

HARRIET



HARRIET OPERATOR'S MANUAL VOLUME 1

Operating Software Version V4.07

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AMENDMENT RECORD

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REV	DATE	ECO	COMMENTS	REVISED PAGES
A	11/92	E02995	V4.00 S/W	All
B	05/93	E04217	V4.07 S/W	All

This manual was written and produced by the Quantel Technical Publications Department.

ABOUT THIS MANUAL

CHAPTER 1 : BASIC OPERATION

This chapter gives information about the system's operating principles and details the system's basic operation, including an overview of the Harriet workstation, the theory of menu use, pen control, the palett and keyboard.

CHAPTER 2 : PAINTING MENU

This chapter details the system's *PAINTING* menu, describing the *PAINT*, *CHALK*, *AIRBRUSH*, *WASH*, *SHADE*, *SMUDGE*, *COPY*, *BLUR*, *SMOOTH*, *CRISP*, *FIELD* and *RESTORE* brushes and their combinations. This also includes *MAGNIFY*, *ZOOM* and the purpose of *STENCILS*.

CHAPTER 3 : GRAPHICS MENU

This chapter details the system's *GRAPHICS* menu, describing the operation of *LINES*, *CURVES*, *RECTANGLES*, *CIRCLES*, *ELLIPSES*, *FILL* and *DEFINE GRID* functions.

CHAPTER 4 : EFFECTS MENU

This chapter details the system's *EFFECTS* menu, describing the operation of the *OVERLAY*, *FIELD MODE*, *COLOUR MAP*, *MOSAIC* and *COLOUR FETTLE* functions.

CHAPTER 5 : PASTE UP MENU

This chapter details the system's *PASTE UP* menu, describing the operation of the *CUT*, *PASTE*, *STATISTICS*, *SMEAR*, *3D*, *KEYFRAMES*, and *TEXT* functions.

CHAPTER 6 : ANIMATION MENU

This chapter details the system's *ANIMATION* menu, describing the operation of the *CELL*, *SEQUENCE*, *RAMCORDER*, *KEYFRAMES*, *LIB CONTROL* and *VTR CONTROL* functions.

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CHAPTER 7 : LIBRARY MENU

This chapter details the system's *LIBRARY* menu, describing the operation of the *FIND* and *SAVE* functions.

CHAPTER 8 : SETUP MENU

This chapter covers the Full Page *SETUP* menu used for setting-up the Harriet system, and includes the configuration menus; *ARTIST*, *VIDEO IN / OUT*, *SYSTEM*, and *DISK*. This also covers the *CONFIGURE* and *OUT* menu for control of the systems video inputs and outputs.

NOTICES

RFI STATEMENT

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the service manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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MAINTENANCE

Maintenance and Servicing of this equipment should only be carried out by qualified service personnel.

- ☛ **WARNING:** Always disconnect the unit from its electrical supply before attempting to remove any of the unit's panels as dangerous voltages can be exposed.
- ☛ **WARNING:** The fan within the unit continues to rotate for a period of time after the electrical supply has been removed.

CONVENTIONS USED

- ☛ **WARNINGS:** Indicate danger to life and limb if the indicated statements are ignored, or the indicated procedures are not performed correctly.
- ☛ **Cautions:** Indicate possible damage to (or misalignment of) the equipment if the indicated statements are ignored, or the indicated procedures are not performed correctly.

<TEXT>	Text in these brackets represents a key press on the Keyboard.
NN	This indicates a value entered on the numeric keypads.
<i>TEXT</i>	Text in italics represents a menu function or option.
②	Indicate stack buttons.

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CHAPTER 1
BASIC OPERATION

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GENERAL

Introduction

Harriet offers a new concept in dynamic graphics production, enabling production of the simplest or most complex graphic creation with ease and is simply controlled using the cordless pen and tablet and viewed on the single monitor. It provides an integrated system that would conventionally utilise many varied pieces of equipment.

For example, material can be loaded directly from VTR into random access memory (RAM). It may then be retouched or rotoscoped, using any of the painting capabilities of the Harriet.

Animation facilities are provided and the results stored directly into memory. With the Dynamic Collage option, multiple cutouts - with soft edges or even text - can be 'flown' around with true perspective using a sophisticated effects package and multi-layered images built-up with no loss or degradation. Custom wipes and dissolves are simply additional capabilities using the built-in keyer. Finally, the finished piece is then transferred back to tape, with frame accuracy.

Conventionally, all this would require several VTRs, a painting system, a character generator, digital effects, an edit controller, a switcher or matrix, perhaps a disk recorder, a keyer and an excellent knowledge of all these devices.

In Harriet, all this is controlled, previewed and executed from a single tablet and pen work station and the total electronics required, excluding VTR, is only 6U (two 3U).

Harriet Implementation

Harriet has been carefully engineered to make use of the operator's traditional skills while removing many of the tedious and time consuming mechanical chores associated with them. Harriet offers operators the ability to employ their individual skills and talents over a wide range of activities including illustration, mechanical drawing, dynamic graphics production, the capture of live video frames and subsequent processing, paste-up artwork techniques, sophisticated typographic design and, of course, animation.

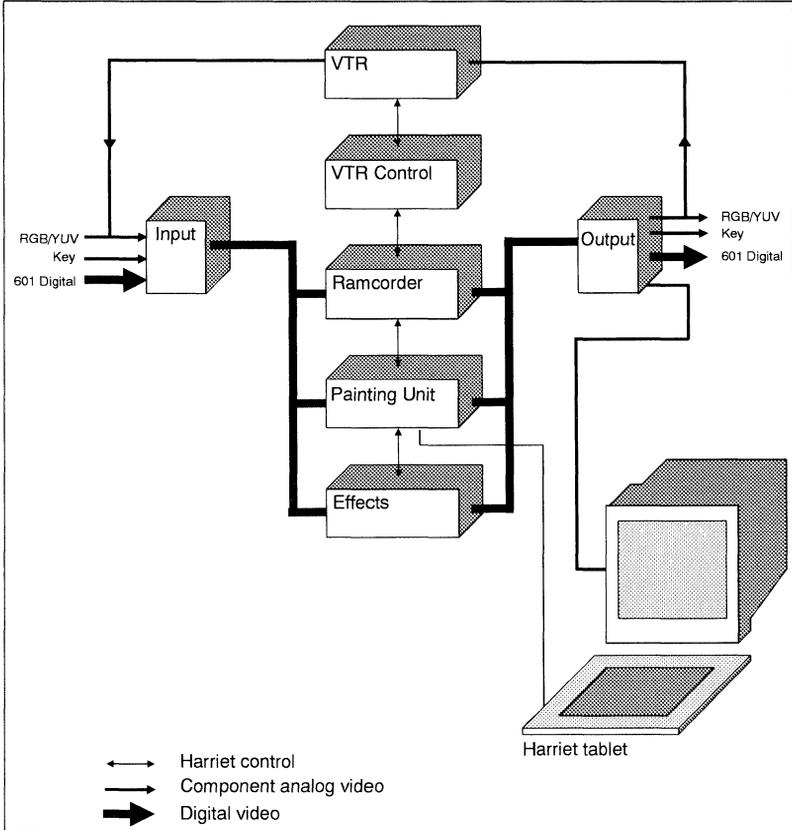
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The system imposes no inhibition or limitation on the user, nor does it impose a character of its own on the finished result: the style of completed artwork is entirely that of the artist or designer. From the users' point of view this quality manifests itself in two ways:

- i The work station is very un-intimidating - control is from a stylus on a plain tablet and the results shown on a monitor. Most functions are controlled by the stylus (or "pen") and there are no fixed "boxes" marked on the tablet - the functions being selected from a "head-up" display on the monitor.
- ii The intrinsic picture quality is extremely high. The unique design of Harriet allows the mixing of colours to an infinite number of shades, for all practical purposes; and the graduation of colours within the displayed picture reflects this. It is possible to blend one colour into another to achieve a 0%/100% - 100%/0% graduation. Furthermore the line quality is very natural and displays none of the rigid, mechanical characteristics sometimes associated with electronic graphics devices.

The Harriet Concept Block Diagram

The block diagram below illustrates the concept of the Harriet system.

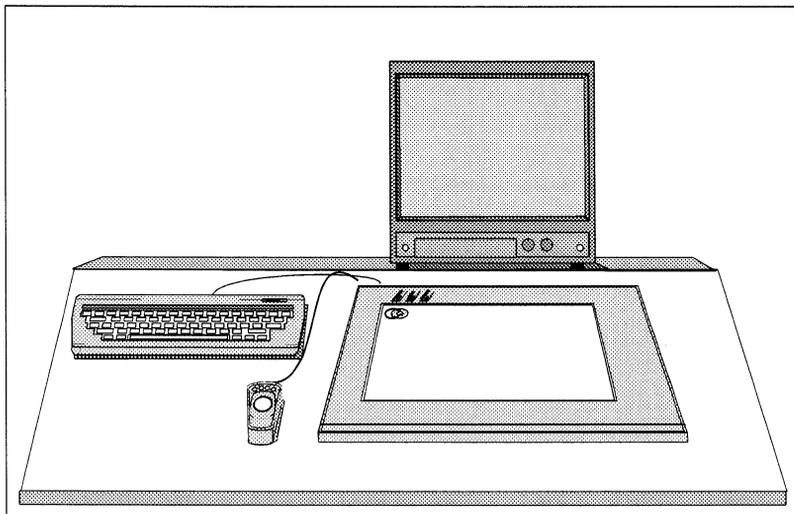


The Ramcorder provides the random access store which is the heart of the machine. The Painting, Effects and VTR Control packages are all connected via common control and video buses.

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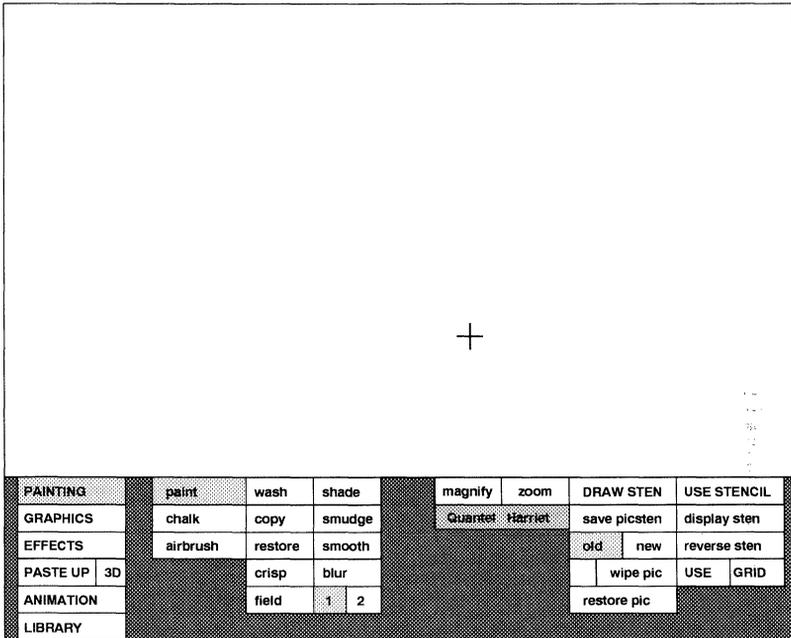
The Control System

The system's control station consists of a digitising tablet, a pressure sensitive pen, a conventional typewriter-style keyboard and a small Hand Unit (joy-stick box). These, in conjunction with a single video output for monitoring, are all the controls necessary to drive the system.



When switched on, the system displays a dark screen for about two minutes while the disks run up to speed and the machine is set-up. This is then replaced by the main operational display.

When switched on, the system displays a dark screen for about two minutes while the disks run up to speed and the machine is set-up. This is then replaced by the main operational display.



Note: The column on the left, in capital letters, is the listing of major menu functions and the boxes to the right of this column, displayed in lower case, indicate functions within each of these menus when selected. At the extreme right of the display is the *STENCIL* menu. This remains visible and usable when *PAINTING*, *GRAPHICS*, *EFFECTS*, *PASTEUP 3D* and *ANIMATION* are activated.

Note: By pressing the blue "Quantel Harriet" display box, the current system software version is shown.

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- PAINTING** The *PAINTING* menu gives access to the system's paintbrushes and stencil facilities. The system provides paint, air and chalk brushes which can be used in conjunction with wash, shade, field, restore and copy to modify the picture or stencil content.
See chapter 2 for details.
- GRAPHICS** The *GRAPHICS* menu gives access to the system's graphic tools which can be used to create geometric elements in any brush, colour or stencil.
See chapter 3 for details.
- EFFECTS** The *EFFECTS* menu gives access to the system's image processing facilities and includes mosaic, overlay, colour map, and colour.
See chapter 4 for details.
- PASTEUP** The *PASTEUP* and *3D* menus gives access to the system's cut and paste facilities as well as providing keyframing.
See chapter 5 for details.
- ANIMATION** The *ANIMATION* menu gives access to the system's animation facilities including *CELL*, *SEQUENCE*, *RAMCORDER* and *VTR* control.
See chapter 6 for details.
- LIBRARY** The *LIBRARY* menu gives access to the system library of graphic elements.
See chapter 7 for details.
- FULL PAGE** The full page menu (obtained by pressing any of the top level menus twice) gives access to the system's configuration and setup menus.
See chapter 8 for details.

MENUS

Description

Menu is the term given to a displayed list of functions. There are a number of different menus in the system, covering clearly defined areas of operation and access to them is gained by a lateral movement of the stylus (as opposed to vertical, for the palette).

Operation

Start with the stylus in its null, central position and move it slowly off the picture area, either to the left or right, lightly resting the pen on the tablet surface. A backhand flick is the easiest way of accomplishing this, and therefore both right and left handed people are catered for.

Note: When calling up either palette or menu, it is only necessary to move the stylus approximately 50 mm out of the picture area.

The switching action responds to pen position only, not speed of movement. It is also important that the pen is not pressed down while moving towards the side otherwise one may unintentionally paint or pick up colour. The pen simply has to be near enough to the surface to register proximity (about 4 mm from the surface).

The menu in use is indicated by the appropriate box in the left hand column being illuminated in pink. To change the menu, tap the required box in this column. Major menu functions are displayed in capital letters.

The facilities available under each menu are displayed to the right of this column in lower case letters. Having selected the menu, one then taps the required function within the menu, swipes the pen sideways to remove the menu display, then continues to work on the picture.

A feature of the menus is their clear and logical layout; both terminology and display have been designed for use by creative staff. When selecting a function within a menu, irrelevant functions will be removed from the display and relevant ones will be displayed.

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Menu Box Colours

The menu boxes will display various different colours indicating the status of the menu functions as follows:

Grey	These are not selected, but indicate that the function is available.
Pink	These are the functions currently selected. Pressing pink boxes in most circumstances disables the function.
Blue	These boxes are mainly for information, but in some cases are used as 'short hand' methods of repeating the last operation.
Green	Indicate that the box value or title can be entered by the user. Values can be changed using the "inc" and "dec" boxes, the Hand Unit, the Keypad or the Pen. Values can only be entered when the box has turned pink.
Orange	Indicate that an operation has been aborted for the indicated reason. A heavy pen pressure will remove these boxes.

Green Box Numeric and Data Entry

A NUMBER PAD

Whenever a green parameter box is selected, a number pad appears at the right of the menu. This allows numeric entry of user variables and system configuration parameters. The right arrow moves you to the next related green box, the left to the previous. The numbers build up in the current number bar, values too large being automatically truncated by the system. The *INC* and *DEC* boxes increase or decrease the value of the parameter by the number currently loaded.

The current number is transferred to the selected parameter box by one of the following actions:

- Re-select the parameter box itself.

- Select another parameter box.

- De-select the menu in which the parameter box resides. This will work unless there is no number entered in the current number bar or if it was last used as an *INC* or *DEC* value.

B KEYBOARD ENTRY

Numeric values can also be entered using the keyboard. This is done by selecting the required value using the number keys, then pressing <RETURN> to transfer the value to the parameter box.

Note: that on the keyboard selects the biggest value, <S> selects the smallest value and <D> selects the default value. These can be entered at any point to restore a specific parameter to a known working value for the specific application.

C PEN MOVEMENT

Numeric values can also be entered on some menus using pen movement in the picture area while the menu is displayed. Values in the selected green boxes can be adjusted by dragging the pen up/down or left/right in the active picture area. Up and right movements increase the value in the selected green box, while down and left movements decrease the value. The pen pressure itself will effect the scale of increase or decrease, the heavier the pen pressure the larger the effect.

Note: In some *PASTE UP* functions the numeric pad will be replaced by a set of direction arrows. The direction can be changed by selecting the appropriate arrow, or by moving the pen in the picture area while the menu is displayed.

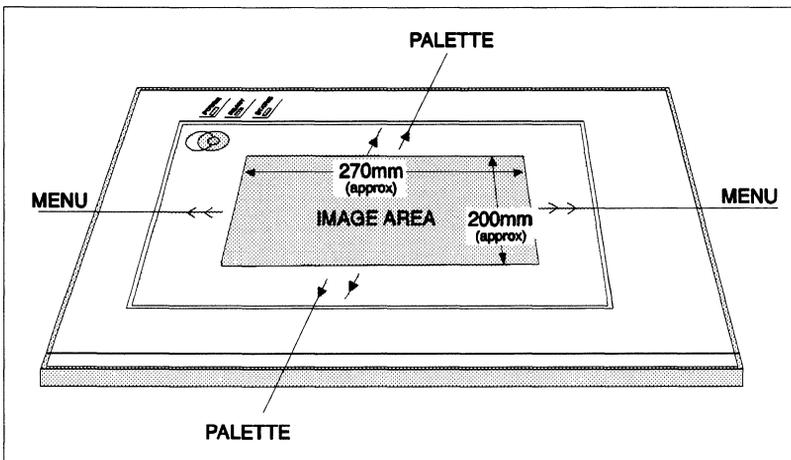
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PALETTE, BRUSH & CANVAS

PALETTE, BRUSH & CANVAS

Description

When the system starts up, a light grey screen indicates "machine ready". Bring the pen to within 4 mm of the tablet surface and a cursor will appear on the screen. The active area of the tablet is roughly equivalent to an A4 landscape size of paper.



When familiarizing yourself with the system, use the centre of the screen as a "start" position for the cursor, always returning to the position after selecting a brush, colour etc. In this way one avoids getting "lost". The machine always starts up with black on the pen. Exerting normal pressure, draw the pen across the tablet and you will draw a line (with the menu and palette removed), the natural qualities of which are immediately apparent.

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Using the Pressure Sensitive Pen

The pen is pressure sensitive and therefore performs in much the same way as a pencil, depositing more colour the harder it is applied. It is extremely sensitive, so the lightest pressure will produce a correspondingly delicate transparent shade of colour; continued "rubbing" at this pressure will build up colour until full opacity is reached. Experiment with the pressure and note that a line may be graduated from 0% - 100% in one controlled stroke. It is this feature which holds the key to the mixing of colour and hence to naturalistic painting on the system.

To change brush thickness or colour, start with the cursor in "start" position, mid screen. Now slowly draw the pen towards you, resting it lightly on the surface. Sustain this movement as the cursor moves down the canvas and out of the picture area. The palette will appear at the bottom of the picture. Move the stylus slowly up again to the "start" position and study the palette. To the left are 35 boxes containing, or waiting to accept, colours. This is your working palette. The system is delivered with a basic palette containing shades of grey from black to white, primary and colour bar colours. From this palette it is possible to mix something of the order of sixteen million colours - far beyond the range of human perception.

The large central blank box is the mixing area, and the column of five boxes to the right represents brush widths, ranging from very fine at the top to broad at the bottom. The vertical box to the extreme right is an indicator of the colour loaded on the brush.

To Load a Colour

Place the cursor over one of the colour boxes and tap the pen quickly on the tablet without moving the pen position.

Note: When the palette is displayed, a quick tap picks up colour while sustained pressure deposits it, so do not linger or you will merely replace the colour in the box with what you already have on the brush.

Changing the Brush Size

The brush width is altered by selecting the appropriate box and lightly pressing with the pen. It is immaterial whether colour or brush is selected first: the system will "remember" your previous command in any function.

PALETTE, BRUSH & CANVAS

To Draw with the New Colour/Width

Remove palette by repeating the action which brought it up.

Note: You cannot paint while the palette is displayed; you can only pick up colour (from ANYWHERE on the screen, including the picture) and mix it ON THE PALETTE. Therefore to return to the picture and continue painting you MUST remove the palette or you will merely pick up the colour you are attempting to over-paint.

To Mix and Pick-Up Colours

This is best achieved using a large brush size. Select a colour, which can be any colour displayed, either on the palette or in the picture. Colour an area of palette and, selecting the second colour to be mixed, brush lightly over this area. Position the cursor over the intermediate, mixed colour and tap down (without moving the pen) to select this mixture which is now is a mix of the original two colours.

Colours may be placed in the paint pots by loading on the brush, positioning the cursor on the desired box and pressing down for a second or two. This means that a palette may be constructed to suit specific or personal requirements, and then stored away for future use.

To Clean the Palette

The palette mixing area may be "cleaned" by selecting a large brush and over-painting with the desired background colour. A quicker method is to apply continued pen pressure in the indicator panel to the right of the brushes. The palette will then wipe to the colour contained within the panel. There is also a *RESTORE PALETTE* facility available from within the Full Page Set-up Menu.

Note: As colour may be selected from anywhere on the screen, provision has been made for the palette to be displayed at the top of the picture, to allow colour selection from the area otherwise obscured. The procedure for calling up (or down) the palette in these circumstances is identical, except that you swipe the stylus to the top of the picture.

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PEN CONTROLS

Description

The pen used with control system is pressure sensitive and can be used simply for menu selection, colour mixing and painting. It can also be used in many places to control the system's operating parameters as follows:

Numeric Entry

Numeric values can be entered on some menus using pen movement in the picture area while the menu is displayed. Values in selected green boxes can be adjusted by dragging the pen up/down or left/right in the active picture area. Up and right movements increase the value in the selected green box, while down and left movements decrease the value. The pen pressure itself will effect the scale of increase or decrease, the heavier the pen pressure the larger the effect.

Paste Up Style Direction Control

In some *PASTE UP* functions the numeric pad will be replaced by a set of direction arrows. The direction can be changed by selecting the appropriate arrow, or by moving the pen in the picture area while the menu is displayed.

Jogging and Shuttling

The pen can be used in the *ANIMATION* menu to jog or shuttle through video clips.

Moving the pen in the picture area in a slow clockwise circular motion, whilst pressing lightly, will cause the clip displayed to be jogged slowly forward. Likewise an anti-clockwise movement of the pen will cause the displayed clip to be jogged backwards. The faster the pen movement the faster the clip movement.

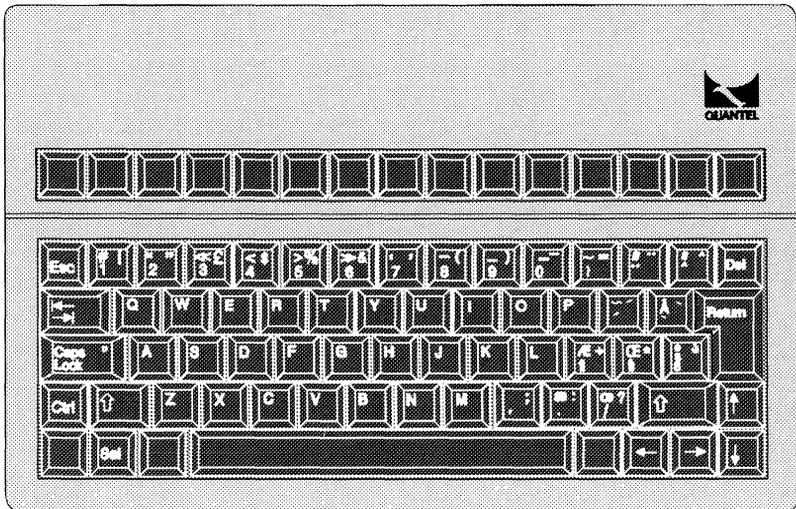
HARRIET

Moving the pen in the area above the VTR control boxes (i.e; Play, Fast Forward, Reverse, etc) will display an orange line. This line allows system to shuttle forward or backward through the VTR tape. The length of the line controls the speed of the shuttle; when the line is small the shuttle is slow and when the line is long the shuttle is fast.

KEYBOARD

Description

The keyboard supplied with the system is primarily used for text entry, but has various other uses.



Green Box Numeric Entry

Numeric values can also be entered using the keyboard. This is done by selecting the required value using the number keys, then pressing <RETURN> to transfer the value to the parameter box.

Note: that on the keyboard selects the biggest value, <S> selects the smallest value and <D> selects the default value.

HARRIET

Sequence Control

During the use of the *ANIMATION SEQUENCE* menu, the number keys on the keyboard are used as follows:

<0>	RECORD
<1>	REPLAY
<2>	STOP
<3>	REWIND
<4>	SHUTTLE
<5>	SET TAG
<6>	DELETE
<7>	CUE POINT
<8>	INSERT

Keyboard Zoom Controls

The picture currently on the screen can be zoomed either using the *ZOOM* function in the *PAINTING* menu or by using the keyboard. The keyboard functions can, however, be used in *PAINTING*, *GRAPHICS*, *EFFECTS* and *PASTEUP*. This has the advantage of allowing work to continue beyond the area displayed immediately on the screen without having to switch menus. Generally this makes for a better flow of work but, in the case of using curved lines, it is particularly advantageous not having to break the curve drawing sequence.

The controls available on the keyboard are as follows:

<Z>	This turns the zoom function on/off. The centre of the zoom will be positioned about the cursor.
< ↑ >	This zooms-in (expands) the picture.
< ↓ >	This zooms-out (contracts) the picture.
< ← >	This scrolls away from the cursor.
< → >	This scrolls towards the cursor.

The scrolling action becomes an easy co-ordination between the cursor position and the left/right keys making the whole of the zoomed picture easily accessible.

