOTTO
PIC3.2
TEXURELIB
```

If you make a mistake, you can rub out the previous character with the DEL key. When you finish, hit ENTER and the picture will reappear. The message:

```
Press PLAY and RECORD then hit any key
```

will be displayed in the crib line, and the border will start flashing.

Load a rewound tape, press the PLAY and RECORD buttons on the recorder, and hit any key. The picture will then be recorded on the tape, with the process taking several minutes.

While the recording is happening, the screen may change in its appearance. This is temporary, and the original state will be restored as soon as recording is complete.

11.2 Save Texture

This command (keyboard code ST) is used to save any textures you may have defined. It works exactly the same way as Save Picture.

11.3 Load Picture

This command, or its keyboard equivalent LP, is used to restore a picture previously saved by the SP command. As you would expect, you must give the file name, load the right cassette, press the PLAY button, hit any key, and wait.

11.4 Load Texture

The Load Texture command can bring back any set of textures saved by the ST command. You can use it in the same way as Load Picture and the keyboard command is LT.

11.5 Slow Speed

Normally the AMSTRAD saves pictures and textures at 'slow speed', which takes time but which is highly reliable.

Select this command on the menu or type SS.

11.6 Fast Speed

'Fast Speed' makes saving and loading about twice as fast, but is prone to errors unless your recorder is superbly well adjusted. Select the menu command or type FS.

12. LOADING A PICTURE FROM BASIC

Pictures may be loaded from BASIC in the usual way:

```
load"!filename"
```

The command will load the picture in filename' onto the screen. The exclamation mark is to stop the AMSTRAD printing messages over your picture while it is loading.

This method, though simple, will not restore the colours, resolution, or border the picture was saved with. This is because the information is kept in the "header block": a part of the tape the BASIC programmer cannot access easily.

For this reason there is a program called "BASLOAD" on the tape with MELBOURNE DRAW. This is a BASIC program with some machine code that you may copy and use as part of your own programs. When you run this it will ask you for the name of a file containing your picture, and then change to the correct resolution, set the colours and border to what they were, and load the picture.

For programmers who know machine code a full listing and explanation of the machine code part of this program is given in Appendix I.

13. THE PRINTER DUMP UTILITIES

The three BASIC programs "S DUMPO", "S DUMP1" and "SDUMP2" will dump pictures to a printer.

To use these,

i) Load the appropriate program: SDUMPO for low-res, SDUMP1 for medium res, and SDUMP2 for high-res.

ii) Change line 30 from

```
30 LOAD"!"
```

to

```
30 LOAD"!filename"
```

iii)The programs supplied are for use with Epson printers.
If your printer is an AMSTRAD one then delete line 100,
and remove the first "REM" from line 110.

Now run the program, and the AMSTRAD will load your picture, and dump it to the printer.

These programs do not use the machine code loader as it would make them confusing to read - nor would it make any difference to the output if they did ! This is because the screen dump is of the "logical" colours (which correspond to the colour codes in the package itself), and not the actual "physical" colours on the screen.

The easiest way to get around this problem is to change the order of the elements of the array "col$" so that they are in the same order of brightness as the "logical" colours.

The programs supplied make col$(0) the darkest colour, and the highest element of col$ the lightest, the ones in between going from darkest to lightest.

For example, say you wished to print out a picture in which

Colour Code	Logical Colour	Physical Colour
(CTRL) A	0	Green (9)
(CTRL) B	1	Lime (21)
(CTRL) C	2	Purple (7)
(CTRL) D	3	Bright Yellow (24)

(The numbers in brackets are the numbers for the physical colours on the AMSTRAD).

Going from darkest to lightest, these colours are: purple,green,lime,bright yellow (the lower the number of a physical colour is, the darker it is), so to change the printer dump program to reflect this changes lines 200-230 of SDUMP1 from

```
200 col$(0)=CHR$(6)+CHR$(6)
210 col$(1)=CHR$(2)+CHR$(2)
220 col$(2)=CHR$(1)+CHR$(0)
230 col$(3)=CHR$(0)+CHR$(0)
```

to