HARRIET

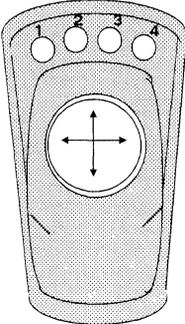
HAND UNIT

Description

The system's hand unit provides an additional form of control over some of the more interactive functions of the system. The hand unit consists on 4 push buttons and a directional thumb switch.

Control Buttons

Some functions are assigned to the hand unit. These are as follows:



	PAINTING	RAMCORDER
1	Picture Grab *	Next
2	Cue Stack/Sequence	Cue Wait
3		Previous Frame(s)
4	Picture Grab *	Sell

* Picture is only grabbed if live video has been previously selected.

HARRIET

Thumb Switch

- ← Moving the thumb-switch left illuminates the next number box on the menu. When using the *PASTEUP* menu, this will rotate an item anti-clockwise.
- Moving the thumb-switch right illuminates the previous number box on the menu. When using the *PASTEUP* menu, this will rotate an item clockwise.
- ↑ Moving the thumb-switch up increases the number in the selected box. When using the *PASTEUP* menu, this will expand an item above normal size.
- ↓ Moving the thumb-switch down decreases the number in the selected box. When using the *PASTEUP* menu, this will shrink an item below normal size.

CHAPTER 2
PAINTING MENU

HARRIET

PAINTING OVERVIEW

PAINTING OVERVIEW

Description

The *PAINTING* menu provides access to the system's paintbrushes as well as the stencil, zoom and magnify facilities.

Operation

The painting processes to be performed on an image or stencil can be applied either directly by pen pressure with the selected colour. This colour can be picked up from the image (with the palette displayed) or defined numerically using red, green and blue values (with the menu displayed and *STATISTICS* enabled).

A RGB AND STENCIL VALUES

Numeric selection of colour can be enabled by pressing the keyboard space bar with the menu swiped-off. The Full Page *ARTIST* menu controls the selection of either % or *PIXEL* scaling. With the menu swiped off, and while pressing the pen in the desired area of the picture, pressing the keyboard space bar will displays the RGB values for the colour currently under the cursor. Tapping the space bar again or swiping off turns the numbers off. With the numbers displayed, if the cursor is moved to another colour, the new values are displayed.

A colour may be generated by entering values into the RGB boxes. The colour box to the left of the numbers shows the colour defined by the numbers. Once the numbers are swiped off the colour can be used.

If *DRAW STENCIL* is on then a fourth box appears which shows the density of stencil that will be drawn. Normally this is 100% (or 255), for fully opaque but can be altered to make areas of stencil transparent by setting the value below 100%. This value will be held until a further change is made and the *SHADE* box in *PAINTING* turns pink to indicate that the stencil value has been changed. Tapping the box changes it back to normal and the standard 100% setting. In this way *SHADE* can be used to switch on/off the special draw stencil value.

HARRIET

BRUSHES

Description

PAINT, *CHALK* and *AIRBRUSH* are the three basic brush types which, as well as being used for their named functions, can also be used with *WASH*, *SHADE*, *RESTORE*, *SMOOTH*, *CRISP*, *BLUR* and *FIELD*. Thus it is possible to "mix and match" different brush types, e.g: *PAINT/WASH* and *AIRBRUSH/SHADE* to suit different requirements. The pen is pressure sensitive in all paint modes. For each brush type, a selection of five brush sizes is available. These are displayed and selected to the right of the palette area.

PAINTING	paint	wash	shade	magnify	zoom	DRAW STEN	USE STENCIL	
GRAPHICS	chalk	copy	smudge	Quantel Harriet		add	hicon	key
EFFECTS	airbrush	restore	smooth			remove	reverse sten	
PASTE UP	3D	crisp	blur			wipe sten	USE	GRID
ANIMATION		field	1	2			restore sten	
LIBRARY								

Paint

This is the default and is automatically selected on power-up. Round in shape, it deposits colour evenly over the range 0%-100% depending on pen pressure, and can be used in a similar manner to a wide range of conventional media, ranging from oils to pencil. Light pressure on the pen gives a transparent deposit of colour and full pressure causes colour to be laid down as a dense, opaque film.

Chalk

Similar to *PAINT* but with a texture not unlike chalk, or perhaps a soft pencil or crayon on a textured paper. A fine *CHALK* closely simulates pencil sketching techniques.

HARRIET

Airbrush

An exact parallel with the conventional airbrush, offering a superbly fine, even "spray". The airbrush, like all the brushes, is available in five widths and thus most conventional airbrush techniques may be applied, with the exception of spatter. The elimination of paint mixing, brush cleaning and rinsing, nozzle/needle maintenance and so on enables one to work with remarkable speed.

Furthermore, it is possible to erase mistakes (using background colour), to avoid drips and splashes, and to select intermediate shades off the canvas, thus making possible faultless vignetting. (See also the *STENCIL* section for masking techniques.)

The percentage 'paint/water' mix of the airbrush can be varied from 1-100% and, being pressure sensitive, the density of airbrushing is continuously variable during use.

Note: The current brush selection is shown in the blue information box of the menu, for example when working in the *GRAPHICS* menu it will prompt *CHALK, PAINT, or 80% AIR*.

Wash

This can be used with any of the brushes with the difference that only the colour changes while leaving the shade (luminance) detail unchanged. When selecting a colour, bear in mind that it will be presented as a "dilute" solution, thus dark blue will be applied as a luminous turquoise wash.

WASH enables one to undertake delicate watercolour illustration techniques and is also useful for re-colouring images without affecting the underlying line and shade structure. Selection of *BLACK, GREY* or *WHITE* when in *WASH* will result in the reduction of an image to monochrome. If it is required to darken or lighten an area, use *SHADE*.

Shade

This alters the shade (luminance), without affecting colour (chrominance). The colour on the brush has no chromatic significance - it represents a *shade* which will be either lighter or darker than the area on which you are working. Continued application of *SHADE* will have the effect of balancing to the luminance selected.

Smudge

The *SMUDGE* brush operates on any image just as if the 'paint' of which it is made has suddenly become wet. This makes a variety of new creative effects possible, including selective motion blurs. The brush can be used to 'smudge' the picture, or simply to smudge the edges of an outline, replacing any clearly defined edge with a smudged (ill-defined) effect. Note that smudging with either continuous outward strokes, or continuous inward strokes will produce different effects.

Note: *SMUDGE* can also be applied with cut-outs. For cut-out information refer to the 'Paste Up Menu' chapter.

Copy

When the *COPY* brush is selected, tapping down on the picture allows a box to be drawn out. The second tap defines the box which shows where copy will operate from and to. Image content may then be copied from one part of the picture to another, with any size or type of brush (*PAINT*, *CHALK* or *AIRBRUSH*). This can also be used with *STENCIL*. To cancel the box, lift the pen out of proximity of the tablet.

Blur

This enables the brush to be used to blur, or soften, the picture: superb for 'pushing back' backgrounds and so emphasising objects in the foreground. *BLUR* may be used in different degrees: simply swipe off and on again and an already blurred image may be further blurred.

Smooth

This is a reduced version of *BLUR*. Often used in montage work to homogenise the appearance and focus of different picture elements.

Crisp

The opposite of *BLUR*. *CRISP* sharpens up edge definition and can be used with good effect in combination with *PERSPECTIVE*.

HARRIET

Field

This allows the selection of either field of the picture, using the paint brushes. Select box 1 or 2 for field required.

Restore

RESTORE allows pictures held in either of the two background picture stores to be selectively revealed through the current picture. This popular facility is used both for creative effects and as a convenient means of temporarily saving stages of work in process. Note: that by pressing either *old* or *new* will display the picture currently held in the appropriate picsten file.

MAGNIFY

Description

This facility allows a x2 magnification of any area of the picture, and is made available on the menu primarily for the operational compatibility with earlier Quantel systems. The menu also provides the *ZOOM* function (adjacent to *MAGNIFY*), refer to the next section 'Zoom' for further information.

Application

When *MAGNIFY* is selected, all brushes remain at normal size, thus halving line-widths when the picture is reduced to normal. This can be used to create very fine line work.

Operation

Press *MAGNIFY* and a yellow rectangle will appear on the screen. Its size corresponds to the screen area and its position is controlled by the stylus. Move the box to the desired spot to be displayed and tap down with the pen. The resultant magnified image may now be worked on using all the painting and graphic facilities.

To reduce, press *MAGNIFY* again. *MAGNIFY* offers a one-off magnification. If one wishes to double the size again, adopt the following procedure:

Press *SAVE PICSTEN* and confirm (see *SAVE PICSTEN*).

- i Press *MAGNIFY* to reduce to normal size.
- ii Press *RESTORE PIC* and *CONFIRM* to restore magnified image.
- iii Press *MAGNIFY*. Select area required and magnify.

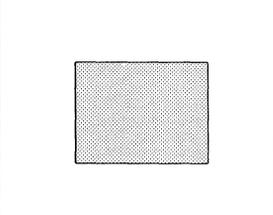
Note: that you can only reduce the resultant image by one step.

HARRIET

ZOOM

Description

The *ZOOM* facility allows the picture to be expanded linearly from nominal up to the maximum magnification (where only a few pixels displayed).

↓	↑	zoom	DRAW STEN	USE STENCIL			
			save picsten		display sten		
			old	new	reverse sten		
			wipe pic		USE	GRID	
			restore pic				

PAINTING

Application

This allows very fine detail images to be produced or modified at very high magnifications.

Operation

When zoom is selected a map is displayed to the left of the stencil menu giving the relative position of the viewed section of the picture (grey rectangle) with respect to the complete picture.

The up arrow increases the size of the viewed part of the picture and the down arrow decreases the size.

By placing the pen on the grey rectangle and moving it within the frame, the magnified part of the picture being displayed can be changed. By placing the pen on the picture area (with menu present) the picture can be scrolled by approximately 50% of the viewed picture area.

HARRIET

If *ZOOM* is turned off, the whole picture is shown. If *ZOOM* is turned back on, the magnification returns to the previously used setting.

Note: that the brush size being used stays directly proportional to the size of the expanded picture, therefore fine brushes should be used at high magnification.

STENCIL

Description

The Stencil is effectively the systems internal key and is a medium through which paint, graphics items or cutouts are applied to the underlying background image. Stencils (keys) can be created automatically by the *EFFECTS-OVERLAY* function, by hand using any of the Painting and Graphics tools and combination of both.

In its application the Stencil facility can be used to create sophisticated yet subtle effects such as to define irregular shaped cutouts and floating graphics.

The Stencil is a multi-level medium, producing effects from fully transparent to fully opaque - dependant on the density of the stencil applied and the techniques used.

Note that the stencil medium is always displayed as semi-transparent for ease of use and positioning of cutouts.

Application

The stencil facility can be used in virtually all areas of the system and can be used in the following ways:

In its simplest form a stencil can be used as a mask, performing the same function as a low tack masking film to control the application of colour or processing to a specific element of the image (or its background by reversing the stencil).

The stencil can also be used as a cutting out instrument for detaching part of an image from its background preparatory to paste up procedures allowing the creation of irregular shaped and semitransparent cutouts or areas of picture.

In the production of mattes and as the means of dividing a picture into different planes, allowing the introduction of areas of foreground and background.

HARRIET

Operation

The two columns of boxes to the extreme right of the menu display constitute the *STENCIL* menu. Note that *STENCIL* is available for use with *PAINTING*, *GRAPHICS*, *EFFECTS*, *PASTE UP* and *ANIMATION* functions and is permanently displayed when any one of these five menus is in operation.

Major headings are displayed in capitals, while subsidiary functions are shown in lower case.

The three function boxes on the left of this menu, *SAVE PICSTEN*, *RESTORE PIC* and *WIPE PIC* are not strictly stencil menu functions but are included here so that they may also be available at any time during *PAINTING*, *GRAPHICS*.

Draw Sten

Press the *DRAW STEN* panel, and the menu display changes:

PAINTING	paint	wash	shade	magnify	zoom	DRAW STEN	USE STENCIL
GRAPHICS	chalk	copy	smudge	Quantel Harriet		add	hicon key
EFFECTS	airbrush	restore	smooth			remove	reverse sten
PASTE UP 3D		crisp	blur			wipe sten	USE GRID
ANIMATION		field	1 2			restore sten	
LIBRARY							

The left hand column of boxes refer to the application of the stencil "medium" to the whole picture area. Thus to add stencil medium to the whole picture, press *ADD* followed by *WIPE STEN*. To remove, press *REMOVE* and then *WIPE STEN*. Note: that when *DRAW STEN* is selected the painting cursor changes to the stencil colour (normally red).

add

When selected the stencil medium can be added to any part of the picture area by painting, air-brushing, chalking or by applying graphic shapes and text.

remove

When selected the stencil medium can be removed from any part of the picture area by painting, airbrushing, chalking or by applying graphic shapes and text.

STENCIL

wipe sten

The small box to the left of *WIPE STEN* determines the colour of the stencil medium. Its use is as for *WIPE PIC*. Note: that the stencil medium is slightly transparent.

restore sten

This is the counter point of the *SAVE PICSTEN* function. This allows the previously saved stencil to be restored to the screen. Press this to restore the saved stencils, *NEW* or *OLD*. It will only restore the selected *NEW* or *OLD* stencil not the picture.

hicon

This function, when pressed, shows the stencil as a high contrast black and white key. This allow the effect of the current key setup to be viewed. The edges of the image area can be viewed by pressing down on the *HICON* box and dragging the pen.

key

This function, when pressed, shows the effect of current frame keyed by the current stencil. The edges of the image area can be viewed by pressing down on the *KEY* box and dragging the pen.

HARRIET

Use Stencil

When using the stencil as a masking medium, press *USE STENCIL*, select the required process from the appropriate menu and, using the stencil as a conventional mask, work as normal.

reverse sten

Selection of *REVERSE STEN* reverses the polarity of the stencil, i.e; 'positive' and 'negative' stencil areas will be reversed. This allows the accurate retouching of the stencil boundary.

Both 'positive' and 'negative' stencils can be used together. For example the execution of a map as a stencil, the subsequent use of the stencil to colour the land mass and, using the reversed stencil, the application of graduated sea colour or an airbrush halo effect round the shore-line.

Having drawn a stencil, it may be saved in the *LIBRARY* and/or used.

display sten

The stencil may be displayed, whether in use or not. Press *DISPLAY STEN* to display and press again to cancel.

Note: that the stencil cannot be displayed if a pictorial cut-out is being positioned over a picture.

Picsten (Old & New)

save picsten

These are purely temporary files which can store two pictures and stencils, 'old' and 'new'. It is particularly useful for the successive saving of an image as a picture or diagram is being built up. This means that a mistake need not be fatal, as one can always cut back to the last stage saved.

A selected area of the picture can also be restored by using 'old' and 'new' to selectively mix between pictures using the 'restore' brush.

restore pic

This is the counter point of the *SAVE PICSTEN* function. This allows the previously saved picture to be restored to the screen. Press this to restore the saved pictures, *NEW* or *OLD*. It will only restore the selected *NEW* or *OLD* picture not the stencil.

Note that this box changes to *RESTORE STEN* when *DRAW STEN* is enabled.

wipe pic

The small square box to the left of the *WIPE PIC* panel contains the colour with which the picture will be wiped. Select or mix the required colour on the palette, return to the menu, press down in the small box to load the colour and then press *WIPE PIC*. Naturally, this will destroy any picture on the screen, so save it away first if required (see *SAVE PICSTEN* or *LIBRARY*). Note that this function is controlled by *USE STENCIL*. Thus if *USE STENCIL* is activated, selection of *WIPE PIC* will wipe all the picture with the exception of the stencil covered area.

HARRIET

As a safety measure, these functions, together with several other functions can be protected by a *CONFIRM* facility. Selection of, for example, *WIPE PIC*, therefore requires a second selection as the *CONFIRM* panel is thereby displayed.

Swiping the menu off and on again reverts to the original status if you wish to cancel the command. More experienced users may not require this facility and provision is made for turning off the *CONFIRM ON* function in the Full Page - *ARTIST* menu.

CHAPTER 3
GRAPHICS MENU

HARRIET

GRAPHICS OVERVIEW

GRAPHICS OVERVIEW

Description

The *GRAPHICS* menu provides various graphic facilities that can be used to produce traditional geometric items such as lines, rectangles, circles, ellipses. This menu also provides other powerful tools such as curves, grids and fill.

PAINTING	lines	curves	magnify	zoom	DRAW STEN	USE STENCIL
GRAPHICS	rectangles		print		save picsten	display sten
EFFECTS	circles				old	new
PASTE UP	3D	ellipses			wipe pic	USE GRID
ANIMATION	fill				restore pic	CLEAR GLUE
LIBRARY	def grid					

GRAPHICS

lines

Selection of *LINES* allows individual straight lines to be drawn in any brush colour, size and type.

curves

The *CURVES* menu allows 'Flexi-Curves' to be generated using Bezier curves and tangents. Note that this menu is only available if the Effects option is installed.

rectangles

When this menu function is selected, rectangles can be drawn as open, solid, graduated or filled, and each of these can be constrained to a square and be centred.

circles

When this menu function is selected, circles can be drawn as open, concentric and solid.

ellipses

When this menu function is selected, ellipses can be drawn as open, concentric and solid.

HARRIET

fill

This function will automatically colour in a defined area with the brush colour.

def grid

A grid facility is provided, allowing *GRAPHICS*, *PASTE UP* and *ANIMATION* functions to be controlled in a regular, mathematical manner. Grids are defined within the *GRAPHICS* menu and their use is determined within the *STENCIL* menu.

Note that if all *GRAPHICS* functions are turned off, the pen can paint with the selected colour and brush, and that pressing the pen on an area of colour will automatically fill it with pen colour.

GRAPHICS OVERVIEW

Operation

In the *GRAPHICS* menu lines, rectangles, circles and ellipses can be drawn by pen or by defining them numerically.

It is possible to use the graphics functions either without, or with the menu displayed, there being considerable differences in operation between the two modes. One major feature that applies in both modes is that the last used circle, rectangle, etc. is always shown when the function is re-selected. If the menu is swiped-off the first pen press fixes the origin/centre of the graphical element and the second press will stick it.

A WITH MENU DISPLAYED

With the menu on screen, graphics figures are overlaid and not yet part of the picture. This means that they can be moved and adjusted before they are committed to the composition. Once their position has been determined, the *STICK* function is used to integrate them into the picture.

This mode of operation is especially useful for using statistics to define the graphics. In this type of operation the second pen press will tack the graphic (except in the case of radial lines where the pen must be lifted out of proximity to fix the line). It is not stuck and so can be adjusted in any way. For example, by locating the part to be changed and sliding the pen, under pressure, a circle's radius can be increased/decreased.

By pressing down onto the centre and sliding the pen under pressure, the graphic element can be moved. By pressing the side, and sliding it, the side can be adjusted. All graphic shapes can be adjusted in this way and when they are satisfactorily defined they can be confirmed with *STICK*. After a *STICK* another copy of the graphic is available. Note that when using this mode, solid circles and ellipses are only shown as solid when the pen is lifted. When switching back to non-solid (outlines) it is necessary to swipe off to fully clear the solid mode.

B WITH MENU SWIPED-OFF

With the menu swiped-off, graphics figures are automatically stuck down when the pen is pressed.

HARRIET

C GRAPHICS SNAP

Certain key points of graphics, eg circle centres and circumferences, ends of lines and sides of rectangles, will 'attract' the cursor causing it to snap onto them. This makes them easier to be picked up and adjusted before they are stuck down, as well as helping further items to be attached or built onto the original graphic shape.

This applies only to graphics drawn with the menu up. As soon as one item is stuck or another is previewed, the snap is gone.

D USING STATISTICS

With *STATISTICS* turned on, the numbers defining the graphic are shown at the bottom of the screen. With the menu swiped off the numbers are there for reference only, but operating with the menu displayed, entries can be made into the number boxes so allowing the graphic to be defined or adjusted directly by numeric entry.

When operating with the menu up any green box may be selected, turning it pink, and the numbers adjusted.

As set up in the Full Page *ARTIST* menu statistics may be displayed as either *pixel* counts, with angles expressed in degrees, or as % where they appear as percentages of the screen height or width; top-left corner is 0, 100% and the bottom-left 0, 50% (ie 0 - 100% of the x and y width and height is also double that of the screen). Angles are expressed as a percentage of whole rotations, zero being at 12 o'clock. The displays show the values in a format as follows:

Lines	x origin	y origin	x end	y end
Lines (radial)	x fix	y fix	length	angle
Rectangles	x origin	y origin	x length	y length
Circles	x centre	y centre	radius	
Circles (tangential)	x fix	y fix	radius	angle
Ellipses	x centre	y centre	x radius	y radius
Ellipses (tangential)	x fix	y fix	x radius	y radius *

* With Ellipses (tangential), operating with the menu up, the *ANG* (angle) box allows the ellipses to be rotated about the 'fix' point.

LINES

Description

Selection of *LINES* allows individual straight lines to be drawn in any brush colour, size and type.

PAINTING		lines	curves	stick	magnify	zoom	DRAW STEN		USE STENCIL	
GRAPHICS		rectangles		connected	paint		save picsten		display sten	
EFFECTS		circles		h v only			old	new	reverse sten	
PASTE UP	3D	ellipses		radial			wipe pic		USE	GRID
ANIMATION		fill		parallel			restore pic		CLEAR	GLUE
LIBRARY		def grid								

Application

This facility can be used in any place where a traditional ruler, set-square or T-square would be used.

Operation

Select a brush colour, style and width. Tapping down on the picture fixes one end of the line, which may now be drawn out to any length in any direction and is shown dotted. Tap down again and the other end will be fixed and the line is drawn.

GRAPHICS

HARRIET

The boxes on the right provide two control to be applied to the line:

stick

When the desired line has been produced, it is permanently stuck down using the *STICK* function. Once this has been done an identical line will be displayed over the top.

connected

Selection of *CONNECTED*, quite simply, connects one line to another. Thus the second tap down, which secures the end of a line, tacks down the start of a second line, and so on until one swipes off to the menu.

Note: Lifting the pen out of proximity will break the connected line.

hv only

This constrains the drawing of lines, whether separate or connected, to the horizontal and vertical.

radial

This allows lines to be drawn from a common origin. Swipe off the menu, press once to define the origin and then again to define the end of the line. Keeping the pen in proximity further line ends can be established with each tap each originating from a common centre.

parallel

This allows lines to be drawn in parallel. Swipe off the menu, press once to define the origin and then again to define the end of the line. Keeping the pen in proximity further lines can be drawn in parallel to the first by pressing the pen down subsequent times.

CURVES

Description

The *CURVES* menus control the optional curves facility. This facility allows 'Flexi-Curves' to be generated controlled by the following boxes.

PAINTING	lines	curves	stick	magnify	zoom	DRAW STEN	USE STENCIL
GRAPHICS	rectangles	filled	open	paint		save picsten	display sten
EFFECTS	circles	tangent	lock			old	new
PASTE UP	3D	ellipses	straight	round		wipe pic	USE GRID
ANIMATION	fill	insert				restore pic	CLEAR GLUE
LIBRARY	def grid	delete	all				

Application

The curves facility allows images to be manually traced to create line-work.

Operation

Select a brush colour, style and width. Tapping down on the picture fixes one node of the curve, which may now be drawn out to any length in any direction. Tap down again and another node will be fixed and the curve between these nodes is drawn.

Nodes appear as crosses on the curve and can be used to re-position the curve as required. Each segment of the curve emanating from a node can be controlled by the tangents (lines at a tangent to the drawn curve).

GRAPHICS

HARRIET

stick

This is used to permanently 'stick' down the completed curve, so that a new one can be started. Note that once a curve has been stuck in place it cannot be edited or removed. It is recommended that the *SAVE PICSTEN* and *RESTORE PIC* functions are used carefully in conjunction with curves, so that the picture onto which the curves are to be placed is not damaged by incorrect ones.

filled

When selected, the resultant curve will be filled (solid) with the selected brush colour. Any open curves will automatically be closed when *FILLED* is used.

tangent

When this function is selected the segments that make up the curve can be controlled by tangents and normals connected to the nodes of each curve segment.

The position of the tangent/normal cross on the node controls the start/stop position of curve segment and the length of the tangent or normal controls the amplitude of the curve segment.

Touching a normal allows it to be moved, so affecting the line passing through the node in both amplitude and direction.

Touching the tangent affects only the curve emanating from that side of the node.

straight

This function makes the curve emanating from the selected node (curve start point) straight. Note that both nodes (start point and stop point) must be set to *STRAIGHT* for the curve to become a straight line.

straight

all

This straightens the curve segments emanating from all nodes.

CURVES

insert

This function allows new nodes to be created anywhere on an existing curve.

Note: in practice it is advisable to use as few nodes as possible, because complicated curves can be difficult to modify.

delete

This allows any node on a curve to be deleted causing the two adjacent curve segments to form a single segment.

delete

all

This deletes all curve nodes, effectively deleting the current curve.

This does not affect curves that have been previously stuck down.

open

Curve segments generated between nodes are normally closed, that is the two open ends of the drawn curve are closed automatically by a curve segment joining them. The *OPEN* option leaves the two ends open.

lock

This allows any node to be locked in position so that the curve emanating from it is not affected by any modifications to adjacent nodes.

Nodes can be unlocked by selecting *STRAIGHT* or *ROUND*.

lock

all

This locks all nodes, so that modifying any one node will not affect any other.

round

This function is the opposite of *STRAIGHT* and rounds the curve segment emanating from a node.

HARRIET

round

all

This rounds the curve segments emanating from all nodes.

RECTANGLES

RECTANGLES

Description

When this menu function is selected, rectangles can be drawn as open, solid, graduated or filled, and each of these three can be constrained to a square and be centred.

PAINTING		lines	curves	stick		magnify	zoom	DRAW STEN	USE STENCIL	
GRAPHICS		rectangles		solid	filled	paint		save picsten	display sten	
EFFECTS		circles		↓↑	↔			old	new	reverse sten
PASTE UP	3D	ellipses		square				wipe pic	USE	GRID
ANIMATION		fill		centred				restore pic	CLEAR	GLUE
LIBRARY		def grid								

Application

The *RECTANGLES* facility allows rectangular areas of paint or stencil to be applied to the picture.

Operation

Select brush colour, type and width. Select *RECTANGLES*, ensuring that none of the right hand functions is illuminated pink. Press down now to tack down a corner of the rectangle. The pen draws out the opposite corner to the required position, where a second press secures it. The rectangle will adopt the line thickness and style (e.g; chalk or airbrush) currently selected.

HARRIET

stick

When the desired rectangle has been produced, it is permanently stuck down using the *STICK* function. Once this has been done an identical rectangle will be displayed over the top.

solid

As before, but select *SOLID*. The resultant rectangle is displayed as a solid area of the selected colour or stencil. This operation is often used to process large areas (or the whole picture) with *WASH*, *RESTORE*, *BLUR*, *CRISP*, etc.

filled

The *FILLED* facility is available within graphics rectangles, and this provides a way of drawing boxes with the soft edge of the currently selected colour or stencil brush; preventing ringing on the edges.



The two boxes containing vertical and horizontal arrows allow the graduation of a colour or stencil both vertically and horizontally in a rectangle. The level of graduation is defined by the luminance value of the colour deposited in the box next to the arrow boxes and the colour currently on the end of the pen.

Graduating vertically can be defined by selecting the  arrow box, then by tapping down one corner of the rectangle secures the colour or stencil value on the pen. The subsequent tap, at the opposite corner, secures the colour or stencil value in the box.

Rectangles may be drawn either top to bottom or bottom to top.

Selecting the  arrow box defines the direction of the graduation horizontally, either from left to right, or from right to left.

RECTANGLES

Note: When *DRAW STEN* is selected, drawing a graduated rectangle will define a density graduation of the stencil proportional to the luminance of the two colours selected.

If, for example you wish to graduate the entire screen from blue at the top to white at the bottom, for use as a background, select white and deposit it in the small box. Select blue and, removing the palette, tap down at the extreme top left corner of the screen and extend the resultant rectangle to the extreme bottom right hand corner. Press down. As mentioned, this facility can be used with the stencil and so any shape and its background can be graduated.

square

This controls all the facilities described above and constrains them to a square format. The square is centred around the initial pen position on the screen.

centred

The rectangles function also offers the *CENTRED* attribute. This allows the rectangle of colour or stencil to grow from a centre point defined by the pen.

The first pen press places the centre of the rectangle, then a subsequent press produces the rectangle. The box cursor is kept as long as the pen is held in proximity, allowing concentric boxes to be drawn.

HARRIET

CIRCLES

Description

When this menu function is selected, circles can be drawn as open, concentric and solid.

PAINTING		lines	curves	stick	magnify	zoom	DRAW STEN		USE STENCIL	
GRAPHICS		rectangles		solid	paint		save picsten		display sten	
EFFECTS		circles		tangential			old	new	reverse sten	
PASTE UP	3D	ellipses				wipe pic		USE	GRID	
ANIMATION		fill				restore pic		CLEAR	GLUE	
LIBRARY		def grid								

Application

The *CIRCLES* facility allows circular areas of paint or stencil to be applied to the picture.

Operation

Selection of *CIRCLES* offers three functions: *STICK*, *SOLID* and *TANGENTIAL*. If *SOLID* is not selected, the circle will be drawn as an open figure with the characteristics of the brush selected. Press down in the picture area to determine the centre of the circle. Movement of the pen draws out a circle centred on this point. A second press confirms the required diameter.

The first pen press places the centre of the circle, then a subsequent press produces the circle. A further dotted circle cursor is kept as long as the pen is held in proximity, allowing concentric circles to be drawn.

HARRIET

stick

When the desired circle has been produced, it is permanently stuck down using the *STICK* function. Once this has been done an identical circle will be displayed over the top.

solid

Selection of *SOLID* causes the circle to be drawn as a solid figure bounded by the selected brush type. If a graduated circle is required, define the circle as a stencil and use a graduated rectangle to deposit the required colours through the stencil.

tangential

This function allows circles to be drawn using two points to define the diameter. The first press of the pen establishes one point and as the pen is drawn out the circle appears. The angle of the diameter can be changed to rotate the circle about the point of the original pen press.

ELLIPSES

Description

When this menu function is selected, ellipses can be drawn as open, concentric and solid.

PAINTING		lines	curves	stick	magnify	zoom	DRAW STEN		USE STENCIL	
GRAPHICS		rectangles		solid	paint		save picsten		display sten	
EFFECTS		circles		tangential			old	new	reverse sten	
PASTE UP	3D	ellipses		ang 0.0			wipe pic		USE	GRID
ANIMATION		fill				restore pic		CLEAR	GLUE	
LIBRARY		def grid								

Application

The *ELLIPSES* facility allows elliptical areas of paint or stencil to be applied to the picture.

Operation

Selection of *ELLIPSES* offers three functions: *STICK*, *SOLID* and *TANGENTIAL*. If *SOLID* is not selected, the ellipse will be drawn as an open figure with the characteristics of the brush selected. Press down in the picture area to determine the centre of the ellipse. Movement of the pen draws out an ellipse centred on this point. A second press confirms the required major and minor axes.

The first pen press places the centre of the ellipses, then a subsequent press produces the ellipses. An identical dotted ellipse is kept as long as the pen is held in proximity, allowing concentric ellipses to be drawn.

HARRIET

stick

When the desired ellipse has been produced, it is permanently stuck down using the *STICK* function. Once this has been done an identical ellipse will be displayed over the top.

solid

Selection of *SOLID* causes the ellipses to be drawn as a solid figure bounded by the selected brush type.

tangential

This function allows ellipses to be drawn using two points to define the axes. The first press of the pen establishes one point and as the pen is drawn out the ellipse appears. The angle of the axes can be changed to rotate the ellipse about the point of the original pen press.

ang

This allows the angle of the ellipse to be altered numerically. The number in this box automatically changes if the ellipse is created with *TANGENTIAL* enabled.



Description

This function will automatically colour in a defined area with the brush colour.

PAINTING		lines	curves		magnify	zoom	DRAW STEN		USE STENCIL	
GRAPHICS		rectangles			paint		save picsten		display sten	
EFFECTS		circles					old	new	reverse sten	
PASTE UP	3D	ellipses					wipe pic		USE	GRID
ANIMATION		fill					restore pic		CLEAR	GLUE
LIBRARY		def grid								

GRAPHICS

Application

The *FILL* is particularly useful for adding or removing areas of Stencils bounded by a solid line.

Operation

The *FILL* function can be used in two different ways to suit the operator's requirements. In both cases the system starts from the point selected and searches for the luminance transition that forms the edge of the area. However, if *FILL* does not behave as you expect, or colour leaks through a gap, you can abort at any time by pressing the pen.

The first way is for areas of solid colour, bounded by a solid colour. Select the *FILL* box, swipe off the menu and tap the pen anywhere within the area to be filled.

The second way is for area of solid colour, bounded by a semi-transparent colour; for example an airbrush line, where the image may have many intensity levels instead of a clearly defined edge to the area. Select the *FILL* box, swipe off the menu and tap the pen anywhere within the area to be filled and slide the pen (under pressure) to the boundary to be filled.

HARRIET

Note that this second way can be used to avoid halo effects at the edge of the filled area, but is more likely to leak. One of the *SAVE PICSTEN* buffers should therefore be used to keep the original safe.

Note that if all *GRAPHICS* functions are turned off, the pen can paint with the selected colour and brush, and that tapping the pen on an area of colour will automatically fill it with pen colour.

DEFINE GRID

DEFINE GRID

Description

A grid facility is provided, allowing *GRAPHICS*, *PASTE UP* and *ANIMATION* functions to be controlled in a regular, mathematical manner. Grids are defined within the *GRAPHICS* menu and their use is determined within the *STENCIL* menu.

PAINTING	lines	curves	whole	cell	magnify	zoom	DRAW STEN	USE STENCIL	
GRAPHICS	rectangles		H1	V1	paint		save grid	display sten	
EFFECTS	circles		repeat	square			old	new	reverse sten
PASTE UP	3D	ellipses	tab	draw grid			wipe pic	USE	GRID
ANIMATION		fill					restore grid	CLEAR	GLUE
LIBRARY		def grid							

Application

Grids are especially useful for page layout when graphics items, text and line-work are to be very accurately positioned.

Operation

The *DEFINE GRID* function produces the display shown above and when the pen is applied a yellow rectangle will appear within the picture area. The size of this rectangle corresponds to one unit, or interval, of the grid. While the menu is still displayed, the pen position controls the position of this displayed rectangle. Use of the Hand Unit thumb switch and of the hard keyboard unit controls the size and proportion of the rectangle. The green boxes refer to the horizontal and vertical dimensions of the grid interval, respectively.

HARRIET

A grid can be produced using the pen by first pressing the pen on screen to secure one corner of the yellow grid rectangle then positioning and pressing the pen to secure the opposite corner of the rectangle. The displayed blue grid produced in this way can be modified by placing the pen over any of the blue lines (or where they cross) until a yellow line appears. Then the grid can be dragged (maintaining pen pressure while moving the pen) to its new size and positions.

whole

Applies the grid to the entire picture area.

cell

This is used to set the grid size to that of a cell animation.

H 1

V 1

These green boxes define the number of divisions (displayed as dots) between the grid lines. Press either box to activate (pink) and to increase or decrease the numerical value used; then use either up or down movements of the pen on the tablet, the Hand Unit thumb switch, the arrow keys on the keyboard, or the menu numeric pad. A second tap of the (pink) box de-activates the selection.

repeat

With this function enabled, the defined grid is replicated with all its sub divisions over the whole screen. When disabled, only the defined grid area is shown.

square

This is used to make the grid square. The vertical edge of the existing matrix is used to define the size of the square grid.

DEFINE GRID

tab

The *TAB* function allows irregular grids to be defined. Extra grid lines in the horizontal or vertical direction may be added at will. Up to 100 lines may be inserted.

H

V

Extra grid lines are inserted using either H or V and pressing down when the cursor is in the correct position, or by using the numeric box value and the *INSERT* function.

0

The numeric box next to H and V shows the position of the currently selected tab. Intersections of tab and grid lines behave just like ordinary grid points with *USE GRID*.

insert

Line positions can be edited by pressing when the cursor changes from a cross to a line to indicate that it is over a tab position. To quit editing a tab, select another tab or insert a new one using the *INSERT* box or pressing when the cursor is a cross.

delete

Tabs may be deleted by selecting the *DELETE* box and pressing down when the cursor is highlighted over a tab. All existing horizontal and vertical tabs may be deleted by pressing H or V respectively when 'delete' is on.

draw grid

Use this in conjunction with *DRAW STEN*. Using *ADD* or *REMOVE*, as appropriate, this automatically draws the grid over the entire screen, as a stencil, using the brush type and thickness selected on the pen.

HARRIET

The Use / Grid Menu

As mentioned, the grid controls *GRAPHICS*, *PASTE UP* and *ANIMATION* functions. Use of the grid is initiated in the *STENCIL* menu on the far right side of the screen. Press *USE* and the sub menu appears displaying the *H*, *V*, *L*, and *R* functions.

PAINTING	lines	curves	whole	cell	magnify	zoom	DRAW STEN		USE STENCIL			
GRAPHICS	rectangles		H1	V1	paint		save grid		display sten			
EFFECTS	circles		repeat	square			old	new	reverse sten			
PASTE UP	3D	ellipses		tab	draw grid		wipe pic		USE	GRID		
ANIMATION	fill		H	V	O		restore grid		H	V	L	R
LIBRARY	def grid		inset	delete								

The *USE* box will limit operations to the defined grid, if selected. The *H*, *V*, *L* and *R* boxes can be used to limit the grid to be active only in the horizontal or vertical axes or to position a cut-out to the left, centre or right of the grid. Press the relevant box to activate.

save grid

The *SAVE GRID* function allows the grid to be saved in either the *NEW* or *OLD* buffers. These grids can then be restored as required *RESTORE GRID*

restore grid

The *RESTORE GRID* function allows previously saved grids to be restored from the *NEW* and *OLD* buffers. This effectively allows three grids to be used during a session; one grid saved as *OLD*, one grid saved as *NEW*, and the currently setup grid.

GLUE

Description

This function remembers end points of lines and intersection points of lines, centres and circumferences of circles and ellipses. It imparts adhesive properties to these points (if *GLUE* was enabled when the graphics were drawn). In this way the cursor, and the graphic element being placed, will snap to these points when the cursor is close to them.

PAINTING		lines	curves	magnify	zoom	DRAW STEN		USE STENCIL	
GRAPHICS		rectangles		paint		save picsten		display sten	
EFFECTS		circles				old	new	reverse sten	
PASTE UP	3D	ellipses				wipe pic		USE	GRID
ANIMATION		fill				restore pic		CLEAR	GLUE
LIBRARY		def grid							

GRAPHICS

Application

This function is used to assist in the construction of geometric compositions by accurately positioning consecutive elements using the 'glue points' of the previously placed elements.

Operation

When graphics are drawn with *GLUE* on, then the 'glue points' will be created as previously described, the cursor will snap to 'glue points'. This will be indicated by a change in cursor colour from yellow to blue.

New 'glue points' can be created as required. Simply move the cursor to a known 'glue point' (such as the end of a line) while holding the pen down (with the cursor blue) and sliding the pen along the line to the desired position. Lift the pen momentarily and move to another position, if for example in connected lines, then a new line will be created using the new 'glue point'.

HARRIET

GLUE

With *GLUE* on (box pink) 'glue points' are added as work progresses. If *USE* is on, and *GLUE* is switched off, the box turns to blue to indicate that *GLUE* is not in use. In this mode existing 'glue points' can be used, but no new ones will be added.

CLEAR

Individual 'glue points' (and lines emanating from them) can be removed from the glue by pressing *CLEAR*, swiping off the menu and pressing the points to be removed.

CLEAR

GLUE

To remove all points from the glue press *GLUE* after *CLEAR*.

The *GLUE* function can be used with *CURVES* but only the defined points along the curve will be remembered when the curve is stuck down, not the path of the curve.

The *GLUE* function can be used in *PASTEUP*, in conjunction with the left, right, top and bottom controls (represented by the *L*, *R*, *T*, *B* boxes) selected from *GRID*, to snap any corner of the cutout to the 'glue point'. Note that this only operates when the menu is swiped off.

In *PASTEUP*, when a cutout is stuck with *GLUE* on, the four corners of the cutout are added as points to the glue.

Both *GRID* and *GLUE* are available in *PASTEUP 3D*, by swiping off the menu with the *PINS* function selected.

CHAPTER 4
EFFECTS MENU

HARRIET

EFFECTS OVERVIEW

EFFECTS OVERVIEW

Description

The *EFFECTS* menu provides various facilities that allow the image processing of pictures.

PAINTING	overlay	do all	DRAW STEN	USE STENCIL	
GRAPHICS	field mode		save picsten	display sten	
EFFECTS	colour map		old	new	reverse sten
PASTE UP	3D	mosaic	wipe pic	USE	GRID
ANIMATION	colour fettle		restore pic		
LIBRARY					

The following menus are provided:

overlay

This function allows the expression of any picture as a stencil. The stencil is produced using the luminance values of the picture itself and scaled by the two colour pots (normally black and white) which control the range of the stencil.

field mode

This menu allows the image to be reproduced as an interpolated field 1 or field 2 image to remove inter-field artifacts.

colour map

This menu allows the luminance content of the image to be re-defined using colours from the palette area.

mosaic

This menu allows the conversion of the image into mosaic tiles of uniform size and colour.

HARRIET

colour fettle

This menu allows the brightness, contrast and colour characteristics of the image to be re-defined. This allows pictures from different sources to be colour matched, or allows the ambience (lighting and colour) of a scene to be changed.

do all

This processes the whole picture using the current menu setup parameters.

setup all

This allows the various *EFFECTS* functions to be setup. Select the *SETUP ALL* box that appears (for example when *COLOUR FETTLE* is pressed) and the menu changes to display the appropriate controls for that function.

OVERLAY

Description

Overlay is the expression of any picture as a stencil. Selection of *OVERLAY* will replace any existing stencil with a stencil formed from the luminance values of the picture currently displayed, whatever the source.

PAINTING	overlay	do all	DRAW STEN	USE STENCIL
GRAPHICS	field mode		save picsten	display sten
EFFECTS	colour map		old	new
PASTE UP	3D	mosaic	wipe pic	USE
ANIMATION	colour fettle		restore pic	GRID
LIBRARY				

Application

The *OVERLAY* facility is a powerful tool in Rotoscoping, as the luminance of a picture can be converted into a stencil for over-painting the original picture.

Using *OVERLAY* it is possible to convert a camera input line artwork of a logo PMT into a stencil, and subsequently to apply all the techniques open to the designer that this implies, including half tone values.

Operation

An overlay is created by defining the area of the picture to be processed by pressing the *OVERLAY* box, swiping off then using the box cursor. The contrast of the stencil to be created is determined by the luminance levels of the colours in the paint pots next to the *OVERLAY* box (defaults are black and white).

It is possible to enhance the contrast of a stencil by using the *OVERLAY* stencil with a black (or white) *SOLID RECTANGLE*, re-selecting *OVERLAY* and then repeating. If edge definition becomes degraded, it is possible to use *COLOUR MAP* to refine the image.

HARRIET

The *OVERLAY* range (luminance values only) can be defined by selecting the upper and lower level into the boxes (defining the contrast of the stencil from opaque to transparent) located beside the overlay function. This is particularly useful if using a low contrast picture.

Note that the *OVERLAY* function can be interrupted by pushing the pen.

do all

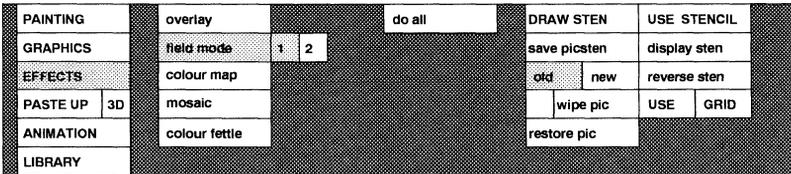
This causes the overlay to be produced over the whole picture.

Note: that any picture held in the picture library can be recalled as an overlay.

FIELD MODE

Description

This function is particularly aimed at treatment of frames "frozen" from a live video input as it allows one field of the frozen picture frame to be repeated if the picture contains inter-field movement artifacts. The function replays the chosen field then interpolates this same field to create the other.



Note that this function reduces the vertical resolution of the picture, so the *FIELD* brush in the *PAINTING* menu should be used if only selected areas need treatment.

Application

The function is particularly useful if graphics items are to be produced from a live video source, to remove unpleasant movement artifacts.

Operation

Select *FIELD MODE*, the number of the field that you wish to repeat then define the area of the picture to be processed by swiping off and using the box cursor.



If the *ALL* box is selected the complete picture will be correlated.

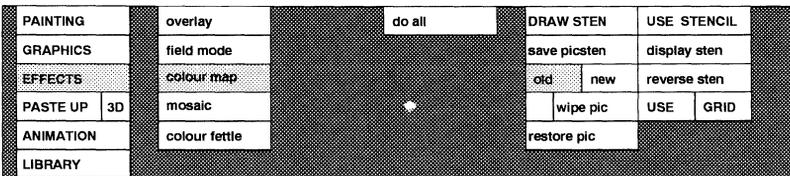
EFFECTS

HARRIET

COLOUR MAP

Description

This facility allows new colours from the palette area to be assigned to areas of a picture, based on the luminance levels within a picture.



Application

This function provides access to a whole range of 'colour laboratory' techniques, such as posterization and solarization. It is also possible to use colour mapping to enhance the contrast of, e.g; a poor black and white image from live video input. This overcomes some of the problems associated with the input of artwork via camera for subsequent use as an overlay or stencil.

Operation

This facility uses the centre line of the palette as the colour map. Dark areas of the picture will be assigned colours displayed on the LEFT hand side of the palette mixing area, and light areas the RIGHT.

For example, if you select *PAINT* and colour the palette black to the left and white to the right, with the boundary between the two colours in the centre, selection of *COLOUR MAP* will cause the picture to be rendered as a black and white line image, much in the manner of a PMT. Movement of the black/white boundary in the palette to the left or right will cause corresponding variations in the contrast of the resulting picture. Softening of the black/white boundary by use of the airbrush will result in a softening of the resulting image.

HARRIET

Note: To save time, store the picture to be worked on in the *SAVE PICSTEN* file prior to colour mapping. This speeds experiment as unsuccessful attempts may be aborted by tapping down with the pen.

The *CREATE PALETTE* function can be used to select a portion of the picture for the Colour Map process and useful palettes can be saved and loaded using the library.

do all

This causes the whole picture to be affected by colour map.

MOSAIC

Description

This function allows the conversion of a picture or selected area into mosaic tiles of uniform size and colour.

PAINTING	overlay	do all	DRAW STEN	USE STENCIL
GRAPHICS	field mode		save picsten	display sten
EFFECTS	colour map		old	new
PASTE UP	3D	mosaic	H60	V80
ANIMATION	colour fettle		wipe pic	USE
LIBRARY			restore pic	GRID

Application

This function has many uses in the modification of graphic items either directly or using a stencil.

Operation

A mosaic is created by defining the area of the picture to be processed by pressing the *MOSAIC* box, swiping off then using the box cursor.

H60 **V80**

The *Hnn* and *Vnn* boxes refer to the size of the mosaic 'tiles' or blocks in terms of horizontal and vertical divisions of the screen. Thus selection of mosaic, using these values, will split the picture (or area selected) into a pattern of square tiles 60 deep x 80 wide.

do all

This causes the whole picture area to be applied with mosaic.

Note: *MOSAIC* can be aborted at any time by pressing down with the pen.

EFFECTS

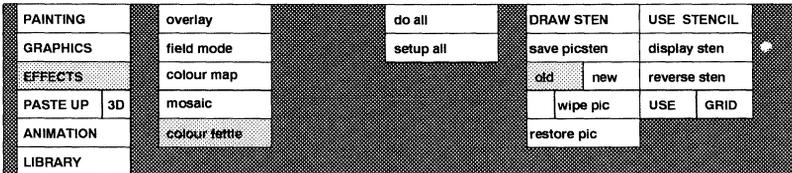
HARRIET

COLOUR FETTLE

COLOUR FETTLE

Description

The *COLOUR FETTLE* menu allows the brightness, contrast and colour of a picture to be manipulated instructively. Also, effects such as posterization can be achieved with more control than within the *COLOUR MAP* function.



Application

This function provides access to a whole range of 'colour laboratory' techniques, to allow the matching of material from different sources

Operation

When the *COLOUR FETTLE* box is selected, the picture can be processed directly using the *DO ALL* function which uses the current colour fettle setup. This setup can be altered by selecting the *SETUP ALL* function. Note that stencil can be used to mask areas of the picture that are to be left unaltered.

COLOUR FETTLE settings can be saved and recalled from the Library in the usual manner by selecting *TYPES* (within the *LIBRARY* menu) followed by the *COL CURVE* box.

To keep the update interactive, the picture is viewed at lower resolution while changing the control values, which are based on luminance and colour difference values.

EFFECTS

HARRIET

PAINING	overlay	invert	orig	aff	lum	BY	RC	DRAW STEN	USE STENCIL			
GRAPHICS	field mode	brightness						save picsten	display sten			
EFFECTS	colour map	contrast						old	new	reverse sten		
PASTE UP	3D	mosaic						cast	sat	wipe pic	USE	GRID
ANIMATION	colour fettle	tryit						doit	restore pic			
LIBRARY												

Note: It is recommended that selecting the controls in the following order; **CONTRAST**, **BRIGHTNESS**, **SAT** and **CAST**) is probably the easiest way of achieving the desired result. These functions are not completely independent of each other and the process of reaching the result is usually iterative.

The currently selected control value can be altered numerically using the number pad or by moving the pen in the picture area.. As soon as the pen is released the picture will be updated to reflect the new values.

invert

This function inverts the currently selected graphs, making the picture into a negative. When **INVERT** has been applied, simply re-select the function, to return the picture to positive.

orig

The **ORIG** function provides a quick resetting for any, or all, of the control boxes to their default values. After selecting **ORIG**, select the required control box **CONTRAST**, **BRIGHTNESS**, etc., or **ALL** to reset all the controls.

brightness

The **BRIGHTNESS** function changes the brightness of the picture. Note that usually it is best to adjust **CONTRAST** and **CENTRE** to increase the brightness, in order to avoid black becoming grey.

100

This numeric box allows the brightness to be entered as a value from 0 to 200 %.

COLOUR FETTLER

contrast

The *CONTRAST* function changes the contrast of the image. When selected, the following controls are available:

centre

The *CENTRE* function changes the range of input of values affected by the contrast. If the image is predominantly dark, a negative *CENTRE* should be selected. It has a similar effect to that of the *BRIGHTNESS* function.

100

This numeric box allows the contrast to be entered as a value from 0 to 200 %.

gamma

This changes the contrast of the mid-range values of the picture; values greater than 1.0 lighten the picture, values less than 1.0 darken it.

cast

This function allows a colour cast to be removed or added to a picture - it has the equivalent effect on colour that brightness has on luminance. Select the desired colour axis and use the pen or numeric keypad to change them.

R/C

Selection of this box gives red cast to the picture with positive values and a cyan cast with negative values.

G/M

The *G/M* function acts in the same way for green and magenta.

B/Y

The *B/Y* function acts in the same way for blue and yellow.

HARRIET

sat

This function allows the colour content to be changed - it has the equivalent effect on colour that contrast has on luminance. On selection of *SATURATION* the menu displays the further functions *RED*, *BLUE*, *CYAN* and *YELLOW*.

red 100

This numeric box allows the red to be entered as a value from 0 to 200 %.

blue 100

This numeric box allows the blue to be entered as a value from 0 to 200 %.

cyan 100

This numeric box allows the cyan to be entered as a value from 0 to 200 %.

yellow 100

This numeric box allows the yellow to be entered as a value from 0 to 200 %.

Select the desired colour or any combination of these and use the pen or numeric keypad to change them. It is not possible to change the colour content of green or magenta independently of the others - green is affected by combining 'CYAN' and 'YELLOW', magenta by 'RED' and 'BLUE'. If necessary, use *STENCIL*, *OLD*, *NEW* and *RESTORE* functions with pictures produced from two separate colour fettle settings.