```
200 col$(2)=CHR$(6)+CHR$(6)
210 col$(0)=CHR$(2)+CHR$(2)
220 col$(1)=CHR$(1)+CHR$(0)
230 col$(3)=CHR$(0)+CHR$(0)
```

The colours will now be printed out in the correct order of brightness.

Note that it was only necessary to change the indices (the numbers in brackets after "col$") of col$, which amounts to using them in a different order

14. REFERENCE SECTION

The section contains a brief description of all the facilities in PANORAMA together with a list of commands used to access them from the keyboard. This description will be useful if you already know how to use the system with the icons and drop-down menus and now want the speed and immediacy which the keyboard commands provide.

The commands are listed alphabetically, followed by their abbreviation. The '(' symbol is used to mean 'colour code'.

Keyboard commands may be typed in lower-case if preferred.
Airbrush Trail (AT): switches the airbrush on.
Alternative Cursor (AC): used to switch between the system's three cursors.
Alternative Noise (AN): used to switch the groans and squeaks on and off.
Block Copy (BC): puts a copy of the remembered block at the cursor position.
Block Drag (BD): as Block Copy, but clears the area of screen from which the block was taken to the current colour.
Block Mark (BM): marks a rectangular area.
Block Remember (BR): remembers a rectangular area.
Border colour (B<): selects the border colour.
BOx (BO): rubber box
CIrcle (CI): rubber circle
Colour Change (CC>): redefines a colour.
Colour List fill (CL+): puts all colours into the colour list.
Colour List empty (CL-): removes all colours from the colour list.
Colour Merge (CM≪): changes all pixels of the first colour into pixels of the second colour within a marked area.
Colour Swap (CS≪): exchanges two colours within a marked area.
Crib Down (CD): displays crib at bottom of screen.
Crib On/off (CO): switches the crib on and off.
Crib Up (CU): displays crib at top of screen.
ELlipse (EL): rubber ellipse.
Fast Speed (FS): Saves and loads at fast speed.
Fill Colour (FC): fill marked area with current colour.
Fill texture (FT): fill marked area with current texture.
Find Area (FA): mark an area of a single colour.
Flash colour (F<): redefine a colour to be flashing.
Indicate Colour (IC): displays current colour in border.
Indicate List (IL): uses crib to show colour list.
Indicate Texture (IT): outlines current texture. The texture screen must be on.
Jam mode (J): plots pixels in JAM mode.
LIne (LI): draws a line.
Load Picture (LP): loads a picture from tape.
Load Texture (LT): loads a texture screen from tape.
Magnification On/off (MO): switches magnification on and off.

Magnification Move (MM): moves magnified window to left or right of screen.
MIddle (MI): moves cursor to middle of screen.
Mirror Both (MB): draws the remembered block rotated through 180 degrees.
Mirror Horizontal (MH): draws the remembered block mirrored round a horizontal line.
Mirror Vertical (MV): draws the remembered block mirrored round a vertical line.
Point Trail (PT): leaves a trail of pixels drawn in the current colour and mode behind the cursor.
RESolution (RESx): changes screen resolution. x = h for high-res, m for medium-res and l for low-res. Texture screen must be off.
Rubber Band (RB): rubber line.
Save Picture (SP): saves a picture to tape.
Save Texture (ST): saves a texture screen to tape.
Slow Speed (SS): changes save speed from slow to fast and back again.
Slow Speed (SS): Saves and loads at slow speed.
Texture Define (TDx): defines texture x where x is a single letter.
Texture Erase (TE): clears the texture screen.
Texture On/off (TO): switches texture screen on and off.
Texture Plant (TP): plants current texture at cursor position.
Texture Step (TS): defines step size of current texture to be used in Texture Trail.
Texture Trail (TT): leaves trail of current texture drawn in current mode behind cursor.
Texture Use (TUx): makes previously-defined texture x the current texture.
TeXt (TX): allows characters to be typed in current colour and mode. DEL key will erase characters in XOR mode and backspace in JAM mode.
WIpe (WI): clears the screen.
Xor mode (X): plots pixels in XOR mode.
Zap (Z<): changes line under cursor into colour x.
colour list add (+<): adds colour to colour list.
colour list remove (-<): removes colour from colour list.
Typing a colour code on its own will change the current colour to that colour.
The current colour and mode may be changed during all 'rubber' commands: the new colour and mode will be implemented when the command is accepted.
The current texture may be changed during the TT command but only with IT or TU. The mode may be changed while in TT.

Appendix 1: The BASLOAD program

A BASIC listing of the BASLOAD program can be found on side two of your cassette.

Essentially it may be divided into three parts:

i) Get the file name from the user.
ii) Open the file, check it is of the correct type and size and set the resolution, border and colours to the values recorded.
iii) Load the rest of the file and close it.

Sections i) and iii) are relatively straightforward.
Section ii) has to retrieve information from the 'header', a 64-byte area at the start of each block of a file which is set as follows:

Bytes 0..15	:	filename, padded with nulls
Byte 16	:	block number
Byte 17	:	last block: non-zero means end of file
Byte 18	:	filetype
Bytes 19,20	:	data length
Bytes 21,22	:	data location
Byte 23	:	first block: non-zero means end of file
Bytes 24,25	:	total length of file in bytes
Bytes 26,27	:	entry address

The rest are free for use by the user.

Bytes 28,29	:	screen resolution
Bytes 30,31	:	colours of border
Bytes 32.33	:	colours of ink 0
Bytes 34,35	:	colours of ink 1
.....		
Bytes 62,63	:	colours of ink 15

The address of the header is returned in HL by casinopen, which opens the file. This also returns the location in DE and the length in BC.

These are both checked. DE should be C000 and BC should be 4000. The resolution, border and colours are then changed and the remainder of the file loaded.

Amstrad Melbourne Draw has been designed to enable any Amstrad CPC user, whether beginner or advanced, to utilise to the full the superb graphics potential of the Amstrad CPC display chip. Adding to the ease of use of the program is this 36 page booklet which offers detailed explanation and guidelines to help the user make the most of this powerful utility. Some special features of the program described in this guide include:

★ Magnification of the screen to allow detailed pixel by pixel design.

★ Facility to draw point, lines, circles, ellipses, boxes etc.

★ Full access to all 27 colours available on Amstrad computers.

★ Pull-down menus on screen allowing easy access to all commands.

★ Ability to reproduce pictures on a dot matrix printer.

Facilitate design in all 3 display modes, Hi-res, Medium-res, and Low-res.

★ Mirror effect for dramatic designs.

★ Air brush facility enabling user to create soft-effects.

★ Large range of texture facilities including ability to design own multi-coloured texture and fill specific parts of the screen with texture.

Melbourne House
60 High Street
Hampton Wick
Surrey KT1 4DB

MG 723/727