The large area to the middle-right of the menu shows the 3 graphs relating the input to output values for luminance (*LUM*), blue-yellow (*BY*) colour difference and red-cyan (*RC*) colour difference. These graphs can be used for non-linear colour corrections, where a specific colour band is to be subdued or enhanced (for example a brighter than normal object in a normal background).

COLOUR FETTLE

For linear colour correction purposes the graphs can be safely ignored, using exclusively the control boxes to the right of the graph. Note that subsequent changing of any of the control box values (contrast, brightness, etc) will alter the graphs accordingly.

To produce posterization effects, the graphs can be manipulated using the pen in a 'trial and error' process.

all

This box enables all three graphs at the same time. By placing the pen above/below the appropriate portion of the graph, and pressing, selective shades/colour bands can be enhanced or subdued.

lum

This box enables the luminance graph on its own and disables the others. By placing the pen above/below the appropriate portion of the graph, and pressing, selective shades can be enhanced or subdued.

BY

This box enables the B-Y (blue-yellow) graph on its own and disables the others. Moving the pen in the picture area will increase/decrease the saturation of blue and yellow. By placing the pen above/below the appropriate portion of the graph, and pressing, selective colour bands can be enhanced or subdued.

RC

This box enables the R-C (red-cyan) graph on its own and disables the others. Moving the pen in the picture area will increase/decrease the saturation of red and cyan. By placing the pen above/below the appropriate portion of the graph, and pressing, selective colour bands can be enhanced or subdued.

EFFECTS

HARRIET

try it

When *TRYIT* is selected it allows the adjusted image to be viewed at full resolution. Re-selecting *TRYIT*, or any implicit re-selection by changing any of the control box values or manipulating the graphs, will return the display to the reduced resolution. Note that in most cases it is not necessary to select *TRYIT*, as *DOIT* performs an implicit de-selection of *TRYIT*.

doit

The *DOIT* function overwrites the current picture by its colour corrected equivalent. Note: Exiting from *COLOUR FETTLE* in any other fashion returns to the original picture, but the current settings of the graphs and control box values are retained on re-entry.

CHAPTER 5
PASTEUP MENU

HARRIET

PASTEUP OVERVIEW

PASTEUP OVERVIEW

Description

The pasteup facility of the Paintbox is the means whereby the user can assemble graphic elements and type (text) into finished artwork. When the *PASTEUP* menu box is selected the default main menu appears as illustrated below.

PAINTING	cut	picture	all	DRAW STEN	USE STENCIL
GRAPHICS		stencil		save picsten	display sten
EFFECTS		text		old	new
PASTE UP	3D			wipe pic	USE
ANIMATION				restore pic	CLEAR
LIBRARY					GRID
					GLUE

Application

The cut and paste facilities of the system allow the simple composition of montages using images and graphic elements created within the system or using retouched images from captured live video.

Operation

If either the *3D* or the *CUT* menu box is automatically highlighted, but not required, simply press the relevant box to de-select the function and to display the default *PASTEUP* menu, as above.

The *3D* option box (adjacent to *PASTEUP*) is available within the paste up facilities and is designed as a separate menu box to be selected when required, for applying the system's 3D effects functions. (This is discussed in the "Pasteup 3D" section.)

Within *PASTEUP* any cutout or text may be positioned over a live video input. A style, such as drop shadow, emboss, decorative surrounds, etc., can be quickly selected for use with the cutout. These styles are live processes and do not require the cutout to be stuck for the result to be seen. These features and the various combination of paste up facilities are described within this chapter.

HARRIET

Select the required picture and define the cutout area using the *CUT* menu. Once a 'cutout' is defined, it can be placed over a background picture using the *PASTE* and *3D* menus.



Description

Within the *PASTEUP* menu, selection of the *CUT* menu box provides the display shown below.

PAINTING	cut	picture	all	DRAW STEN	USE STENCIL
GRAPHICS		stencil		save picsten	display sten
EFFECTS		text		old	new
PASTE UP	3D			wipe pic	USE
ANIMATION				restore pic	CLEAR
LIBRARY					GLUE

The *PASTEUP* menu uses the same logic as cutting and pasting more conventional materials. When the *CUT* box is illuminated the column (*PICTURE*, *STENCIL*, *TEXT*) then offers a choice of functions for cutting.

cut

cut

If an item has been cutout in a previous session, or multiple cutouts have been generated, then selecting the *CUT* box twice will return to the *PASTEUP* menu.

Cut Picture

Select *CUT* and *PICTURE*. Tap down on the picture and the cursor will change to a yellow box with one corner fixed at the point. Pull out this box with the stylus to surround the area required, tap down again and the system will cut this rectangular area out of the picture.

all

This instructs the system to cut out the entire picture. This is constrained by *PICTURE*, *STENCIL*, or *PICTURE/STENCIL*, as appropriate.

HARRIET

Cut Stencil

Exactly as above, except that any stencil present will control the cutting procedure and the pictorial content will be replaced by the colour on the brush. In other words, cutting with stencil alone produces a cutout shape defined by the stencil and that shape can then be assigned any colour by brush selection in the palette.

picture

stencil

Illuminate both boxes and one can then cut out pictorial elements defined by the stencil. The second tap of the stylus will cut out any part of the picture within the yellow rectangle that is not masked by the stencil.

all

This instructs the system to cut out the entire picture. This is constrained by *PICTURE*, *STENCIL*, or *PICTURE/STENCIL*, as appropriate.

Cut Text

From the *CUT* menu select the *TEXT* box and the text menu facilities are displayed as illustrated below.

PAINTING	cut	picture	ITC Avant Garde Gtho Med II													end
GRAPHICS		stencil	line	char	A	B	C	D	E	F	G	H	I	J	upper	
EFFECTS		style	text	size	232	K	L	M	N	O	P	Q	R	S	^	lower
PASTE UP	3D	stick	x - 062.0	kern	0.0	T	U	V	W	X	Y	Z	'	"	other	
ANIMATION			y 136.0	y inc	0.0	↓	↑	space	rubout	,	.			clear		
LIBRARY			L	C	R	space	0							return		

A SELECTING A TYPEFACE

Quantel has licensed an extensive library of typefaces (also referred to as text 'fonts') from prime sources around the world and these are loaded on the Magneto Optical disk for distribution with the system. Consequently, any style of typeface is easily made available to you (enabled via passwords) by Quantel. A booklet showing the full range of typefaces/fonts "off the shelf" (approximately 180) is available.

One benefit of the arrangement that Quantel has made with type-founders and designers is that typefaces are properly licensed for unlimited use by the end user and, of course, they are not copies or approximations of typefaces, but are the real thing.

The 6 fonts supplied on the system as standard are provided at 3 generic sizes 35, 85 and 160 which relate to specific numbers of lines on screen depending on the selected typeface. Size 85 is loaded on the system as standard. When another size of font is required, it can simply be loaded from the Magneto Optical disk by selecting the appropriate font (see the 'Library' chapter).

The different generic font sizes have been provided so that the type displayed on the screen will always be sharp. The font size selected should be optimized for the particular application.

B TEXT COMPOSITION

Having selected the required typeface, the type cursor (a horizontal yellow bar) will appear at the top left of the screen. The type cursor bar indicates that the next letter will be entered to the left of the cursor. The cursor can be moved by tapping a letter with the pen. It will then align itself under the letter (or space), allowing letters to be inserted at any point in the line.

In the menu, the blue central panel indicates the typeface currently in use. The left hand column displays control for typesetting.

PASTEUP

HARRIET

Text entry is available via the on-screen keypad or via the keyboard. The keypad defaults to the ABCD format, but the QWERTY format can be selected if desired. This is controlled by the full page *ARTIST* menu.

The keyboard has left and right arrow keys which can be used to move the text cursor. The down arrow key cycles through the loaded fonts.

As an additional function of the main keyboard, pressing the <CNTRL> and <DELETE> keys together deletes the line only, retaining the set-up positions.

It is possible to select a combination of more than one typeface (using the *UP* or *DOWN* arrow boxes) although no more than three typefaces may be used at one time.

ITC Avant Garde Gthc Med Itl											end	
line	char	A	B	C	D	E	F	G	H	I	J	upper
size	232	K	L	M	N	O	P	Q	R	S	^	lower
kern	0.0		T	U	V	W	X	Y	Z	'	”	other
y inc	0.0	↓	↑	space			rubout			,	.	clear
space	0											return

end

Is the execution command that cuts out a line of text.

upper

Selects Upper case characters.

lower

Selects Lower case characters.

other

Selects Numeric and pi characters.

space

Selects a single letter space.

rubout

The *RUBOUT* box (or the <DELETE> key on the keyboard) removes the character above the cursor. Continued pressure rubs out characters progressively from right to left.

clear

When this box is pressed once the entire screen of text is cleared. If *CLEAR* is pressed a second time all parameters such as size, kern Y inc and space are set to their default values.

return

When the end of a text line is reached (or the right edge of the screen) select the *RETURN* box to designate a new line. The cursor moves down to the start point of the line below for typing. Existing text lines can be divided by placing the cursor at the required position and selecting *RETURN*. The text line will split at the cursor position and the designated character and following characters will move to a new line below. Note: If using the hard keyboard for typing, the <RETURN> key provides the same function.

C TEXT LINES

The entire screen may be utilized for text entry if necessary, thereby enabling multi-characters to be formed across the width of the screen, and multi-lines of text from the top to the bottom of the screen. When the end of a text line is reached the *RETURN* box is used to designate a new line, and moves the cursor down to the start point for typing on the next line. The maximum number of text lines is dependent upon the size (or style) of text applied. Individual lines may be selected and stylized so that each line from a multi-line block of text may have a different style, size, kern, font, etc.

PASTEUP

HARRIET

D SELECTING TEXT

Applying pen control for selecting specific areas of text enables the typed blocks of text, lines or words, to be quickly rearranged on the screen. Position the pen in close proximity to the tablet so that the yellow on-screen cursor is displayed. Within *TEXT* mode the proximity of the pen over the text also provides the type cursor (the horizontal yellow bar) below the designated character.

To select and move a line of text using the pen, position the on-screen cursor on the required text line (the type cursor may be on any character). Co-ordinate the pen in order to move the selected text line only around the screen.

To select and move all the text at one time, place the on-screen cursor in a clear area of the screen away from the text lines and co-ordinate the pen to move the entire text block around the screen.

E ALIGNING TEXT LINES

Below the *TEXT* menu box (as illustrated) the *L*, *C* and *R* functions are displayed across the bottom line of the menu for aligning text lines, Left, Centre and Right.

L

When the *L* function is selected the text lines will align from the *LEFT* end (margin) of each line.

C

The *C* function *CENTRES* the text lines around the centre point of each line.

R

The *R* function aligns the text lines from the *RIGHT* hand end of each line (known as 'right justified').

Size

Select the *SIZE* function and the menu re-displays to provide the numeric pad on the right side of the screen. The designated character or line size may now be changed, using *INC* or *DEC* or selecting numbers from the numeric pad, etc. Note that first selecting *LINE* then *SIZE* applies the required size to the designated line only, or by selecting *CHAR* then *SIZE* applies the size to the designated character only.

kern

The *KERN* function adds or subtracts space between characters or between lines of text. This selection displays the numeric keypad, replacing the menu keypad.

yinc

This function is used to increment the text line on the vertical axis. Using the pen to place the cursor on the required text, drag the pen up or down to move the lines up or down the screen, as the *YINC* box displays the corresponding numerics. Also, with the numeric pad displayed, the *INC* or *DEC* functions may be used to increment the text line downward (*INC*) or upward (*DEC*).

space

This adds or subtracts space between words. This selection displays the numeric keypad, replacing the menu keypad.

Note: To re-display the menu keypad, simply de-select the function that is currently highlighted (size, kern, space, etc.).

line

Selecting *LINE* permits menu functions (such as *SIZE*, *KERN*, *YINC* and *SPACE* described above) to be performed on the text line currently designated by the cursor. Individual lines may be selected and stylized so that each line from a multi-line block of text may have a different style, size, kern, font, etc.

char

CHAR permits menu functions (such as *SIZE*, *KERN* and *SPACE* described above) to be performed on individual characters or spaces designated by the cursor. When *CHAR* is selected the menu changes to display the following functions:

The *SIZE* and *KERN* controls operate as before but now relate only to the character above the cursor, or the space to the left of the cursor.

HARRIET

jump

The *JUMP* function shifts the character up and down the baseline.

flip

The *FLIP* function inverts the character left to right.

tumble

The *TUMBLE* function inverts the character up and down.

De-selection of the *CHAR* function removes the *JUMP*, *FLIP* and *TUMBLE* functions.

European Characters and Accents

Use of the keyboard unit allows access to some of the less often used characters within a text font. The characters can be selected by use of the keys in conjunction with the <SHIFT> and <CNTRL> functions on the keyboard. This permits access to character and accents as shown in the following diagram:

Control

ESC	#	"	<<	<	>	>>	'	hy	em	en	~	Ø	ø	DEL LINE	
											~	A			
CAPS LOCK												Æ	Œ	á	
CTRL SHIFT											æ	œ	SHIFT		

Shift

ESC	!	"	£	\$	%	&	'	()	-	=	"	^	
	Q	W	E	R	T	Y	U	I	O	P	'			
CAPS LOCK		A	S	D	F	G	H	J	K	L	+	*	,	
CTRL SHIFT		Z	X	C	V	B	N	M	;	:	?	SHIFT		

Unshift

ESC	1	2	3	4	5	6	7	8	9	0	␣	"	^	DEL
	q	w	e	r	t	y	u	i	o	p	'			
CAPS LOCK		a	s	d	f	g	h	j	k	l	;	'	B	
CTRL SHIFT		z	x	c	v	b	n	m	,	.	/	SHIFT		

Accented Characters composed on the System

Ä	Å	Á	À	Â	Ã	Ä	Æ	Ö	Ø	Ó	Ô	Õ	Ö	Œ
ä	å	á	à	â	ã	ä	æ	ö	ø	ó	ô	õ	ö	œ
É	Ê	Ë	È	Í	Î	Ï		Ú	Û	Ü	Ý	ÿ		
é	ê	ë	è	í	î	ï		ú	û	ü	ý	ÿ		
Ç	Ç	Ł	Ń	Ñ	Ŕ	Ŗ		Š	Ť	Ŧ	Ű	Ž		
ç	ç	ł	ń	ñ	ŕ	ŗ		š	ť	ŧ	ű	ž		

PASTEUP

HARRIET

PASTEUP FUNCTIONS

PASTEUP FUNCTIONS

Description

Once a cutout has been created as previously detailed or fetched from the Library it can be sized and positioned before being added to the currently displayed image using the various menu functions described in this section. The main default *PASTEUP* menu appears as below:

PAINTING	cut	stencil	outline	xpos	0	DRAW STEN	USE STENCIL
GRAPHICS	smear	live video	surround	ypos	0	save picsten	display sten
EFFECTS	100%	flip tumble	solid	angle	0.0	old	new
PASTE UP	3D	stick	rotate	shadow	magn	100.0	wipe pic
ANIMATION		original	emboss	x	100	y	100
LIBRARY						restore pic	CLEAR
							GRID
							GLUE

Operation

The cutout defined by the actions previously described will appear in the image area. Its position is defined by the pen. Tap down to pick up the cutout and position as required. Tap down again and the cutout will be temporarily spotted down. By pressing down the pen, the cutout becomes semi-transparent and can be positioned accurately over the image using the pen.

The size and angle of a cutout can be changed prior to assembly into the image using the following:

Select the appropriate green boxes, then move the pen left/right or up/down to change the value. The pen pressure controls the range of the selected parameter; light pressure gives a small movement and a heavy pressure gives a large movement.

Pull down on the Hand Unit thumb switch and the cutout will shrink. Pull right and the cutout will rotate clockwise. Pull left and the cutout will rotate anti-clockwise. Having spotted down a cutout, swiping off will reveal new functions in the menu.

PASTEUP

HARRIET

stick

The action of *STICK* is to fix permanently any cutout in the position and attitude assigned, and subject to the paste functions selected, as below.

xpos

If this box is selected, moving the pen in the image area with the menu on will cause cutout movement in the x (horizontal) axis only.

ypos

If this box is selected, moving the pen in the image area with the menu on will cause cutout movement in the y (vertical) axis only.

angle

If this box is selected, moving the pen in the image area with the menu on will cause the cutout to rotate.

magn

If this box is selected, moving the pen in the image area with the menu on will re-size the cutout.

x 100

If this box is selected, moving the pen in the image area with the menu on will re-size the cutout in its horizontal aspect.

y 100

If this box is selected, moving the pen in the image area with the menu on will re-size the cutout in its vertical aspect.

live video

With *PASTEUP* selected and a cutout on the end of the pen, simple effects can be created by using the *LIVE VIDEO* box. Any cutout or type may be positioned over a live video input. Select *LIVE VIDEO* menu box and swipe off to initiate. Either RGB and Digital inputs may be selected.

PASTEUP FUNCTIONS

flip

When selected, a cutout is 'flipped' (mirror image left-right).

tumble

When selected, a cutout is 'tumbled' (mirror image top-bottom).

rotate 90

Selection of this function will rotate the cutout through 90 degrees clockwise. Thus, for example, three taps in the *ROTATE 90* panel will rotate the cutout through 270 degrees etc.

original

Selection of *ORIGINAL* resets size, angle flip, tumble and returns the cutout to its 'original' position.

outline

The cutout is pasted down in outline form, adopting the brush colour. Note that the centre is 'transparent'.

surround

This allows any cutout type to have a surrounding border, determined by the colour loaded into the colour pot to the right of the *SURROUND* box.

PASTEUP

HARRIET

solid

This allows any cutout to be given a solid drop shadow. When this function is selected the menu changes to display the *PIC* box, and below this are the green *arrow* and *number* boxes.

pic

When *PIC* is selected, pressing *STICK* initiates a series of multiple pastes that build up a solid shadow consisting of the picture cutout itself and creating an extruded solid look. The effect can be used with text that has been cut out from a picture using a stencil matching the text, or with text cut from a stencil that has subsequently been used to apply colour to the text. This permits graduated shading of the solid extrusion.

The paint pot (the coloured box below the *PIC* box) determines the colour of the extrusion.

The green arrow box determines the direction in which the extrusion will lie. Press the box and it will illuminate pink. A selection of arrows appears to the far right of the menu. Rotary movement of the Hand Unit thumb switch or pen will move the arrow to one of eight different directions. Once the desired angle is displayed, keep your finger on the Hand Unit thumb switch, and press down in the box again so that it reverts to green. The keyboard up and down arrow keys may also be used to move the boxed arrow around.

A green number box controls the depth of displacement of the shadow. Press to illuminate pink and use the Hand Unit thumb switch or pen to adjust the number of units as desired.

Once all the relevant factors have been selected - colour, direction, depth, letter colour and position - press *STICK* to achieve the desired effect.

PASTEUP FUNCTIONS

shadow

This allows any cutout to be given a solid to transparent drop shadow. When this function is selected the menu changes to display three green boxes; %, *arrow* and *number* boxes:

%

The % box determines the transparency of the shadow. A value of 100% produces a totally solid drop shadow, whilst a value of 0% will produce a totally transparent result.

The paint pot determines the colour of the shadow.

The green arrow box determines the direction in which the shadow will lie. Press the box and it will illuminate pink.

The green *arrow* and *number* boxes can be applied as described in *SOLID*.

emboss

This allows a cutout or typeface to be embossed into the image. On selection, note the appearance of the green arrow box. This allows one to determine the angle from which the 'light' falls on the "embossed" lettering, e.g; Arrow to the south-east sector - lettering appears to be embossed in bas-relief. Arrow to north-west sector - lettering is impressed into the image!

live video

With *PASTEUP* selected and a cutout on the end of the pen, simple effects can be created by using the *LIVE VIDEO* box. Any cutout or type may be positioned over a live video input. Select *LIVE VIDEO* menu box and swipe off to initiate. Either RGB and Digital inputs may be selected.

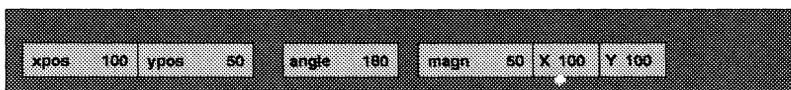
HARRIET

Statistics Functions

The Statistics bar allows cutouts to be controlled in size, angle and position. This can permit accurate movements, zooms, etc., when preparing a series of frames for animation. It also permits extreme accuracy in positioning and sizing of graphic elements.

To select the statistics bar enter the Full Page Set-up menu and select *ARTIST* followed by *STATISTICS* (which when selected will highlight pink). Return to the main menu, i.e; press the *PASTEUP* box and then swipe off to remove the menu.

The green data statistics bar is displayed at the bottom of the screen.



Movement of the cutout, as previously described, will cause the values in this bar to change. On the keyboard the <TAB> key can be used to select each of the positional menu boxes and the <RETURN> key used to de-select.

xpos

This shows the horizontal position of the cutout.

ypos

This shows the vertical position of the cutout.

angle

This shows the cutout rotation in degrees from its normal position.

magn

This shows the magnification of the cutout.

x100

This shows the width of the cutout.

y100

This shows the height of the cutout.

PASTEUP FUNCTIONS

The Smear Menu

PAINTING	cut	stencil	stamp	xpos	0	DRAW STEN	USE STENCIL				
GRAPHICS	smear		smudge	ypos	0	save picsten	display sten				
EFFECTS	100%	flip	tumble	spacing	angle	0.0	old	new	reverse sten		
PASTE UP	3D	stick	rotate		magn	100.0	wipe pic	USE	GRID		
ANIMATION		original			x	100	y	100	restore pic	CLEAR	GLUE
LIBRARY											

SMEAR produces the effect of airbrush-like painting with a cutout as a brush, so 'smearing' its contents onto the image as the pen is moved. It can be used as a calligraphic or custom brush, the brush being defined by the cutout. As well as working with picture cutouts, it also operates in *DRAW STEN* modes. **SMEAR** is affected by percentage flow.

100%

The percentage box can be used to set the density of the smear, by applying the cutout to the image as if through an appropriate percentage stencil.

stamp

STAMP cutout allows the cutout to be quickly stuck and repeated on the image each time the pen is pressed. Percentage sets the ratio of cutout to background image.

smudge

SMUDGE cutout uses the cutout shape to 'smudge' the image. Percentage flow rate controls the rate - in practice, values over 80% usually give the best results.

Note: **SMUDGE** may produce odd results if the cutout is moved into the image area from outside its boundaries. This is inherent in the way **SMUDGE** works. Smudging outwards rather than inwards may be more effective in this case.

spacing

Sets the inter-stamp 'spacing' as a percentage of the original cut box and can be used to give a 'string of pearls' effect. Non square cutouts are spaced on the basis of touching ellipses.

PASTEUP

HARRIET

flip

When selected, a cutout is 'flipped' (mirror image left-right).

tumble

When selected, a cutout is 'tumbled' (mirror image top-bottom).

rotate 90

Selection of this function will rotate the cutout through 90 degrees clockwise. Thus, for example, three taps in the *ROTATE 90* panel will rotate the cutout through 270 degrees etc.

original

Selection of *ORIGINAL* resets size, angle, flip, tumble and recalls its original position.

PASTEUP 3D

PASTEUP 3D

Description

The *3D* menu allows cutouts (picture, stencil and text) to be positioned anywhere within the imaginary three dimensional space of the television screen over a moving 'background clip'. To do this each Item is given three positional coordinates X (horizontal), Y (vertical) and Z (perspective or depth).

Any cutout is held as a flat 2D tile then manipulated in 3D space before being projected back on to the 2D Television screen. The Items are manipulated using 3D modelling equations (processed by the system computer) controlled by the user determined values for x, y and z.

Application

'Keyframe effects' can be created to manipulate multiple cutouts in 3D space over a moving 'background clip' (ie the 'Background clip' in Ramcorder).

Operation

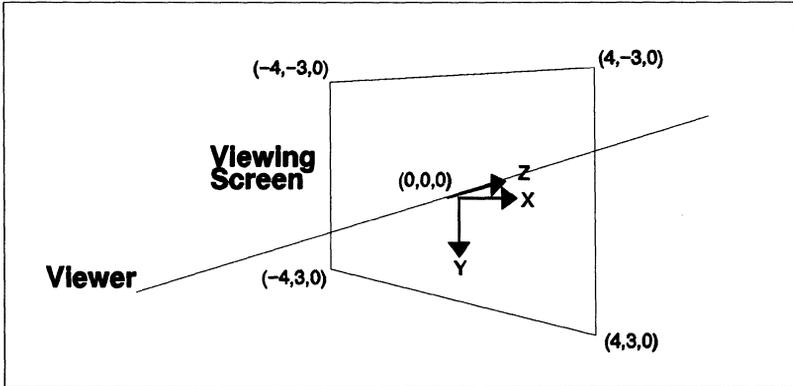
From the *PASTEUP* main menu select the *3D* box and the menu displays as illustrated below.

PAINTING	cut	pos xyz	0.000	0.000	0.000	DRAW STEN	USE STENCIL		
GRAPHICS		spin xyz	& spin			save picsten	display sten		
EFFECTS	style	size xy				old	new	reverse sten	
PASTE UP	3D	stick	pin	axis	screen	noback	wipe pic	USE	GRID
ANIMATION		orig	all				restore pic	CLEAR	GLUE
LIBRARY	keyfrms								

Note: The cutout is course filtered and semi-transparent during positioning and sizing to ease operation.

HARRIET

Pen control of the on-screen cursor (known as 'space tracks') is by simply positioning the pen above the tablet and the X, Y and Z axis lines called 'space tracks' are displayed. The position of the cutout can be changed in the X, Y and Z axis by selecting the appropriate 'space track' letters. Pressing the pen with the cursor over a 'space track' letter (the selected letter appears pink) allows the manipulation of that particular axis. For example, selecting the Y letter of the cursor enables positioning in the vertical axis. If no letter is selected, both X and Y movement is possible.



style

This function allows the selection of the various decorative functions such as; outline, surround, drop shadows, embossed %, etc, to be quickly selected for use with the cutout.

The capabilities of drop shadow, solid drop, embossed, etc., are live processes and do not require the cutout to be stuck for the result to be seen. This means a drop shadowed or embossed cutout can be flown around the screen in real-time.

100.0%

The percentage box appears when the *STYLE* box is selected and this enables the transparency of the cutout to be altered to any value between 0% and 100%. This is particularly useful with keyframes, as cutouts can be made to fade up and down within an effect.

PASTEUP 3D

stick

This permanently fixes a copy of the cutout on to the picture, but still retains the cutout in its manipulated form for further use.

orig

The *ORIG* box will restore to its default value the selected parameter (i.e; *ORIG SPIN* will restore the cutout to its original spin position).

all

The *ALL* box restores all the parameters at once.

axis

The *AXIS* box allows the on-screen cursor to be re-positioned relative to the cutout, to enable off-centre spins etc.

screen

This uses the screen centre as the reference point for spins and positions etc., rather than the on-screen cursors.

noback

As this box suggests, it turns off the rear of the cutout so that when it is spun by more than 1/4 turn x or y, the cutout will disappear.

keyfrms

The *KEYFRMS* box activates the keyframes effects function, and this is described later in this section.

PASTEUP

HARRIET

Position xyz Menu

When the *POS XYZ* box is selected, its 3 associated numeric boxes are displayed to the right. This enables the cutout to be positioned in any of the 3 axes. The numeric boxes can be used to enter numeric values or lock control in to one axis only, or the pen can be used to select the required axis from the on-screen cursor, 'space tracks'.

PAINTING	cut	pos xyz	0.000	0.000	0.000	DRAW STEN	USE STENCIL	
GRAPHICS		spin xyz	& spin			save picsten	display sten	
EFFECTS	style	size xy				old	new	reverse sten
PASTE UP 3D	stick	pin	axis	screen	noback	wipe pic	USE GRID	
ANIMATION		orig	all				restore pic	CLEAR GLUE
LIBRARY	keyfrms							

In addition to positioning a cutout with the *POS XYZ* function, it is also possible to apply 'spin' to the cutout in the same operation. To do this the *& SPIN* feature is used.

& spin

The *& SPIN* box, below the numeric boxes, enables spin set-up to be active at the same time as positioning. Upon selection of *& SPIN* the menu activates both the *POS XYZ* and *SPIN XYZ* boxes and both functions provide 3 adjacent numeric boxes, as illustrated below, enabling use of position xyz and spin xyz together.

PAINTING	cut	pos xyz	0.000	0.000	0.000	DRAW STEN	inc	dec					
GRAPHICS		spin xyz	0.000	0.000	0.000	save picsten							
EFFECTS	style	size xy	inc	dec	qtr	half	whole	old	new	7	8	9	←
PASTE UP 3D	stick	pin	axis	screen	noback	wipe pic	4	5	6	→			
ANIMATION		orig	all				restore pic	1	2	3	-		
LIBRARY	keyfrms							:	0	.	C		

The numeric boxes can be used to enter numeric values, or the pen can be used to select the required axis from the on-screen cursor, 'Space Tracks'.

PASTEUP 3D

Apply pen control for the on-screen Space Tracks as previously described. However, because both 'position' and 'spin' are active it is necessary to differentiate between a 'position' move and a 'spin' move. This is quickly and simply achieved by placing the on-screen cursor over specific areas of the Space Tracks, as follows:

For a 'position' move, ensure that the cursor is placed directly on the LETTER of the Space Track to select **only** the letter. The X, Y or Z character will highlight pink when selected, and moving the pen will change the cutout position.

To apply a 'spin' move, place the cursor on the ARM of the Space Track and not on the letter. When selected, only the arm (and not the letter) will highlight pink. Move the pen appropriately to affect a spin around the X or Y axis.

Note: To cancel the '& spin' feature, simply press *SPIN XYZ* to de-select the highlighted box, and the selection is removed.

HARRIET

Spin xyz Menu

When *SPIN XYZ* is selected, its associated numeric boxes are displayed, enabling the cutout to be spun around the x, y or z axes in an identical way to positioning, by use of the numeric boxes or from pen control. The **& POS** box, above the numeric boxes, enables positioning to be selected with spin. Selecting one of the numeric boxes as well as locking the axis to be used, also enables a row of further function boxes.

PAINTING	cut	pos xyz	& pos			DRAW STEN		inc	dec	
GRAPHICS		spin xyz	0.000	0.000	0.000	save picsten				
EFFECTS	3D	size xy	inc	dec	qtr	half	whole	old	new	7 8 9 ←
PASTE UP	3D	stick	pin	axis	screen	noback	wipe pic		4 5 6 →	
ANIMATION		orig	all					restore pic		1 2 3 -
LIBRARY		keyfrms							: 0 . C	

inc

This makes the *QTR*, *HALF* and *WHOLE* boxes act in a positive direction.

dec

This makes the *QTR*, *HALF* and *WHOLE* boxes act in a negative direction.

qtr

This box rotates the cutout by a quarter around the selected axis with each press.

half

This causes a half turn around the selected axis each time it is pressed.

whole

This causes a whole turn around the selected axis each time it is pressed.

& pos

The **& POS** box, above the numeric boxes, enables a 'position' move to be active at the same time as 'spinning' a cutout. Upon selection of **& POS** the menu activates both the *POS XYZ* and *SPIN XYZ* boxes and both functions provide 3 adjacent numeric boxes, enabling use of spin xyz and position xyz together.

PASTEUP 3D

The numeric boxes can be used to enter numeric values, or the pen can be used to select the required axis from the on-screen Space Tracks.

Remember (as previously described for & *SPIN*) that because both 'spin' and 'position' are active at the same time, the on-screen cursor should be placed over specific areas of the Space Tracks: To select a 'spin', place the cursor on the ARM of the Space Track. To select 'position', ensure that the cursor is placed directly on the **LETTER only** of the 'space track'.

Note: To cancel the '& position' feature, simply press *POS XYZ* to de-select the highlighted box, and the selection is removed.

HARRIET

Size xy Menu

When this box is selected the associated numeric boxes are displayed. This enables the cutout to be sized in the x or y axes, in an identical way to positioning or spin, by use of the numeric boxes or from pen control.

PAINTING	cut	pos xyz	& pos				DRAW STEN	inc	dec		
GRAPHICS		spin xyz	& spin				save picsten				
EFFECTS	stype	size xy	0.000	0.000	0.000	old	new	7	8	9 ←	
PASTE UP 3D	stick	pin	axis	screen	noback		wipe pic	4	5	6 →	
ANIMATION		orig	all				restore pic	1	2	3 -	
LIBRARY	keyfrms							:	0	.	C

Pin Menu

When selected the *PIN* box enables corner pinning of the cutout and activates additional boxes.

PAINTING	cut	pos xyz	& pos			DRAW STEN	USE STENCIL
GRAPHICS		spin xyz	& spin			save picsten	display sten
EFFECTS	style	size xy	& size			old	new
PASTE UP	3D	stick	pin	↖ ↗	pins	edges	wipe pic
ANIMATION		orig	all	↖ ↗			restore pic
LIBRARY	keyfrms						CLEAR
							GLUE

Using the pen to select the corner of the cutout it can be 'drawn' around the screen to the required position. Repeating this process on each corner enables the cutout to be positioned anywhere in 3D space. This is especially useful for tracking objects on the background clip. With only the *PIN* box active it is possible to additionally select position, spin and size using the *& POS*, *& SPIN*, & *SIZE* boxes.

pin

pos x y z

With this combination selected, 'corner pinning' operates as described previously and the x y z Space Tracks can be used to position the cutout and its 'pins'.

pin

spin x y z

With this combination selected, 'corner pinning' operates as described previously and the x y z 'space tracks' can be used to spin the cutout and its 'pins'.

pin

size x y

With this combination selected, 'corner pinning' operates as described previously and the x y z 'space tracks' can be used to size the cutout and its 'pins'.

pin

pins

This enables the corner pins to be moved closer or further away from the cutout, to help with accurate positioning of the cutout corner.

Note that the 'pins' can be set back to their default positions using the *ORIG*, *PINS*.

HARRIET

pin

edges

The *EDGES* box enables the edge of the cutout to be moved rather than the corner. If both *PINS* and *EDGES* boxes are selected, re-positioning of the edge is possible (similar to pins). The four arrow keys allow each corner to be selected including times when the pin marker is not within the screen area.

Keyframes

A INTRODUCTION

A 'Keyframe Effect' is where a cutout (or multiple cutouts) are positioned, sized and spun over the number of frames of video in the 'Background clip' using the *PASTE UP 3D* menu. The 'Effect' is produced by creating 'Keyframes' with position, size and spin setups that coincide with events in the 'Background clip'.

Keyframes with specific effects settings for specific video frames in the 'Background clip' can be used to track a moving cutout with the video. For example:

Frame 1 in the 'Background clip' could be the start position for the effect with the cutout size, position and spin setup to correspond with a picture on a wall.

Frame 60 in the 'Background clip' could be the mid position for the effect with the cutout size, position and spin setup to correspond with a closed door.

Frame 161 in the 'Background clip' could be the end position for the effect with the cutout size, position and spin setup to correspond with an open door.

With three keyframes setup as described above, the picture could be 'flown' from the wall to the closed door then 'open' as the door opens.

There can be any number of keyframes used to setup an 'Effect' and these can be modified and saved for future use.

If the 'Stripey String' function has been enabled, a dashed orange line will be shown intersecting the 'Keyframe Markers' (yellow circles on screen showing the centre position of the cutout) and representing the path that the cutout will take as it moves through the effect. This path can be modified by adding/deleting keyframes.

If the Dynamic Collage option is fitted, multiple cutouts can be flown simultaneously within one keyframe effect, without the need to do multiple passes and allowing the interaction of the various cutouts to be dynamically altered.

HARRIET

B OPERATION

Selection of the *KEYFRM* box provides a shuttle bar at the bottom of the menu along with a number of additional boxes required for keyframe editing. The orange shuttle bar at the bottom of the menu along with a number of associated boxes are used for 'keyframe effects' creation and editing to shuttle the cutouts over the background. If the *BGND CLIP* box is also selected, the selected 'background clip' will shuttle in sequence with the effect shuttle bar to enable frame accurate match-up of the effect and background clip.

PAINTING	cut		pos xyz	0.000	0.000	0.000	DRAW STEN	USE STENCIL		
GRAPHICS	only	↑	spin xyz	& spin			save picsten	display sten		
EFFECTS	style	fgd	size xy				old	new		
PASTE UP	3D	stick	copy	pin	axis	screen	noback	wipe pic	bgnd clip	
ANIMATION			orig	all	stoppet			restore pic	fields	do it
LIBRARY	del auto						1	of 141	← →	try it

When the *KEYFRM* box is selected it is replaced with the two boxes *DEL* and *AUTO*.

If automatic edit of keyframes is not required (i.e; the *AUTO* box is not selected) an *EDIT* prompt will appear in this box after a parameter has been altered.

The creation of 'keyframes' is controlled by the *DEL* and *AUTO* boxes. If automatic edit of keyframes is not required (i.e; the *AUTO* box is not selected) an *EDIT* prompt will appear in this box after a parameter has been altered.

If, within the Full Page *ARTIST* menu, the *STRIPEY STRING* function is enabled a 'track' of the keyframe move will be displayed. Each segment is one frames duration and its length reflects the cutouts speed. Selecting a point on the string with the pen has the same effect as moving the shuttle bar.

del

Selecting the *DEL* box changes the adjacent *AUTO* box to *CLEAR*, to enable existing effects to be cleared ready for a new effect. If *DEL* is selected followed by a keyframe it will delete the selected keyframe from the effect.

PASTEUP 3D

auto

When selected this function automatically inserts changes to a cutout's position, spin, etc., into the present keyframe of an effect. A new point in the effect to be edited (i.e; not yet a keyframe) is selected by drawing the shuttle bar along to the desired point or by numeric entry into the numeric box.

1

of 161

This shows the position of the selected point in the effect. (The total length of the effect is dictated by the length of the background clip, although this number can be altered if desired.) It can also be used to set the 'keyframe effect' to the desired frame, by inserting the frame number in the first box.

bgnd clip

When a background clip has been selected in the *CUT* menu, this box appears and allows the background frame to be updated in conjunction with the foreground when using the *TRY IT* function.

|←

This jumps to the start of the effect.

→

This steps forward one keyframe in the effect.

try it

This will run the programmed effect (and background clip if *KEYFRMS* in the *ANIMATION* menu is selected) in a preview mode, at around 1/3 Real-time and reduced resolution, to enable the moves to be checked.

PASTEUP

HARRIET

do it

This processes the effect in non-realtime from the present position within the keyframe effect, using the background clip to key the effect over and then saves it as a 'new' clip. Note that the processing will start from the 'current frame' in the 'background clip'.

USE STENCIL

When the *USE STENCIL* function is enabled, the 'stencil clip' associated with the 'background clip' can be used to mask areas of the background to prevent the cutouts from modifying it. If no 'stencil clip' is available, a static stencil can be loaded and used.

After each keyframe has been entered, *LIN INTO*, *STOPPED* and *LIN FROM* boxes appear in the menu. Only the *POS* and *SPIN* functions call-up these boxes and only if a change of the selected type is active on the selected keyframe. This means that if *SPIN* is selected and there is no spin active on the selected keyframe, these boxes will not appear.

This also means that pos and spin changes can be affected independently at a keyframe by these boxes. The first keyframe in an effect will initially have stopped active, as it is the only keyframe. With 2 keyframes the first can also have *LIN FROM* and the second *LIN INTO*.

If a third or further keyframes are added the middle keyframes can have all three boxes active. If one of the '&' boxes is also selected these boxes cannot appear, as they would have to show the function of both parameters.

lin into

This will make the selected parameter linear going into the selected keyframe.

stopped

This will 'flare' the motion of the selected parameter into and out of the selected keyframe, with a pause at the keyframe. Effectively it slows the motion into a keyframe and accelerates away from it.

lin from

This will make the selected parameter linear going away from the selected keyframe.

DYNAMIC COLLAGE

DYNAMIC COLLAGE

Description

The Dynamic Collage option allows multiple cutouts, each with their own associated keyframe move, to be processed simultaneously enabling the creation of interactive graphic sequences. Within normal paste-up and 3D work Dynamic Collage functions as a multi-layered cut and paste facility enabling cutouts to be resized, re-positioned, etc., before being finally committed to the picture. Within keyframes each cutout has its own keyframe move contributing to the overall keyframe effect.

The ability to view the positions and moves of all the cutouts together at any point during the keyframe move, allows the cutout relationships with each other and the background to be set and modified, so creating an interactive effect.

When the Dynamic Collage option is enabled, new boxes appear in the *PASTEUP* and *3D* menus, providing *CUT*, the *ONLY* and the green numeric box for multiple cutouts, as follows.

PAINTING	cut	pos xyz	0.000	0.000	0.000	DRAW STEN	USE STENCIL
GRAPHICS	only	2	spin xyz	& spin		save picsten	display sten
EFFECTS	style	100	size xy			old	new
PASTE UP	3D	stick	copy	pin	axis	screen	noback
							wipe pic
ANIMATION			orig	all			restore pic
LIBRARY	del	keyfrm					

Application

Cutouts are created by using *CUT* or by retrieving from the *LIBRARY* in the normal way. Each different cutout must either be created separately or loaded from the Library by selecting one after another using *FETCH* or the pen (tick).

PASTEUP

HARRIET

The cutouts are stacked in layers when loaded; the first one is given layer 1; the second is given layer 2 and so on. The layer number represents the cutout's layer position with respect to the other cutouts. Layer 1 can pass in front of 2, 3, 4 etc., layer 2 can pass in front of 3, 4, 5 etc. A cutout may change its layer during a keyframe move by using the *DO IT* and *DO IT ALL* functions within the *ANIMATION - KEYFRMS* menu. If a cutout is moved from one layer to another, its layer is changed and the layer numbers of all other cutouts change correspondingly.

There is no theoretical limit to the number of cutouts on screen at any one time, but there are practical limitations caused by reduced system performance (speed taken to change menus and load pictures, cutouts, etc.) and the ability to select one cutout from a large number of cutouts on screen. The factors that affect performance are the number of unique cutouts used on screen and their original size.

Operation

Once there is more than one cutout on-screen, the menu displays as follows. Each cutout can have a unique size, position, rotation, style, % stick and keyframe move.

Any cutout on-screen (and not stuck down) can be selected by first highlighting it (the cutout turns pink) then tapping it with the pen. Once selected the highlight disappears and the cutout can be treated in the normal way, and any menu operation can be performed with it selected.

stick

This function is used to permanently stick down a selected cutout on to the picture.

del

This function allows a cutout, already displayed on-screen, to be deleted. This is done by first selecting the *DEL* box and then tapping the specific cutout using the pen.

To clear all the cutouts in collage at one time, select the *DEL* box followed by *CUT*, and all the cutouts on the screen are deleted.

DYNAMIC COLLAGE

copy

This function allows a cutout, already displayed on-screen, to be copied. The copy produced can then be re-positioned, sized and rotated as required leaving the original cutout unaffected. This is done by first selecting the *COPY* box, then highlighting and tapping the specific cutout using the pen.

only

When multiple cutouts are displayed on-screen, the *ONLY* box can be used to select just one for processing in isolation from its neighbours. This is done by first highlighting then tapping the specific cutout using the pen, then selecting the *ONLY* box.

2

The layer box next to *ONLY* allows any selected cutout to be moved to a different numeric layer with respect to the other cutouts on screen. This is done by first highlighting then tapping the specific cutout using the pen, selecting the layer box and entering the required layer number (1 to n where n is the topmost cutout and is the total number of cutouts that have been placed on-screen).

Note that the number in the layer box corresponds directly to the cutout selected. Changing the number in this box does not select another cutout.

Note: that care must be taken when changing numeric values, using pen in the picture area, not to accidentally select a different cutout.

The menu also displays the *POSITION XYZ*, *SPIN XYZ*, *SIZE XY*, *PIN* and *STYLE* functions, as previously described in the '3D' section.

PASTEUP

HARRIET

GENERAL NOTES

GENERAL NOTES

Live Video

With *PASTEUP* selected and a cutout on the end of the pen, simple effects can be created by using the *LIVE VIDEO* box. For this function, the Main Menu must have *DIGITAL B* selected as the live video input to enable the Ramcorder to provide the background video.

With the cutout on the end of the pen and the menus removed, button #2 on the hand unit will run the background clip in the Ramcorder, key the cutout over it and re-record it in the result clip. This produces a quick Real-time effect.

Re-sizing Cutouts

By selecting *DRAW STEN* and either *ADD* or *REMOVE* while pasting a cutout, the shape of that cutout may be either added to, or removed from the stencil. This allows one to change the size or rotation of a cutout prior to saving in the library. Simply select the size and angle required, press *STICK*, thus sticking it into the picture, select *DRAW STEN* and press *STICK* again, thus re-defining the image to be cut out. Select *CUT*, surround the image with the usual yellow rectangle, tap down to cut and subsequently treat as before.

Cutouts revert to their original size and angle when *ORIGINAL* is pressed.

Text as Stencil

The identical process is used to write text into the stencil : select *DRAW STEN* and either *ADD* or *REMOVE*, position type and *STICK*. The letter-forms are now either positive or negative stencils, as selected and may be used as such.

PASTEUP

HARRIET

CHAPTER 6
ANIMATION MENU

HARRIET

ANIMATION OVERVIEW

ANIMATION OVERVIEW

Description

From the *ANIMATION* menu gives access to the system's sequence, cell, Ramcorder and VTR menus. When the *ANIMATION* menu is selected the following menu displayed.

PAINTING	sequence	DRAW STEN	USE STENCIL
GRAPHICS	cell	save picsten	display sten
EFFECTS	ramcorder	old	new
PASTE UP		wipe pic	reverse sten
ANIMATION		restore pic	USE
LIBRARY			GRID

Sequence

The *SEQUENCE* function allows the recording, editing and replay of a sequence of events entered using the menu system, the number keys on the keyboard and using the buttons on the hand unit. When a sequence of pen movements has been recorded, it can then be replayed repeatedly as required.

Cell

The *CELL* function allows cell animation to be replayed over a video clip, while simultaneously recording the result. The *LIVE VIDEO* box is used to replay the stack over the video clip (*LIVE VIDEO* in Full Page Menu must be set to digital B) and cue button 2 on the joy-stick runs the clip.

HARRIET

Ramcorder

Selecting the *RAMCORDER* box activates control of the Ramcorder function of the system. This is a solid state ramcorder providing real time record and replay of video with frame-by-frame access. This function is designed primarily to provide rotoscoping, retouching and full frame animation facilities within the system.

SEQUENCE

SEQUENCE

Description

This allows the recording, editing and replay of a sequence of events entered using the control station. This facility can be used to record useful operating sequences which may be used on a regular basis. Sequence can be stored in the library and be replayed at will.

PAINING	sequence	show menu	record	on cue	DRAW STEN	USE STENCIL
GRAPHICS	cell	cue dot			save picsten	display sten
EFFECTS	ramcorder	loop	o		old	new
PASTE UP	3D	faster	100%		wipe pic	reverse sten
ANIMATION					restore pic	USE
LIBRARY	sequence - empty					GRID

Application

A sequence can be recorded, then played back at different speeds with or without the menu being displayed on play-back, rewind and shuttle backwards and forwards through a sequence frame by frame, set tags and remove unwanted sequences, and set cue points for controlled play-back.

The recording, editing and replay of sequences is controlled from the menu system, from the number keys on the keyboard and using the buttons on the hand unit.

HARRIET

Operation

During the use of the *ANIMATION*, *SEQUENCE* menu, the number keys on the keyboard are used as follows:

<0>	RECORD
<1>	REPLAY
<2>	STOP
<3>	REWIND
<4>	SHUTTLE
<5>	SET TAG
<6>	DELETE
<7>	CUE POINT
<8>	INSERT

show menu

Permits the user to decide whether or not menu and palette operations will be displayed in the sequence when replayed.

Cue dot

This allows cue points to be entered into the sequence, so that when it is replayed and reaches these points the sequence will stop awaiting a cue from the hand unit (button 2).

loop

Replays the sequence in a continuous loop, determined by the value in the green numeric box.

0

The value in the green numeric box determines the number of times the sequence is replayed. If the number is 0, the sequence will replay continuously until stopped by the pen or the STOP <2> key on the keyboard.

record

When the *RECORD* box is pressed for the first time all following actions are recorded until a subsequent press of the *RECORD* box.

SEQUENCE

on cue

This function allows the sequence to be recorded 'on cue' from the hand unit (button 2).

replay

This function allows the recorded or loaded sequence to be replayed, controlled by the *FASTER* and % functions.

faster

If this function is selected, the sequence will be replayed as fast as the system can. The green percentage box to the right determines the relative speed with respect to the fastest speed.

faster

record

This determines the record and replay speed of the sequence.

faster

replay

This function allows the recorded or loaded sequence to be replayed as fast as the system can.

%

This box controls the replay speed of a recorded sequence:

Faster on 100% = fast as possible

Faster on 1% = around normal speed

Faster off 100% = Normal speed

Faster off 50% = around 1/2 normal speed

Note: that the % value does not have any effect in the recording processes.

ins cue

This function allows cues to be inserted into a previously recorded sequence.

HARRIET

Making a Sequence

Select *SEQUENCE*. This assigns recording and editing functions to the top row of keys on the 'hard' keyboard unit and displays the menu.

Whilst the *SEQUENCE* box is active a sequence may be created at any time. Press the RECORD key <0> and the system will record all your subsequent actions. STOP <2> stops the recording.

REPLAY <1> will cause the recording to be replayed. STOP <2> will stop it at any time. REWIND <3> will ensure the next replay will start at the beginning.

Editing a Sequence

To edit, first de-select *FASTER*, select REWIND <3> then SHUTTLE <4>. This will place the cursor at the start of the sequence. Use the hand unit thumb switch to advance the cursor. Right is for forward. Left is for reverse. Down left and down right are slower.

To DELETE select SET TAG <5> at the start of the section to be deleted. Press DELETE <6> at the end of the section and that section will then be removed.

To insert a fresh element into a sequence, press INSERT <8> at the desired point, paint or do whatever addition is required, then press STOP <2>.

Inserting Cue Points

The replay of sequences may be cued, if necessary. Use SHUTTLE to select point then press INSERT CUE POINT <7>. On replay, the sequence will stop at this point and wait for the keyboard space bar to be pressed.

CELL

Description

Cell enables the development of cartoon style animation. This allows the selection of a cutout which can then be replicated into a screen full of 'primitive' cells. Each cell can then be worked on using all the normal system facilities and the resulting cells assembled into a 'stack' for animated replay.

PAINTING		sequence	replicate	single shot		DRAW STEN	USE JTENCIL
GRAPHICS		cell	move cell	reverse		save picsten	display sten
EFFECTS		ramcorder	make stack	loop		old	new
PASTE UP	3D		cycle stack	frames 25		wipe pic	USE GRID
ANIMATION			show cells	live video		restore pic	
LIBRARY							

The resultant animated image being controlled by the stylus; thus ones' cartoon figure may be "walked" through, for example, a picture stencil and be recorded as above. The larger the initial image or cell the fewer will fit on the screen and thus the coarser the subsequent animation. For most cartoon style applications, it has been found that a cutout size representing about one twelfth or one sixteenth of the screen is adequate, whilst a flashing caption requires only two or three frames and thus can occupy a half to a third of the picture.

HARRIET

Making a Stack

The technique is as follows:

- i Draw or select the image to be animated. (Note that this image may be part of a frozen live video, a caption, a graphic etc.)
- ii Cut out, using the stencil as necessary. Note that a cartoon figure, for instance, will need to be cut out with a stencil, as one requires it to be discrete and not surrounded by a rectangular panel. Note also that it is the size of the yellow box cursor that limits the number of cells replicated on the screen.
- iii From the *ANIMATION* menu select *CELL*. The *REPLICATE*, *MOVE CELL* and *MAKE STACK* menu functions will then be displayed.
- iv Select *REPLICATE*. This multiplies the cutout across the screen forming the cells from which to build the stack.
- v Use the system to achieve the required progressive modification of each cell. Note that *PAINTING*, *GRAPHICS*, *PASTE UP*, *STENCIL* etc., may all be used. Regular changes in position, size etc., may be facilitated by using statistics.
- vi In achieving the planned progressive movement, it is helpful to be able to modify a cell, drop a duplicate of it in the cell next door, re-modify, duplicate again, and so on. Select *MOVE CELL*, swipe off the menu and touch down with the stylus on the required cell. This may now be picked up and dropped down in any cell in perfect pin register. Re-select the required menu - *PAINTING* etc. - modify, re-select *ANIMATION*, swipe off and move cell again, as necessary.

Once the progression is complete, the frames may be built into a stack, ready for cycling. Press *MAKE STACK*, swipe off the menu, and touch down with the stylus on the cell you wish to be played first.

- vii This cell will now be displayed individually with a panel at the top of the screen, thus:

frames = 1 cell number = 1
run time = 0.04 seconds

Note: that the offset number refers to the cell position in the replicate frame rather than its position in the stack. *RUNNING TIME* refers to the total elapsed time of the stack, assuming replay at the standard frame rate.

- viii Tap down with the stylus to insert frame in the stack.
- ix Now select the remaining frames in the stack, in order, assigning frame exposure as necessary, and tapping down to inset, as above.
- x When the sequence is complete, swipe off again and the screen will turn black, with a panel at the top:

Making stack. Please wait a few seconds

Playing a Stack

- i Select *CYCLE STACK*. The stack may be cycled in one of three ways:

SINGLE SHOT 1.2.3. *END* (initiated by tapping space bar on keyboard).

REVERSE 1.2.3.2.1.2.3 etc.

LOOP 1.2.3.1.2.3. etc.

Select as necessary. Illuminate the green *FRAMES 25* pink by tapping down, then adjust the replay frame rate between 1 frame per second and 999 frames per second as required.

- ii Swipe off the menu and the stack will cycle as instructed.

The cycling stack may be treated as a cutout and moved or positioned over pictures, picture stencils and live video to achieve whatever result is required. Note that if you wish to reassemble a stack e.g; to change the running order or to assign new time signatures to particular cells, selection of *SHOW CELLS* will reproduce the cells.

- iii *LIVE VIDEO*. Select *LIVE VIDEO*, swipe off and the animation will be displayed over the Ramcorder input; digital B.
- iv Use button 2 on the hand unit to run the Ramcorder background clip and record the result in the result clip.

HARRIET

RAMCORDER

RAMCORDER

Description

This is a solid state ramcorder providing real time record and replay of video with frame-by-frame access. This function is designed primarily to provide rotoscoping, retouching and full frame animation facilities within the system.

From the *ANIMATION* menu the selection of the *RAMCORDER* function will display the menu as illustrated below.

The screenshot shows a menu interface with several sections. On the left, there are menu categories: PAINTING, GRAPHICS, EFFECTS, PASTE UP, ANIMATION, and LIBRARY. The main area contains a grid of options: 'sequence', 'result', '96', '191', 'sell', '29', 'more', 'cell', 'bgnd', '1', '96', 'buy', '179', 'ramcorder', 'swap', 'do offset', 'next', 'vtr', navigation arrows, '80', 'of 323', and 'fields'.

The system's Ramcorder holds 323 individually selectable frames (383 NTSC) of digital video, which can provide approximately 12 seconds of continuous recorded video information either from a live input source or extracted from a VTR. These 323 frames can be divided into a number of segments (called clips) each holding a proportion of the available frames. Normally two clips, each holding 161 frames (191 NTSC) of video, are used. One is designated as the 'Background clip' and the other as the 'Result Clip', which can be exchanged (swapped) as required:

Background clip = Frame 1 through to Frame 161 (1-191 NTSC)

Result clip = Frame 162 through to Frame 322 (192-383 NTSC)

Video for the 'Background clip' is either recorded from a live source or taken under timecode control from a VTR. Once the video is held in the 'Background clip' it can be processed using two main methods with numerous variations:

HARRIET

Frame-by-frame using the *PAINTING*, *GRAPHICS*, *EFFECTS* and *PASTE UP* facilities. Using this method the processed frames can be saved in the 'Result Clip'; saving the original until the result is finalised. Alternatively the processed frames can remain as the 'Background Clip'.

Using the *PASTE UP 3D* menu and *KEYFRAME* to position, size and spin cutouts or text in an effect evolving through the duration of the 'Background clip'.

Video from the 'Result clip' can either be played live or inserted back on to the VTR tape using timecode (i.e; an 'Insert Edit').

Operation

With only the *RAMCORDER* box selected the pen controls system's Ramcorder functions (as opposed to its VTR functions). The lower 'arrow' boxes will play, stop, etc., the entire contents of the system's RAM store.

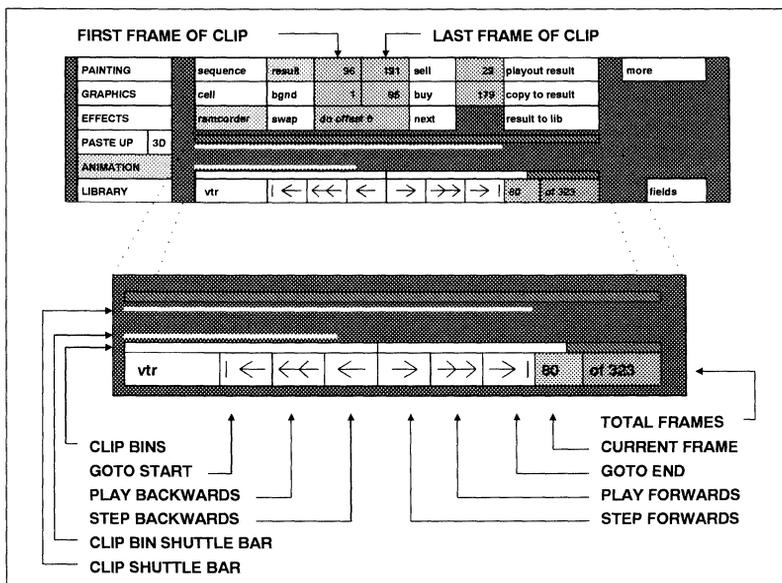
The orange shuttle bar can be drawn left and right by the pen to scroll through the clips held in the Ramcorder. Pen pressure affects the response of the clip to pen movement. i.e; light pressure - slow clip movement.

Tapping the pen down in the picture area will play the clips in the Ramcorder from the selected point. Using the *BGND* or *RESULT* box will limit the replay to the selected clip. A second tap of the pen will stop the replay.

Using the pen in a circular motion on the picture area will jog the Ramcorder clips, clockwise for forward and anti-clockwise for reverse. Moving the pen left and right in the picture area steps through frame at a time. similarly, the pen pressure will vary the Ramcorder response for both actions.

When controlling video clips within the system the lower part of the menu displays the transport controls in the form of a 'control bar'.

RAMCORDER



The 'clip bin' is a visual representation of the background and result clips addressed in the Ramcorder. The two light grey bins, separated by a line, are the addressed frames of the background and result clips. The dark grey bin indicates the frames that are not addressed. The addressed frames are determined by the first and last frame values entered in the green boxes to the right of the *RESULT* and *BGND* boxes.

The orange line, that appears above the 'clip bins' is the 'clip bin shuttle bar' and is used to move (or shuttle) through the frames in the 'clip bins'.

The orange line, that appears below the menu functions is known as the 'clip shuttle bar' and is used to move (or shuttle) through the background or result clip instead of the whole 'clip bin'.

The currently selected clip is known as the 'current clip'. It is indicated by the position of the 'clip shuttle bar' (ie orange line above the 'clip bins') and by the number in the 'current frame' box.

The length of the orange line is small when the first frame in the clip is displayed and full width when the last frame in the clip is displayed. The line length updates as the clip is played or stepped through frame by frame.

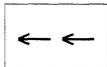
HARRIET

Pressing the pen any where on this orange line will cause the clip to jump to the frame equivalent to the position on the line. Keeping the pen pressure on the selected point on the orange line then moving right or left will manually play or rewind the clip.

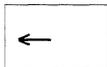
The arrow symbols on the control bar (as illustrated above) have the following functions:



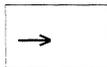
This instantly sets the current clip to the first frame.



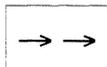
This plays backward at normal speed from the currently shown frame to the first frame.



This plays backward one frame at a time from the currently shown frame.



This plays forward one frame at a time from the currently shown frame to the last frame.



This plays forward at normal speed from the currently shown frame to the last frame.



This jumps instantly to the last frame.

Note: There are two further function boxes at the end of the control bar, which display the frame numbers.



These show the position of the selected frame and can be manually set via the numeric pad.

RAMCORDER

result

96

191

The green numeric boxes to the right of the *RESULT* box determine the first and last frames, of the Ramcorder, to be used as the result clip. The clip length can be set automatically (for example when loading a clip from VTR) or manually.

bgnd

1

95

The green numeric boxes to the right of the *BGND* box determine the first and last frames, of the Ramcorder, to be used as the background clip. The clip length can be set automatically (for example when loading a clip from VTR) or manually.

swap

This box swaps over the background and result clips. This is particularly useful when performing multi-layers on one clip.

buy

The *BUY* box takes the frame as indicated in the numeric box next to it and passes it to the framestore for re-touching or rotoscoping. After each action the numeric box is incremented by 1.

sell

The *SELL* box takes the current frame in framestore and passes it back to the Ramcorder RAM store at the frame indicated by the number in the box next to the *SELL* box. After each action the numeric box is incremented by 1.

next

The *NEXT* key automates the sell and buy process into one operation, incrementing by 1 each time, to speed the process along.

HARRIET

The *NEXT* function can quickly be carried-out by the hand unit button 1. In addition the *PREV* function, which can be set via the *MORE* box, enables a number of frames to be previewed while rotoscoping. Simply insert the required number to be previewed into the *PREV* box and when button 3 is pressed on the hand unit the previous 'n' frames will be previewed.

Note: that when *SWAP* is used to swap the background and result clips, the numbers in the *PREV* and *NEXT* boxes will also swap.

more

When selected the *MORE* box presents the menu boxes *AUTO SAVE* and *PREV*, as illustrated below:

auto save

This works in conjunction with *SELL* to automatically save the frame to disk. (When performing complex rotoscoping, this acts as back-up for work processed.)

prev 5

This works in conjunction with *BUY* and *SELL* to preview the previous 'n' frames that have been rotoscoped.

offset 0

This enables a keyframe effect (produced in the *PASTEUP 3D* menu to be offset with respect to the background clip. For example, *OFFSET 20* will cause the effect to start 20 frames into the effect and *OFFSET -20* causing it to start 20 frames late.

field

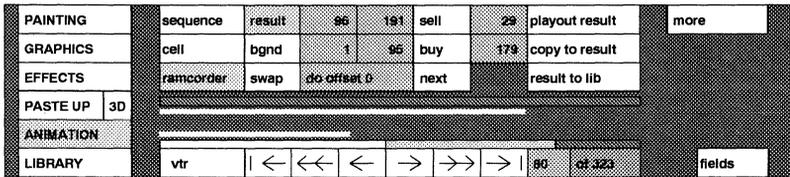
When processing an effect, *FIELD* enables the processing to occur at field rate rather than frame, for smooth motion.

RAMCORDER

It can also be used when buying or selling images for painting/re-touching. In addition, when viewing the clips in the Ramcorder only the selected field (1 or 2) will be seen.

HARRIET

Result Menu



Selecting the **RESULT** box will lock the replay functions into showing the result clip in the Ramcorder. This is shown by the appropriate 'clip bin' shown in pink. The pen can be used to look outside the result clip (i.e; to the background clip) by using the 'clip bin shuttle bar'.

playout result

This sets the replay clip to the first frame and enables bounce and reverse modes to be selected. Button 2 of the hand unit is used to play the clip. Also, tapping the pen down in the picture area will play the clip. A second tap of the pen will stop the replay, and this will also enable the playout control boxes on the right of the menu; **REVERSE**, **BOUNCE**, **CUE WAIT**, **PAUSE/ALL** and **CLEAR/ALL**.

Setting-up the clip containing **PAUSE** and **CUE WAIT** (later described in Playout Control Boxes) allows the sequence to be built and played live to air. To replay the clip live to air, swipe off to remove the menu (keeping the pen out of proximity to the tablet) and playout by pressing button 2 of the hand unit.

reverse

The **REVERSE** box plays out the clip in reverse. The field order is also reversed, thereby giving a smooth replay.

bounce

The **BOUNCE** box plays the clip forward and then in reverse. If **REVERSE** is selected this then plays reverse and then forward.

cue wait

This box enables a 'cue' instruction to be inserted into a clip at any specific point, so that when the clip is played and the cue instruction is reached, the clip is halted and will not continue play until user action is taken.

RAMCORDER

To insert *CUE WAIT*, run the clip through to the required frame position and select the *CUE WAIT* box. (Repeat this if further cue/wait locations are required in the same clip.) When the clip is played and reaches the designated cue point the *CUE WAIT* box will become highlighted, (unless the menu was initially swiped off).

To replay the clip live on air, using the hand unit press button 2, or using the pen tap down in the picture area or, if the menu is displayed, the shuttle bar can be used to continue playout of the clip.

Use the *CLEAR* box to delete a specific cued point from the clip, in the same way as described in clearing a pause. Use the *CLEAR* and *ALL* boxes to delete ALL the 'cue wait' points at the same time from the clip.

pause

The use of the *PAUSE* box enables a pause (or more than one pause) to be inserted into a clip, the pause being a period of a specified number of frames.

TO INSERT A PAUSE

Using the pen to control the shuttle bar, run the clip through to the required frame position and select the *PAUSE* box. The green numeric box appears below *PAUSE*.

Select the green number box and from the numeric keypad enter the required number of frames (to be the period of the pause) and the figure displays in the green numeric box. If more than one pause is required in the same clip, run the shuttle bar to the next frame position and repeat the *PAUSE* selection.

TO PLAYOUT CLIP

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Setting-up the clip containing *PAUSE* and *CUE WAIT* allows the sequence to be built and played live to air. To replay the clip live to air, swipe off to remove the menu (keeping the pen out of proximity to the tablet) and payout by pressing button 2 of the hand unit.

all

This enables a specified pause period to be inserted repeatedly at every frame throughout the clip. Select *PAUSE* and then enter the required number of frames into the green numeric box and select the adjacent *ALL* box. When the clip is played-out, the pause will occur at every frame during the clip. As this occurs, if the menu is displayed, the green numeric box will display the count-down of the pause period and the field box will also increment as each frame is played.

clear

The *CLEAR* box enables a specific pause period to be cleared from the clip. To do this run the shuttle bar to the relevant pause position and the *PAUSE* box will become highlighted. The green numeric box will display the number of the period number of frames when the pause is reached. Select the *CLEAR* box and the current pause is removed.

all

This is used to clear all the 'pauses' and/or all the 'cue waits' at the same time from the clip. First select the *CLEAR* box followed by the *ALL* box. (The clip maybe at any frame position on the shuttle bar, or at the beginning or end of the clip to clear *ALL* pauses or cued waits.)

RAMCORDER

copy to result

This copies the background clip to the result clip. This copies the background clip to the result clip for further processing (i.e; a second layer of effects or animation). Tapping the pen down will start the process. Bounce and reverse are also enabled.

Note that if it is required to copy the result clip to the background clip, use the *SWAP* function first

loop

The two *LOOP* boxes loop the playing of the selected clip, primarily for playout functions.

reverse

The *REVERSE* box plays out the clip in reverse. The field order is also reversed, thereby giving a smooth replay.

bounce

The *BOUNCE* box plays the clip forward and then in reverse. If *REVERSE* is selected this then plays reverse and then forward.

result to lib

This transfers the result clip frame by frame (field if the *FIELD* box is on) to the selected write enabled disk using the name and frame number specified.

Selection of the *RESULT TO LIB* box activates a blue name/title box followed by a green number box and these appear below the clip frame number boxes. The name box, entitled *USING*, enables a specific title to be saved with the frames as well as sequential numbers. The transfer of frames is cued using button 2 of the hand unit.

The name is set using the *AUTO TITLE* box in the Full Page menu. The number box can be used to set the first frame to be saved or recalled. Numeric entry can be made via the numeric pad which displays when the number box is touched.

HARRIET

Background Menu

PAINTING	sequence	result	96	191	sell	29	playout bgnd	more
GRAPHICS	cell	bgnd	1	95	buy	179	rec to bgnd	
EFFECTS	ramcorder	swap	do offset 0		next		lib to bgnd	
PASTE UP	3D							
ANIMATION								
LIBRARY	vtr	<<< <	>	>>>	>>	60	of 323	fields

Selecting the *BGND* box locks the replay functions into showing the background clip in the Ramcorder. This is shown by the appropriate 'clip bin' shown in pink. The pen can be used to look outside the result clip (i.e; to the result clip) by using the 'clip bin shuttle bar'.

playout bgnd

This sets the clip to the first frame and enables the bounce and reverse modes to be selected. Tapping the pen down will start the replay. This will also enable the playout control boxes on the right of the menu.

loop

The two *LOOP* boxes loop the playing of the selected clip, primarily for playout functions.

reverse

The *REVERSE* box plays out the clip in reverse. The field order is also reversed, thereby giving a smooth replay.

bounce

The *BOUNCE* box plays the clip forward and then in reverse. If *REVERSE* is selected this then plays reverse and then forward.

rec to bgnd

When selected this displays video source boxes and enables the selected video source to be recorded into the background clip, as described below. Note: These input functions should not be used for loading-in a clip from VTR. For accessing VTR facilities, refer to the section 'VTR Control'.

single

SINGLE records a single frame of the selected type.

RAMCORDER

rgb/yuv

This selects RGB/YUV as the input source.

digital A

This selects digital A as the input source, i.e; the external CCIR input.

digital B

This selects digital B as the input source, i.e; the Ramstore.

still

This enables a single frame to be recorded to the entire length of the Ramcorder clip.

library to bgnd

This transfers the requested library file (clip) from the selected read enabled disk to the

background clip.

Selection of the *LIBRARY TO BGND* box activates a blue name/title box followed by a green number box and these appear below the clip frame number boxes. The name box, entitled *USING*, enables sequentially numbered of frames with a common name (created using the *RESULT TO LIB* function) to be recalled. The transfer of frames is cued using button 2 of the hand unit.

The name is set using the *AUTO TITLE* box in the Full Page menu. The number box can be used to set the first frame to be saved or recalled. Numeric entry can be made via the numeric pad which displays when the number box is touched.

HARRIET

VTR

Description

This allows the VTR (Betacam SP or D1) to be controlled. The menu displays to provide the functions required for VTR control, such as timecode, rewind, step, etc.

PAINTING	sequence	result	#6	191	sell	29	more
GRAPHICS	cell	bgnd	1	95	buy	179	
EFFECTS	ramcorder	12:59:59:24	in	out	12:59:59:24		
PASTE UP	3D					00:00:00:00	
ANIMATION						standby off	
LIBRARY	vtr	rew	stop	←	→	play	ffwd
						00:00:00:00	

Application

Selection of the *VTR* function also changes the operation of the shuttle bar above the VTR control boxes, as well as the function of the *RESULT* and *BGND* boxes.

The shuttle bar enables a variable speed shuttle of the tape in either direction by simply using the pen to draw out the orange shuttle bar in the required direction. Pen pressure affects the response of the VTR to pen movement. Light pressure provides small VTR movement.

Operation

The Mainframe controls a VTR using the VTR's own tape timecode. The timecode is an eight digit code detailing the Hour-Minute-Second-Frame position of all video frames on the tape for example:

12:30:15:21 Represents 12 Hours:30 Minutes:15 Seconds:21 Frames

Note that on 625 systems 25 frames = 1 second and on 525 systems 30 frames = 1 second.

HARRIET

Segments of video on tape can be edited by specifying the 'In Timecode' (timecode at which editing begins) and the 'Out Timecode' (timecode one frame after the edit stops). The specified timecodes being directly related to the frames in the 'Background Clip'. For example:

A 'Background clip' (for example frame 1 to 161) can be taken from tape using an 'In Timecode' of 12:00:00:00 and an 'Out Timecode' of 12:00:06:12, but only the tape frames 12:00:00:00 (frame 1) to 12:00:06:11 (frame 161) will be loaded.

A 'Result clip' (for example frame 162 to 322) can be inserted back in to this 'Timecode slot' using the 'In Timecode' 12:00:00:00 and the 'Out Timecode' of 12:00:06:12, but only the tape frames 12:00:00:00 to 12:00:06:11 will be Inserted.

rew

Rewind the VTR.

stop

Stop the VTR.

←

Step VTR backward one frame.

→

Step VTR forward one frame.

play

Play the VTR.

ffwd

Fast forward the VTR.

The VTR can be controlled with the pen in a similar way to the Ramcorder RAM store. Circular motion in the picture area will jog the VTR. Drawing the pen to the left or right in the picture area will move the VTR in the direction of the pen. Pen pressure affects the VTR response.

VTR Result Menu

PAINTING	sequence	result	96	191	sell	29	result to vtr	loop
GRAPHICS	cell	bgnd	1	95	buy	179	same as bgnd	reverse
EFFECTS	ramcorder	12:59:59.24		in	out	12:59:59.24		bounce
PASTE UP	3D						00:00:00:00	
ANIMATION							standby off	
LIBRARY	vtr	rew	stop	←	→	play	ffwd	00:00:00:00

result

Selecting the *RESULT* box changes the boxes to the right of the menu as show above.

result to vtr

This will play back the result clip in the Ramcorder to the location specified by the timecode in and out boxes. This could be either the same place that it was copied from, or a new location.

same as bgnd

This will copy the timecode values from the *BGND* timecode boxes into the *RESULT* timecode boxes, enabling the modified clip to be returned (frame accurately) to its original location.

Note: The timecode boxes, status box, pen control and shuttle bar apply as previously described in the *BGND* menu.

VTR Background Menu

PAINTING	sequence	result	96	191	sell	29	vtr to bgnd	more
GRAPHICS	cell	bgnd	1	95	buy	179	make clips	
EFFECTS	ramcorder	12:59:59.24		in	out	12:59:59.24		
PASTE UP	3D						00:00:00:00	
ANIMATION							standby off	
LIBRARY	vtr	rew	stop	←	→	play	ffwd	00:00:00:00

bgnd

Selecting the *BGND* box changes the boxes to the right of the menu as shown above:

HARRIET

In the VTR control menu there are four timecode boxes. The blue box to the lower right of the menu is the timecode as read from the VTR tape and is the 'source timecode'. Above this is a second (scratch) timecode in a green box which is used for numeric timecode entry, via the keypad. To the left of this are the *IN* and *OUT* timecode boxes which hold the *IN* and *OUT* points for the clips to be transferred to and from the VTR and the Ramcorder.

A point to note here is that there are two sets of these 'In' and 'Out' timecodes, one each for the result clip and background clip. The relevant timecodes are called-up when the *RESULT* or *BGND* boxes are selected. The VTR can be made to cue to *IN* and *OUT* timecode boxes or the scratch timecode box, simply by selecting the box with the pen.

When the scratch timecode box is selected and the numeric pad is displayed, it is also possible to increase or decrease the timecode reading by a set number of frames. Simply select the required number of frames and press the *INC* or *DEC* boxes in the numeric pad display. The timecode scratch box will move forward or backward the selected number of frames and the VTR will shuttle to the new position.

Above the VTR source timecode box is a status box in blue, which shows the current state of the VTR. This status box may show any of the prompts; stopped, standby off, jog → rewind and fast fwd, etc.

vtr to bgnd

This will copy the video from the selected timecodes into the background clip of the

Ramcorder.

make clips

This makes a background and a result clip of the required length, as defined by the *IN* and *OUT* timecodes. If the requested clip is too long it will say so, if the clip is longer than half of the Ramcorders RAM store the result and background start and finish points will be the same (i.e; they will overlap). If the requested clip is less than, or equal to, half of Ramcorder, the result in point will follow on from the background out point.

Note: The lower part of the Ramcorder (i.e; frames 1 onwards) are always used for the background clip when transferred from VTR.

CHAPTER 7
LIBRARY MENU

HARRIET

LIBRARY OVERVIEW

LIBRARY OVERVIEW

Description

The library is a comprehensive storage and management system. The initial menu display is as follows:

PAINTING	find	name																end
GRAPHICS	save	types	picture	A	B	C	D	E	F	G	H	I	J					upper
EFFECTS	recall	owner	stencil	K	L	M	N	O	P	Q	R	S	^					lower
PASTE UP 3D	keep	date	cutout		T	U	V	W	X	Y	Z	'	'					other
ANIMATION	lose	categories	keyfrms	↓	↑	space		rubout				,	.					clear
LIBRARY			picture	local	shared	net		exch		inc								dec

find

This function is used to find items in the system's library. These items include pictures, cutouts, stencils etc.

save

This function is used to save items in the system's library. These items include pictures, cutouts, stencils etc.

When entering information in any of the descriptive fields, the following line editing commands are available from the keyboard:

- <CONTROL> Will place the text cursor at the beginning of the line.
- <CONTROL><E> Will place the text cursor at the end of the line.
- <CONTROL><W> Will place the text cursor at the beginning of the next line.
- <CONTROL><S> Will save the currently entered text for future use.
- <CONTROL><R> Will restore the previously saved text.
- <CONTROL><C> Will delete any text after the text cursor.

HARRIET

Search Card

Name		
	Type Disk Owner Date Number	Picture Local
Categories		
Description		

- NAME** This field allows any library entry to be found by any part of its title. Up to 32 characters can be entered in a search.
- TYPE** The *TYPE* field of the filecard allows any library entry to be found by its file type.
- DISK** This field allows items to be found on a specific picture disk type. "Local" is a disk connected only to the Mainframe. "Shared" is a disk also connected to another system via a Shared User Bus. "Picturenet" is a disk connected to the system via the Picturenet. "Exchangeable" is a Magneto Optical disk.
- OWNER** The *OWNER* field allows any library entry to be found by its owner.
- DATE** The *DATE* field allows pictures in the library to be found by date characteristics.
- NUMBER** This field allows an entry to be found by its 'picture number'.
- CATEGORIES** Stored items can be given a second title or category as well as its name. This can be used to create a fully structured filing system.
- DESCRIPTION** Descriptive text can be stored with the item.

FIND

Description

The *FIND* function is used to find items in the system's library. These items include pictures, cutouts, stencils, etc. Selecting *FIND* displays the menu as shown below. This displays the various features that may be stored in the library.

PAINTING	find	name											end	
GRAPHICS	save	types	picture	A	B	C	D	E	F	G	H	I	J	upper
EFFECTS	recall	owner	stencil	K	L	M	N	O	P	Q	R	S	^	lower
PASTE UP 3D	keep	date	cutout		T	U	V	W	X	Y	Z	'	'	other
ANIMATION	lose	categories	keyfrms	↓	↑	space		rubout				,	.	clear
LIBRARY			picture	local	shared	net		exch		inc			dec	

Application

The combination of *FIND*, followed by *NAME* and *PICTURE*, *STENCIL* or *CUTOUT* allows the specified item type to be found by search key-word. The required name can be entered via the menu keypad or the keyboard.

- name

picture

Used to find the pictures.
- stencil

Used to find stencils.
- cutout

Used to find cutouts.
- keyfrms

Used to find keyframes.

HARRIET

Find Name

To enter the required name via the menu keypad, press *CLEAR* to remove any unwanted title text. Type-out enough of the required title to identify it (say the first two or three characters). Note that the keypad is provided with *UPPER* case, *LOWER* case and *OTHER* (Numeric) characters. *SPACE* gives word spacing. Errors may be corrected with *RUBOUT*.

Press *END*. This is the command button and the enabled disks will now be searched for the title selected. If *END* is pressed when no title has been typed in, the entire library will be searched for all titles.

The title box allows any library entry to be found by any part of its title. Up to 32 characters can be entered in a search in the following ways:

Pressing the *END* will find all pictures in the library for the currently selected disks.

A single 'key-word' or character search, will look for a given character starting at the beginning of a word. For example, typing *AND* will find a picture title with "Andrew", "Android" but not "Sand".

Two or more 'key-words' or characters separated by a space, will look for the corresponding words or characters, both of which appear in a picture's title. For example, typing *PRESIDENT AIRPORT* would find "President Arrives at Airport", but would not find "London's Third Airport".

Two or more 'key-words' or characters separated by an Ampersand (&) will look for the individual words or characters in the picture titles. For example, typing *PRESIDENT & AIRPORT* would find "President Arrives at Airport" and would find "London's Third Airport".

In general, pressing down the pen on the tablet will halt the current operation. The <ESCAPE> key on the keyboard can also be used.

When a title string is typed in the *NAME* field, it can be saved for future use by pressing the up arrow key on the keyboard. A further title string can be saved by pressing the down arrow. To access title strings in these buffers press either of the arrow keys as appropriate. Note that these buffers once used cannot be overwritten, but must be deleted using *CLEAR*.

All titles found will be displayed on the screen in various forms as described later. Note: If the *CARD* function box is selected, then the Index Card system is displayed on the screen to provide all the title information.

The following boxes appear in the *FIND - NAME* menu. These boxes represent the disks that can be searched as part of the *FIND* process. The boxes match those of the 'disk block' in the Full Page menu.

local

This box represents all of the disks (not including the Magneto Optical disk) that are physically connected to the Mainframe. These disks are only accessible to the user of the Mainframe. The actual 'local disks' to be used are enabled using the *LOCAL* box in the 'disk block' of the Full Page menu.

shared

This box represents all of the disks connected via a Shared User Bus. These disks are only accessible to users on the Shared User Bus. The actual 'shared disks' to be used are enabled using the *SHARED* box in 'disk block' of the Full Page menu 'disk block'.

net

This box represents all of the disks that are only available as part of Picturenet. These disks may be accessible to all users of the Picturenet. The actual 'network disks' to be used are enabled using the *NET* box in the 'disk block' of the Full Page menu.

exch

This box represents all Exchangeable disks (ie Magneto Optical disks) that are connected to the system; both locally and via Picturenet. The actual 'Exchangeable disks' to be used are enabled using the *EXCH* box in the 'disk block' of the Full Page menu.

When these boxes are pink the disks can be searched (read), when they are grey (disabled) they cannot be read and when they are blue in means that not all of the disks in the Full Page menu are read enabled.

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Find Types

PAINTING	find	name	group	any	palette	logo	stack	end
GRAPHICS	save	types	picture	grid	cameo	col curves		
EFFECTS	recall	owner	stencil	cells				
PASTE UP 3D	keep	date	cutout	sequence				
ANIMATION	lose	categories	keyfrms	text font				
LIBRARY			picture					

The *TYPES* menu allows the selected 'type' of file to be found. The four most common types are listed to the right of this box to enable quick access. When *TYPES* is active the following boxes are displayed. Selecting one of the boxes enables only files of that type to be found or saved:

group

The *GROUP* box allows various combinations of files to be found, e.g; pictures, grids and cells of the same name. Select *GROUP* first, then the other items that are required.

any

The *ANY* box allows all files to be accessed with the same name.

picture

This allows picture files to be found.

stencil

This allows stencil files to be found.

cutout

This allows cutout files to be found.

keyfrms

Allows keyframe files to be found. Keyframes are generated using the *PASTEUP - 3D* menu and a library keyframe file if fetched will overwrite the current keyframes.

sequence

Allows sequence files to be found. Sequences are generated using the system's *ANIMATION SEQUENCE* menu, and a library sequence if fetched will overwrite the currently loaded sequence.

palette

Allows palette files to be found. If a palette is fetched from the library it will overwrite the one currently being used.

grid

Allows grid files to be found. If a grid is fetched from the library it will overwrite the one currently being used.

cells

Allows cell files to be found. Cells are generated using the system's *ANIMATION CELL* menu, and a library cell file if fetched will overwrite the one currently being used.

text font

This allows text font files to be found. Browsing a text font displays representative characters. All systems are set-up with six fonts as standard.

A wide range of fonts are provided and these may be loaded, when required, into the Library from the Magneto Optical disk, a process made available by Quantel. (Loading new fonts is achieved using the Full Page *SYSTEM* menu, discussed in the 'Setup Menu' chapter.)

logo

This allows logo files to be found. A logo file is a stencil-only format used by the Quantel Cypher.

cameo

This allows cameo files to be found. A cameo file is a cutout file used by the Quantel Cypher.

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stack

This allows stacks previously created in the *ANIMATION CELL* menu to be found.

col curve

This allows Colour Curves to be found and used with the *EFFECTS* menu *COLOUR FETTL* function.

Find Owner

PAINTING		find	name													end
GRAPHICS		save	types		A	B	C	D	E	F	G	H	I	J	upper	
EFFECTS		recall	owner		K	L	M	N	O	P	Q	R	S	^	lower	
PASTE UP	3D	keep	date		T	U	V	W	X	Y	Z	'	'	other		
ANIMATION		lose	categories		↓	↑	space		rubout			,	.	clear		
LIBRARY														inc	dec	

The *OWNER* box can be used to search for files that are owned by a specific user. If any 'owner' information exists, it does not restrict access to any files.

When a name is typed in the *OWNER* field, it can be saved for future use by pressing the up arrow key on the keyboard. A further name can be saved by pressing the down arrow. To access names in these buffers press either of the arrow keys as appropriate. Note that these buffers once used can not be overwritten, but must be deleted using *CLEAR*.

Find Date

PAINTING	find	name	from	none	only	inc	today	dec	end
GRAPHICS	save	types	to	none					
EFFECTS	recall	owner	before	after	today	all	7	8	9
PASTE UP	3D	keep	date				4	5	6
ANIMATION	lose	categories					1	2	3
LIBRARY								0	C

DATE can be used to find files saved between given dates and displays the following boxes:

from

When selected, the menu displays the numeric pad (as shown above). This is used to set the 'from' search date.

to

When selected, the menu displays the numeric pad (as shown above) used to set the 'to' search date.

The numeric pad that appears when *FROM* and *TO* are selected allows the 'from' and 'to' search dates to be set.

When entering the 'from' or 'to' dates, select the required numbers for the date from the numeric pad and then select the *DASH* key (-) to place the date in the blue status box. The calendar pad will automatically change to display the months, as illustrated below:

PAINTING	find	name	from	none	only	inc	today	dec	end
GRAPHICS	save	types	to	none			30-		
EFFECTS	recall	owner	before	after	today	all	jan	feb	mar
PASTE UP	3D	keep	date				apr	may	jun
ANIMATION	lose	categories					jul	aug	sep
LIBRARY							oct	nov	dec

Select the required 'month' box (i.e; *SEP*) from the calendar pad. The selected month displays in the blue status box followed by a hyphen and then the numeric pad re-displays.

Then follow this with the year (i.e; *90*) and select the appropriate *FROM* or *TO* box. Note; that as the requested date is displayed, the day (i.e; *SUN*) is automatically inserted.

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Note: The *INC* and *DEC* boxes at the top of the calendar pad can be used to select dates prior to (*DEC*) or beyond (*INC*) the existing date entry. Continue to tap either *INC* or *DEC* box until the required date displays in the *FROM* or *TO*. The *TODAY* box, if selected, automatically replaces the existing date entry with the true current date (as known by the computer).

Below the *FROM* and *TO* entry dates the further four function boxes are available in order to change a date entry.

before

This is used to search 'before' a given date.

after

This is used to search 'after' a given date.

today

This is used to enter 'today's' date in the selected box.

all

ALL is used to search all dates.

Find Categories

PAINTING	find	name											end
GRAPHICS	save	types	A	B	C	D	E	F	G	H	I	J	upper
EFFECTS	recall	owner	K	L	M	N	O	P	Q	R	S	^	lower
PASTE UP 3D	keep	date	T	U	V	W	X	Y	Z	'	'	other	
ANIMATION	lose	categories	↓	↑	space	rubout				,	.	clear	
LIBRARY											inc	dec	

The *CATS* box can be used to find items with various filing categories besides a name. Stored pictures can be given a second title or category. This can be determined by the user to create a fully structured filing system. For example categories could include "Sports", "News", "Weather", etc to differentiate between applications.

When a title string is typed in the *CATEGORIES* field, it can be saved for future use by pressing the up arrow key on the keyboard. A further title string can be saved by pressing the down arrow. To access title strings in these buffers press either of the arrow keys as appropriate. Note that these buffers once used can not be overwritten, but must be deleted using *CLEAR*.

Processing an Item

PAINTING		find	name	fetch	titles	first	overlay	display sten	
GRAPHICS		save	types	delete	browse	down	rework	save pic	
EFFECTS		recall	owner	archive	info	up	resize	old	new
PASTE UP	3D	keep	date	retitle	card	last		restore pic	
ANIMATION		lose	categories	print		all		ingrid	&fetch
LIBRARY				mail	num				

When the system has found titles, the menu will change as shown above. The menu may be used to select any of the following features applicable to the designated title:

fetch

To fetch the designated file from the Library, press the *FETCH* box, followed by the title on the screen.

delete

To delete the designated file from the system's Library, press the *DELETE* box, followed by the title on the screen. Pressing *DELETE* offers a *CONFIRM* or *IGNORE* function. If a disk is write protected, the prompt "PROTECTED" will be displayed.

archive

Transfers (archives) the file and its title to any write-enabled disk. Thus files may be archived on to specific disks. *ARCHIVE* offers a *CONFIRM* or *IGNORE* function and these are used to carry-out the requested action.

all

Selecting the *ALL* box allows the entire buffer to be selected when carrying out a *DELETE* or *ARCHIVE* function and therefore, all the buffer information is deleted or archived. Note that when, for example, archiving the disk becomes full the red *ERROR* box appears and the prompt *DISKFULL* displays.

HARRIET

retitle

The *RETITLE* box allows the library title information to be changed. The name, owner and category can be modified for the existing entry by pressing the *RETITLE* box and then selecting the item you wish to retitle. The screen displays the selected item in its Index Card form and the menu provides the *IGNORE* box. Select the required field and type the changes.

The *NAME* field shows the character title of the picture. This would be defined by the user.

The *TYPE* field shows the type of library entry, i.e; Picture, Cutout, Stencil and Stack.

The *DISK* field shows the disk on which the entry is stored. This information is automatically logged when the picture is recorded.

The *OWNER* field of the card shows the name of the originator/owner.

The *DATE* field shows the date that the Picture was recorded.

The *NUMBER* field allows a number to be allocated to a Picture or Cutout for use with Paintbox Presenter or Picturebox.

The *CATEGORIES* field provides an extended description of the picture, and can be a second title or category determined by the user/librarian in a fully structured filing system.

The *DESCRIPTION* field allows a textual description to be held with the item. This field can be used as part of searches.

print

This prints out the file titles to the selected port. It will print the titles in the buffer. Full Page Menu is used to select the output port. When *PRINT* is selected the *FULL* box displays (below *LAST*) and the additional boxes *ALPHA* and *NUM* appear to the right of the menu.

full

Selecting the *FULL* box enables the full information to be listed when applying the *PRINT* function.

alpha

Selecting the *ALPHA* box arranges the listed information into alphabetical order for the print out.

num

Selecting the *NUM* box arranges the listed information into numerical order for the print out.

mail

This function allows library items (such as pictures and cutouts) to be sent to specific number ranges of a predetermined 'area' of Picturenet. The destination for the library items, and the numbers given to them, is setup in the Full Page *NET* menu. Note that the incoming number range for mail is setup in the Full Page *NET - MAIL* menu.

The green box to the right of the *NUM* box determines the start value from which slides are numbered (specified by the 'mail' setup of the receiving system). If 0 is entered, the pictures will be numbered from the first unused number in the allowed number range. This number increments automatically as items are sent.

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num

This allows picture titles to be numbered as slides for use with Paintbox Presenter or with Picturebox. The green box to the right of the *NUM* box determines the start value from which slides are numbered. When numbering a picture, existing numbers will not be used unless they are first cleared from the picture titles. If 0 is entered, the pictures will be numbered from the first unused number, avoiding any numbers already in use.

add

This box is used when cutouts are being numbered for replay using the Paintbox Presenter panel, or for use with Picturebox, to define the way in which they will be replayed over a background.

With the *ADD* box on, any cutout numbered will 'add' to the previous image displayed.

Those cutouts numbered with the *ADD* box off, will replace the image displayed. Cutouts that have been numbered without the 'add' characteristic are displayed on the 'Titles' menu as reversed video.

clear

This function is used to clear the slide number from any selected picture title.

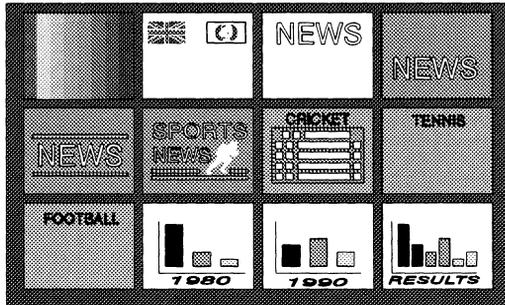
titles

The *TITLES* function displays twelve of the library titles, purely in listed text form. This also shows a column of 'types' on the right side of the screen (i.e; picture, stencil, etc.).

Files found on disk "System Disk" (IMPRMIS 94241-7 0832)	
Picture 1 saved at 15:25:31 on 05-Jul-1990	Picture
Picture 2 saved at 14:14:30 on 05-Jul-1990	Picture
Picture 3 saved at 14:33:53 on 05-Jul-1990	Picture
News logo 1	Picture
News logo 1 on background	Picture
Sports News logo	Picture
Cricket - scoreboard	Picture
Tennis	Picture
Football	Picture
Election 1	Picture
Election 2	Picture
Election - scoreboard	Picture

browse

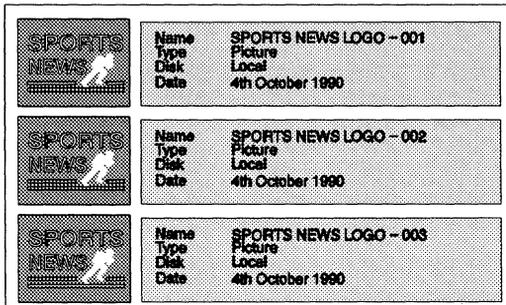
This displays the titles as miniature pictures, to a maximum of twelve. Press the miniature to display the picture full screen.



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info

This function enables you to view three browse miniature pictures and with each picture its library information alongside.



card

Selecting *CARD* shows the library titles in the form of an on-screen Index Card as shown below. The pen can be used to select the required function directly from the index card.

Name		SPORTS NEWS LOGO	
	Type	Picture	
	Disk	Local	
	Owner		
	Date	4th October 1990	
		Number	
Categories			
Description			

down

If more than twelve entries are displayed, selecting *DOWN* will move to the next twelve entries. If *DOWN* is selected the *UP* function appears allowing all the entries found to be seen in turn.

first

This can be selected to go to the start of the library titles, the *FIRST* title/page.

last

To go to the end of the library titles, and view the *LAST* title/page.

overlay

Causes the designated picture to be brought down as a stencil (see *EFFECTS*).

rework

This is used to rework cutouts. It stamps down both the picture and stencil part of the cutout to enable quick reworking. The new cutout must then be re-cut and saved.

Selecting *REWORK* when titles are displayed, will show the size of pictures and cutouts in lines and pixels.

resize

This function enables images of non-standard aspect, for example an image created on Paintbox HD (High Definition), to be manipulated during transition into the system.

When selected, further boxes *CROP* and *FIT* are displayed, one of which will be highlighted (pink). Press and de-select the highlighted box to produce the further functions for magnify and position on the x and y axes. Using the numeric pad and the *INC* and *DEC* functions, *CROP*, *X/Y MAGN* and *X/Y POS* can be applied, or simply select *FIT* to fit in frame.

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ingrid

This function uses the primitive (original) cell of the grid (as defined in the *GRAPHICS*, *DEF GRID* menu) to make a window through which an area picture can be seen. With *INGRID* enable in the *LIBRARY* menu, any picture that is selected will be applied to the underlying image through this window.

Initially the top-left corner of the selected picture will be located at the top-left corner of the window. The position of the selected picture can be altered using as follows:

xpos-

This positions the selected picture horizontally within the window. Positive values move the picture to the right and negative values move the picture to the left.

ypos-

This positions the selected picture vertically within the window. Positive values move the picture down and negative values move the picture up.

&fetch

This function is used in conjunction with *INGRID* to fetch and the stick the required portion of the picture displayed through the window on to the background image.

Keep, Lose and Recall

When searching through large numbers of entries (ie more than can be displayed as titles or browse miniatures) the following functions can be used to further sort them until the desired ones are displayed.

keep

Selecting the *KEEP* function allows the marked entries in the current search buffer to be kept while discarding the others.

lose

Selecting the *LOSE* function allows the marked entries in the current search buffer to be discarded while the others are kept.

recall

This function allows the entries lost or kept using *LOSE* or *KEEP* to be recalled, thereby stepping back through the various stages of *KEEP* and *LOSE* to the original search buffer.

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SAVE

Description

The *SAVE* function is used to save items in the system's library. These items include pictures, cutouts, stencils, etc. Selection of *SAVE* displays the menu as shown below. This provides the various features that may be saved in the library. Essentially, the process is similar to *FIND*, as previously described.

PAINTING		find	name											end	
GRAPHICS		save	types	picture	A	B	C	D	E	F	G	H	I	J	upper
EFFECTS		recall	owner	stencil	K	L	M	N	O	P	Q	R	S	^	lower
PASTE UP	3D	keep		cutout	T	U	V	W	X	Y	Z	'	'	other	
ANIMATION		lose	categories	keyfrms	↓	↑	space	rubout				,	.	clear	
LIBRARY				picture	local	shared	net	exch	inc	dec					

Application

The combination of *SAVE*, followed by *NAME* and *PICTURE*, *STENCIL*, *CUTOUT* or *KEYFRMS* allows the specified item type to be saved. The required name can be entered via the menu keypanel or the keyboard.

Save Name

Press *SAVE* and the menu changes as shown above. This displays the various features that may be saved in the library. Essentially, the process is similar to *FIND*, as previously described.

Press *SAVE*, then *NAME* and if known, select the type i.e; *PICTURE*.

Use the soft keyboard to title the file.

Press *END* to confirm.

If a disk is full, the prompt 'NO SPACE' will appear. If a disk is write protected 'PROTECTED' will appear.

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All other features (with the exception of text fonts, see below) are 'saved' in the same way.

stencil

Used to save stencils.

cutout

Used to save cutouts.

keyfrms

Used to save
keyframes

The following boxes appear in the *SAVE - NAME* menu. These boxes represent the disks on to which graphics items can be written as part of the *SAVE* process. The boxes match those of the 'disk block' in the Full Page menu.

local

This box represents all of the disks (not including the Magneto Optical disk) that are physically connected to the Mainframe. These disks are only accessible to the user of the Mainframe. The actual 'local disk' to be used is enabled using the *LOCAL* box in the 'disk block' of the Full Page menu.

shared

This box represents all of the disks connected via a Shared User Bus. These disks are only accessible to users on the Shared User Bus. The actual 'shared disk' to be used is enabled using the *SHARED* box in 'disk block' of the Full Page menu 'disk block'.

net

This box represents all of the disks that are only available as part of Picturernet. These disks may be accessible to all users of the Picturernet. The actual 'network disk' to be used is enabled using the *NET* box in the 'disk block' of the Full Page menu.

exch

This box represents all Exchangeable disks (ie Magneto Optical disks) that are connected to the system; both locally and via Picturernet. The actual 'Exchangeable disk' to be used is enabled using the *EXCH* box in the 'disk block' of the Full Page menu.

Only one individual disk (as defined by a single *WRITE* box being enable in the 'disk block' of the Full Page menu) from the above types can be used to save graphic items. This is represented by the appropriate box being pink.

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Save Types

PAINTING	find	name	group	any	palette	logo	end
GRAPHICS	save	types	picture	grid	cameo	col curves	
EFFECTS	recall	owner	stencil	cells			
PASTE UP	3D	keep		cutout	sequence		
ANIMATION		lose	categories	keyfrms	text font		
LIBRARY				picture			

The *TYPES* menu allows the file to be saved as the selected 'type'. The four most common types are listed to the right of this box to enable quick access. When *TYPES* is active the following boxes are displayed, as illustrated below:

group

The *GROUP* box allows various combinations of files to be saved with the same title e.g; pictures, grids and cells. If it is desired to save a group of features under the same title first ensure that the relevant items are present.

picture

This allows picture files to be saved.

stencil

This allows stencil files to be saved.

cutout

This allows cutout files to be saved.

keyfrms

This allows the currently used keyframes to be saved. Keyframes are generated using the systems *PASTEUP - 3D* menu.

sequence

This allows the currently used sequence to be saved. Sequences are generated using system's *ANIMATION SEQUENCE* menu.

palette

This allows the currently displayed palette to be saved.

grid

This allows the currently used grid to be saved.

cells

This allows the currently used cells to be saved. Cells are generated using system's *ANIMATION CELL* menu.

logo

This allows logo files to be saved. A logo file is a stencil-only format used by the Quantel Cypher.

cameo

This allows cameo files to be saved. A cameo file is a cutout file used by the Quantel Cypher.

stack

This allows Cell stacks created within the *ANIMATION CELL* menu to be saved.

col curve

This allows Colour Curves created within the *EFFECTS COLOUR FETTL* menu to be saved.

Note: Whichever *CUTOOUT*, *STENCIL*, etc was last in use will be the one placed in the library, even if not displayed at the time.

Note: The displayed soft keyboard expresses the alphabet as ABCD etc. This may be changed to QWERTY format, if desired (see the chapter 'Setup Menu' for details).

The separate mechanical keyboard may be used as well as, or instead of, the displayed soft keyboard as you wish, dependent on personal preference or agreed studio procedures. On this unit, <RETURN> is the equivalent of *END* on the displayed soft keyboard.

CHAPTER 8
FULL PAGE MENU

♦ FULL PAGE

HARRIET

FULL PAGE OVERVIEW

FULL PAGE OVERVIEW

Description

Pressing a major system function twice (e.g; *PAINTING*) displays the system's Full Page menu. The menu is divided into two parts; the top part provides the system's Identification Bar and the line below shows the system's Disk Status menus; the bottom part accesses the system's setup and configuration menus

Quantel Harriet V4 - 00		Serial number 00010566		14 - Feb -1992 10:30	
local	local disks	read	write		
net	picturenet	read	write		
shared	shared disk	read	write		
each		read	write	ready	
PAINTING	artist	live video	rgb/yuv	field2 dom	
GRAPHICS	configure	out	live key	create pal	
EFFECTS	video in	out		restore pal	
PASTE UP	3D	system			
ANIMATION	disk	auto fetch			
LIBRARY		auto title			

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System Identification Block

Quantel Harriet V4.00

This blue box of the system identification bar shows the system's software version.

Serial Number

This blue box of the system identification bar shows the system's serial number.

14-Jun-1991

10:35

This blue box of the system identification bar shows the date and time setup on the system.

Disk Block

The top part of the Full Page menu indicates the current configuration and setup of the system's disks. There are four types of disks recognised by the system; these are 'local disks', 'network disks', 'shared disks' and 'exchangable disks'.

local	local disks	read	write	
net	picturenet	read	write	
shared	shared disk	read	write	
exch		read	write	ready

local

This blue box represents all of the disks (not including the Magneto Optical disk) that are physically connected to the Mainframe. These disks are only accessible to the user of the Mainframe. The actual 'local disks' to be used are enabled by selecting the *LOCAL* box and individually read and write enabling them.

FULL PAGE OVERVIEW

shared

This blue box represents all of the disks connected via a Shared User Bus. These disks are only accessible to users on the Shared User Bus. The actual 'shared disks' to be used are enabled selecting the *SHARED* box and individually read and write enabling them..

net

This blue box represents all of the disks that are only available as part of Picturenet. These disk may be accessible to all users of the Picturenet. The actual 'network disks' to be used are enabled by selecting the *NET* box and individually read and write enabling them..

exch

This blue box represents all Exchangeable disks (ie Magneto Optical disks) that are connected to the system; both locally and via Picturenet. The actual 'Exchangeable disks' to be used are enabled by selecting the *EXCH* box and individually read and write enabling them..

read

This box represents the 'read status' of all of the disks in the type. When these boxes are pink the disks can be searched (read), when they are grey (disabled) they cannot be read and when they are blue in means that not all of the disks in the Full Page menu are read enabled.

This box of the disk status line, when on, allows pictures, cutouts, stencils, etc., to be found (read) on the disk using the *LIBRARY-FIND* menus.

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write

This box represents the 'write status' of all of the disks in the type. When this box is pink, items are saved to all of the disks in proportion to the size of the disks. For example on a system that has a 500Mbyte disk and a 2Gbyte disk; if 5 pictures are saved, 1 will go to the 500Mbyte disk and 4 will go to the 2Gbyte disk.

Individual disks can be 'write enabled' to direct items to specific disks; represented by this box being blue and the actual disk *WRITE* box being pink.

This box of the disk status line, when on, allows pictures, cutouts, stencils, etc., to be saved (written) on the disk using the *LIBRARY-SAVE* menus.



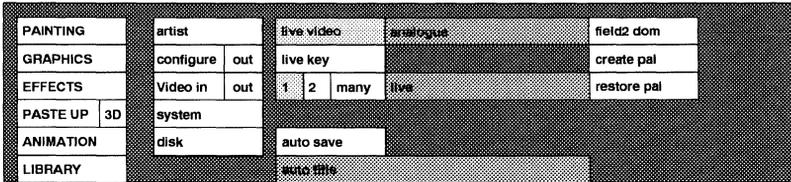
ready

This blue box indicates that the disk is operational and ready for use. If this box is pressed it will display the percentage of disk space available.

FULL PAGE OVERVIEW

Full Page Menus

To operate the main functions of the Full Page Menu, the major menu boxes, which form the bottom part of the Full Page menu, are available for accessing the system's setup and configuration facilities.



artist

This major menu is intended for the artist to use in order to setup user (personal) preferences.

configure

out

The *CONFIGURE* menu is used to configure the system's serial ports for use with various other equipment.

The *OUT* menu is used to configure the system's video outputs for use as 'Main', 'Preview' or 'Key'.

video in

out

This *VIDEO IN* menu is used to adjust the system's video inputs. The *OUT* menu is used to adjust the system's video outputs.

system

This menu is used to load new software, fonts and brushes onto the system.

disk

This menu is used to format and initialise the system's magnetic disk media.

FULL PAGE

HARRIET

live video

The menu above appears if all major setup menus are disabled and *LIVE VIDEO* is selected. This selects the required input source, either *RGB SOURCE*, *DIGITAL A* or *DIGITAL B*, swipe sideways to view video feed. To freeze a frame tap down. To release swipe sideways and reveal full page menu then swipe sideways a second time to view feed. *LIVE VIDEO* offers 1, 2 or *MANY* frames of averaging for improved picture quality and effects.

1

With 1 set, a new picture will be grabbed each time the pen is tapped down.

2

With 2 set, an average of 2 frames (with one frame gap in PAL) is made.

many

With *MANY* set, an average is made of new frames each time the pen is tapped down.

The frame averaging helps eliminate cross colour frame coded sources and reduce noise - provided that the input does not change. If it does, a trail effect is produced.

live

This blue box alternates between *LIVE* and *FROZEN* when selected, and controls the input video source.

FULL PAGE OVERVIEW

analogue

The *ANALOGUE* function selects the rgb/yuv video input for use as the 'live video' source. This function automatically selects 'SYNC IN' for the input locking reference.

digital A

This *DIGITAL A* function selects the CCIR 601 digital video input ("I/P A" on mark 4 systems and "DIGITAL A IN" on mark 1, 2 and 3 systems) for use as the 'live video' source. This function automatically selects 'DIGITAL A IN' for the input locking reference.

digital B

This *DIGITAL B* function selects the CCIR 601 digital video input ("I/P B on mark 4 systems and "DIGITAL B IN" on mark 1, 2 and 3 systems) for use as the 'live video' source. This function automatically selects 'DIGITAL B IN' for the input locking reference.

auto save

This function allows pictures to be saved automatically on to disk without having to use the *LIBRARY-SAVE* menus. The pictures saved in this manner are given the description previously setup using the *AUTO TITLE* function with a suffix number (001 for the first picture, 002 for the second, and so on) starting with the number in the green box next to *AUTO SAVE*. Pictures saved in this way can be found using the *LIBRARY-FIND* menu or be recovered using the *AUTO FETCH* function.

Tap down to store a desired frame, wait while the picture is stored on disk, then the picture will become live allowing another frame to be stored, continue this process until the required number of frames have been grabbed.

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Live Key

When selected, this function allows various input keys to be used by the system. Note that live key can be used, independently of live input. The selection of the *LIVE KEY* box provides the following further menu functions.

	live video	rgb/uv	field2 dom
out	live key	analogue	analogue key
	1 2 many	live	digital A
			digital B
	auto save		
	auto title		expand key

analogue key

This function selects the linear key generated by the luminance component of the "KEY IN" signal for use in 'live key' operations.

digital A

This function selects the linear key generated by the luminance component of the "I/P A" data ("DIGITAL A IN" on mark 1, 2 and 3 systems) for use in 'live key' operations.

digital B

This function selects the linear key generated by the luminance component of the "I/P B" data ("DIGITAL B IN" on mark 1, 2 and 3 systems) for use in 'live key' operations.

expand key

This function expands the input digital key (digital A or digital B) from its normal video range (black = 16 to white = 235) to the key range (black = 0 to white = 255). This is used to convert a digital video level source into a key source, stopping stencil bleeding.

FULL PAGE OVERVIEW

auto save

This function allows stencils to be saved automatically on to disk without having to use the *LIBRARY-SAVE* menus. The stencils saved in this manner are given the description previously setup using the *AUTO TITLE* function with a suffix number (001 for the first stencil, 002 for the second, and so on) starting with the number in the green box next to *AUTO SAVE*. Stencils saved in this way can be found using the *LIBRARY-FIND* menu or be recovered using the *AUTO FETCH* function.

Tap down to store a desired frame, wait while the stencil is stored on disk, then the key will become live allowing another frame to be stored, continue this process until the required number of frames have been grabbed.

auto fetch

This function allows pictures saved on disk using the *AUTO SAVE* function to be recovered starting with picture number entered in the green box next to *AUTO FETCH*. Select *AUTO TITLE* and enter the same picture title as those saved then select *END*.

Swipe sideways and press down centre of screen to bring successive pictures into view. This process can also be combined with sequence if it is required that the cursor be invisible.

auto title

This function allows the picture title used with the *AUTO SAVE* function to be entered via a soft keyboard. Type the title required then select *END*. The title used can be up to 15 characters long.

field2 dom

This function selects the system's dominant input field. When this box is enabled field 2 is dominant.

HARRIET

create pal

Select *CREATE PAL* and swipe off. The picture and palette area are now displayed and a yellow rectangular cursor panel is controlled by the stylus. Press down in the picture and the area defined by the cursor is deposited in the palette, forming a new one.

restore pal

As it is possible to over write the standard primary colour boxes in the palette by dropping in mixed colours, a *RESTORE PALETTE* facility is provided. Selection reinstates the standard colour display, but leaves the mixing area etc., untouched.

ARTIST

Description

This major menu is intended for the artist to use in order to setup user (personal) preferences.

PAINTING		artist		cursor on	safe area	cyp cut limit
GRAPHICS		configure	out	confirm on	5%	
EFFECTS		video in	out	qwerty	statistics	
PASTE UP	3D	system		menu top	% scaling	
ANIMATION		disk		stripey string	1% to draw	
LIBRARY					40% to press	

FULL PAGE

Operation

When this menu is selected the following functions are available:

cursor on

An on/off switch for the cursor. Some functions benefit from not having the cursor displayed as you draw. Note that when 'off', the cursor will show when the pen is in proximity, but disappears as soon as pressure is applied.

confirm

A large number of menu commands require the additional *CONFIRM* signal. This may be switched off, if required.

qwerty

Normally, the displayed, or 'soft' keyboards for library and text selection are expressed alphabetically, i.e; ABCD etc. Selection of QWERTY will alter the display to typewriter format, if preferred.

HARRIET

menu top

Occasionally there is some benefit to be derived from displaying the menus at the top rather than the bottom of the screen, e.g; selecting an area to be magnified near the foot of the picture. This can also be done by swiping off at the top.

stripey string

This function displays the 'stripey string' in the *PASTEUP - 3D* menu when keyframes have been generated.

statistics

This function turns on the statistics bar at the bottom of the screen, displaying the horizontal and vertical picture co-ordinates, etc.

pixel scaling

% Scaling

These functions determine the units of measurement used as part of the Statistics facilities.

10% to draw

This function sets the pen pressure at which a stencil is drawn. The range is 1% to 100%

40% to press

This function sets the pen pressure at which a menu box is activated. The range is 40% to 100%.

cyp cut limit

This function allows the cutout size to be indicated on the box cursor, by its change from yellow to red when the Cypher cutout size is exceeded. When this box is selected, the *MAX LIMIT* function is displayed.

safe area

This function displays a safe working area, enclosed within a yellow box cursor. This can be set between 0% and 50%.

CONFIGURE

Description

This menu is used to configure the system's video inputs/outputs and serial ports A, B and C for use with other equipment. The facilities are as follows.

PAINTING		artist		ramcorder ser C dig B		no printer	
GRAPHICS		configure	out	vtr ser B rgb/yuv			
EFFECTS		video in	out				
PASTEUP	3D	system					
ANIMATION		disk					
LIBRARY							

Operation

ramcorder ser C dig B

Selecting the *RAMCORDER* function allows Harriet's serial and video connections to the Ramcorder to be configured.

printer

Selecting this function allows the directory information (when the *LIBRARY* menu is accessed) to be routed to a printer or VDU connected to serial port A, B or C at 300, 600, 1200, 4800, 9600 or 38400 baud rate.

vtr ser B rgb/yuv

Selecting the *VTR* function allows the Mainframe's serial and video connections to a VTR to be configured.

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OUT

Description

The functions that appear when the *OUT* menu is selected, correspond to the two CCIR 601 digital video outputs (DIGITAL OUT A and DIGITAL OUT B) and the analogue key output. These are indicated by the blue boxes, under which are their corresponding functions.

PAINTING	artist		digital A out	digital B out	key out	
GRAPHICS	configure	out	picture	picture	stencil	inverted
EFFECTS	engineer	out	cutout	cutout	cutout	
PASTE UP	3D	system	key	key		
ANIMATION		disk				
LIBRARY						

FULL PAGE

Operation

digital A out

This blue box indicates the CCIR 601 digital video output "O/P 1" on mark 4 systems and "DIGITAL OUT A" on mark 1, 2 and 3 systems. The boxes below this one determine whether picture, cutout or key information is routed to the output.

digital B out

This blue box indicates the CCIR 601 digital video output "O/P 2" on mark 4 systems and "DIGITAL OUT B" on mark 1, 2 and 3 systems. The boxes below this one determine whether picture, cutout or key information is routed to the output.

key out

This blue box indicates the system's analogue key output. The boxes below this one determine whether stencil or cutout information is routed to the output.

HARRIET

picture

This routes the luminance and chrominance components of the picture currently held in the store to the appropriate digital output connection.

cutout

This routes the luminance and chrominance components of the cutout currently being used to the appropriate digital output. If the cutout function under the blue *KEY OUT* box is selected, the stencil of the cutout is routed to the analogue key output.

key

This routes the key/stencil component of the picture currently held in the main store to the appropriate digital output.

invert key

This function appears when *KEY* is selected and this inverts the key data before it is passed to the appropriate digital output.

stencil

This function, when selected, routes the stencil/key information of the currently displayed picture in the main store to the analogue key output.

inverted

This function, when selected, inverts the picture stencil or cutout information routed to the analogue key output.

VIDEO IN

Description

PAINTING	artist	gain	160	& colour bars
GRAPHICS	configure	out	lum gain	0
EFFECTS	video in	out	chr gain	0
PASTE UP	3D	system	r - y gain	0
ANIMATION	disk		b - y gain	0
LIBRARY			input key	

FULL PAGE

This menu is used to setup the system's input video timings. When any of these functions are selected, the appropriate picture source is displayed on the screen in live video mode and routed to the selected output.

 **Caution:** When any of the *VIDEO IN* menu functions are selected, the currently displayed picture will be over-written.

Operation

The *VIDEO IN* menu is used to setup and align the input video. The values in the green boxes can be adjusted by selecting the function then using the numeric keypad.

gain

This function allows the overall gain of the input analogue video signal to be adjusted.

lum gain

This function allows the Luminance gain of the input video signal to be adjusted.

chr gain

This function allows the U/V gain of the input analogue video signal to be adjusted.

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r-y gain

This function allows the r-y gain of the input analogue video signal to be adjusted.

b-y gain

This function allows the b-y gain of the input analogue video signal to be adjusted.

input key

This menu is used to setup and align the input key signal. The values in the green boxes can be adjusted by selecting the function then using the numeric keypad.

gain

This function allows the input key gain to be adjusted.

black level

This function allows the input key black level to be adjusted.

key delay

This function allows the input key phase to be adjusted with respect to the input video.

black level

This function allows the input video signal black level to be adjusted.

pic phase

This function allows the input video picture phase to be adjusted.

& colour bars

The system will generate half height Quantel Standard colour bars for calibration purposes, over-writing any currently displayed picture:

625: 100% Luminance, 100% Chrominance
525: 100% Luminance, 75% Chrominance

Default Settings

The values in the green boxes can be adjusted using numeric entry. The system's default values are as follows:

Menu	Variable	525	625
VIDEO IN	pic phase	125	125
	gain	103	103
	black level	99	99
	Lum gain	0	0
	chr gain	0	0
	R-Y gain	0	0
	B-Y gain	0	0
INPUT KEY	key delay	60*	60*
	Gain	150	150
	Black Level	99	99

* Must be set to 0 for digital key input applications.

HARRIET

OUT

Description

PAINTING	artist		monitor	h phase	496	colour bars
GRAPHICS	configure	out	pic	syncs on green		
EFFECTS	video in	out	key	4 V syncs		
PASTE UP	3D	system		others		
ANIMATION	disk		output ref			
LIBRARY			vtr setup			

This menu is used to setup the system's output video timings. When any of these functions are selected, the current picture (or stencil) is routed to the selected output.

Operation

monitor

This menu is used to setup the system's video monitor output.

pic

This menu is used to setup and configure the system's RGB/YUV analogue video outputs.

key

This menu is used to setup the system's analogue key output.

others

This menu is used to setup the system's digital video outputs

output ref

This menu allows the system's output locking reference to be selected.

HARRIET

vtr setup

This menu, which appears if the VTR option is configured for use on the system, allows specific VTR adjustments to be made.

Monitor Menu

PAINTING	artist	monitor	h phase	496	colour bars
GRAPHICS	configure	out	pic	syncs on green	
EFFECTS	video in	out	key	4 V syncs	
PASTE UP	3D	system	others		
ANIMATION	disk	output ref			
LIBRARY		vtr setup			

h phase

This function allows the horizontal phase of the system's Monitor output to be adjusted with respect to the system's output locking reference signal.

sync on green

This box, when enabled, places syncs on the Green signal of the Monitor output.

4V syncs

This box sets up the Monitor sync output to 4 Volts instead of the normal 300mV.

Pic Menu

PAINTING	artist		monitor	yuv	rgb	colour bars	
GRAPHICS	configure	out	pic	master gain	0	h phase	496
EFFECTS	video in	out	key	uv gain	0	sync on green	
PASTE UP	3D	system		others	luma fine	0	4 V syncs
ANIMATION	disk		output ref	v (r-y) fine	0	g sync level	
LIBRARY			vtr setup	u (b-y) fine	0		

This menu is used to setup and align the output video signal. The values in the green boxes can be adjusted by selecting the function, then using the numeric keypad.

rgb

yuv

The *RGB* and *YUV* boxes configure the system's analogue video output circuitry for RGB and YUV operation.

Note that the system's analogue video input is configured independently using a link on the Video Input board (2036-71). See chapter 6 of volume 2 for details.

master gain

This function allows the overall output amplitude of the RGB/YUV video to be adjusted (gain adjustment as if a composite video signal). This should be set to give a green/Y signal amplitude of 700mv 625 lines or 714mv 525 line while using digitally generated colour bars.

uv gain

This function allows the chrominance component amplitude of the RGB/YUV video output to be adjusted. This control is a fine adjustment and should be set to give the correct B-Y and R-Y relationship while using digitally generated colour bars.

lum fine

This function allows the Luminance gain of the RGB/YUV output video to be finely adjusted. This should be setup using digitally generated colour bars.

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v (r-y) fine

This function allows the r-y gain of the output analogue video signal to be finely adjusted. This should be setup using digitally generated colour bars and after the *MASTER GAIN* and *UV GAIN* have been adjusted.

u (b-y) fine

This function allows the b-y gain of the input analogue video signal to be finely adjusted. This should be setup using digitally generated colour bars and after the *MASTER GAIN* and *UV GAIN* have been adjusted.

colour bars

The system will generate Quantel Standard colour bars for calibration purposes, over-writing any currently displayed picture. These are set to 100% Luminance, 100% Chrominance.

h phase

This function allows the horizontal phase of the RGB/YUV outputs to be adjusted with respect to the system's locking reference.

sync on green

This box, when enabled, places syncs on the Green/Y signal of the RGB/YUV outputs.

4V syncs

This box sets up the "Sync" output to 4 Volts instead of the default 300mV.

g sync level

This function allows the amplitude of green sync to be adjusted.

Key Menu

PAINTING	artist		monitor	master gain 0	key bars
GRAPHICS	configure	out	pic	luma fine 0	key external
EFFECTS	video in	out	key	rescale	
PASTE UP	3D	system	others	hph offset 4560	
ANIMATION	disk		output ref	sync on key	
LIBRARY			vtr setup	sync level	

This menu is used to setup and align the output key signals. The output key corresponds directly to the currently used stencil. The values in the green boxes can be adjusted by selecting the function then using the numeric keypad.

master gain

This function allows the analogue output key amplitude to be adjusted. This function is normally preset to give a 700mv (625 lines) or 714mv (525 lines) level using digitally generated *KEY BARS* (or using 100% stencil).

fine gain

This function allows the amplitude of the analogue key output to be finely adjusted. This should be setup using digitally generated *KEY BARS* and after the *MASTER GAIN* has been adjusted.

rescale

This function rescales the key output signal so that a larger dynamic range is used.

hph offset

This function allows the analogue output key to be delayed or advanced with respect to the system's video output.

sync on key

This box, when enabled, places syncs on the output analogue key.

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HARRIET

sync level

This function allows the amplitude of the key sync pulse to be adjusted.

key bars

The system will generate Quantel Standard monochrome bars for calibration purposes, over-writing any currently displayed stencil. These are set to 100% Luminance.

key external

This box should be enabled when the system's outputs are to be keyed using a downstream keyer. This function disables the system's internal keying mechanism so that double keying of cutouts and other graphics items does not occur.

Others Menu

PAINTING		artist	monitor	front porch	2	colour bars
GRAPHICS		configure	out pic	back porch	2	
EFFECTS		video in	out key	digital hph	4370	
PASTE UP	3D	system	others			
ANIMATION		disk	output ref			
LIBRARY			vtr setup			

back porch

This function allows the output video 'back porch' timing to be adjusted.

front porch

This function allows the output video 'front porch' timing to be adjusted.

digital hph

This function allows the horizontal phase of the digital outputs to be adjusted with respect to the system's locking reference.

Locking Reference

PAINTING		artist		monitor	free run
GRAPHICS		configure	out	pic	output ref
EFFECTS		video in	out	key	
PASTE UP	3D	system		others	
ANIMATION		disk		output ref	
LIBRARY				vtr setup	

The blue *FREE RUN / OUTPUT REF* box controls the system's output locking mode:

free run

The *FREE RUN* function allows the system to 'free run', using the system's internal gen lock reference. This mode is normally used for non-studio installations where no locking reference is available.

output ref

The *OUTPUT REF* function takes the system's locking reference from the "REF IN" black and burst signal. This function is normally used in broadcast studio installations.

HARRIET

VTR Setup Menu

PAINTING		artist	monitor	5s play preroll
GRAPHICS		configure	out pic	3s edit preroll
EFFECTS		video in	out key	search single
PASTE UP	3D	system	others	
ANIMATION		disk	output ref	
LIBRARY			vtr setup	

When the *VTR SETUP* box is selected, the following functions are available to control the operation of the VTR connected to Mainframe:

5s play preroll

This function sets the VTR play preroll to the number of seconds set in the box. This should be set normally to 5 seconds depending on the type of VTR.

3s edit preroll

This function sets the VTR edit preroll to n seconds. This should be set normally to 3 seconds depending on the type of VTR.

search single

This mode of operation can be used for some non-recommended VTRs, to force them to always play discrete video frames.

Default Settings

The values in the green boxes can be adjusted using numeric entry. The system's default values are as follows:

Menu	Variable	Default
MONITOR	H phase	4686
PIC	master gain	31
	uv gain	-9
	luma fine	0
	v (r-y) fine	-10
	u (b-y) fine	-15
	H phase	4686
KEY	g sync level	55
	master gain	30
	fine gain	0
	hph offset	4670
OTHERS	sync level	27
	front porch	2
	back porch	2
VTR SETUP	digital hph	4655
	Play preroll	5 Seconds
	Edit preroll	5 Seconds

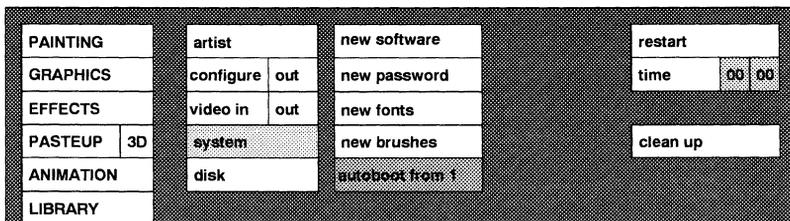
* Must be set to 0 for digital key input applications.

HARRIET

SYSTEM

Description

This menu is used to load system software, text fonts and brushes on to the system disk 0. This menu also provides file 'house keeping' routines.



Operation

From the *SYSTEM* menu the following main functions are available.

new software

This menu allows new system operating software to be loaded from the Magneto Optical disk.

new fonts

This menu allows new fonts to be loaded from Magneto Optical disk.

new brushes

This function allows brushes to be recreated on the system disk. This function should only be used when the brushes on the system disk are no longer available.

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new password

This function enables certain system features, when a password is provided by Quantel, allowing a new password to be entered. When this function is selected the menu keyboard displays enabling text to be entered for a new password.

autoboot from 1

This box indicates the currently selected system operating software boot file (no. 1).

time

This function allows the system clock to be set. The two further green numeric boxes are used to define hours and minutes. When selected, the numeric boxes show the current time, followed by a *CONFIRM - SET TIME* box.

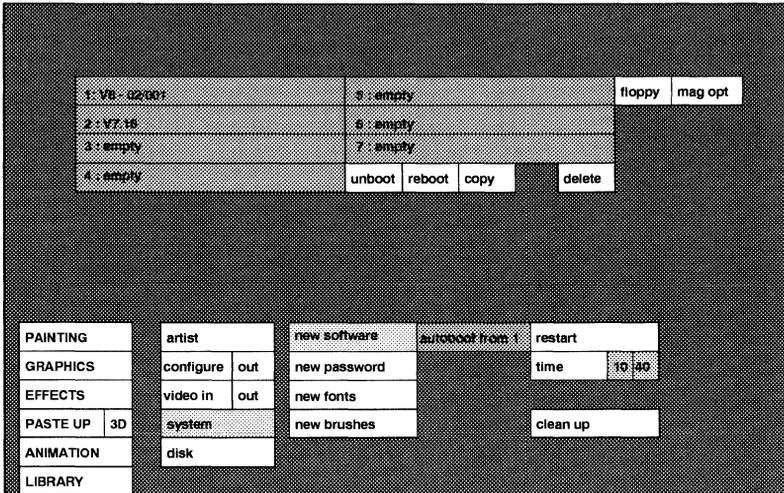
restart

This is used to restart the system after a hard disk has been initialised (not floppy disks) so that the system can start-up with the correct disk configuration. When selected, the box *CONFIRM - RESTART HARRIET* appears.

clean up

This function re-writes the menus, should they become corrupted.

New Software Menu



FULL PAGE

This menu allows new or existing system operating software (supplied on the Magneto Optical disk) to be loaded onto the system disk 0.

The system's operating software is started (booted) from specific boot addresses which are represented on the menu by the blue boot locations boxes "1:" to "7:" which are the Mainframe's internal hard disk.

If the Mainframe is powered up with a system software Magneto Optical disk in the drive, the system will boot using this software. If no system software disk is in the drive, the system will boot using the software in location "1:" on the internal hard disk.

 **Caution: Do not install software on to the Mainframe whilst it is connected to a 'Shared User Bus' as this may cause catastrophic errors.**

HARRIET

floppy

This box is present only for compatibility with previous software versions of the system (pre version V3-00).

When selected this function allows software to be loaded from floppy disk onto the system disk 0, if applicable.

mag opt

This function allows software to be loaded from the Magneto Optical disk onto the system disk 0. Before selection, ensure the disk is inserted into the Magneto Optical disk drive.

When *MAG OPT* is selected the further boxes are displayed *LOAD* and *MAKE*, followed by the two green boxes labelled *SCSI ADDRESS* and *BOOT NUMBER*.

scsi address 3

Setup the SCSI address by selecting the green *SCSI ADDRESS* box. Note that the Disk Status Line at the top of the screen will now also show the SCSI address for the Magneto Optical disk, i.e; 3.0.

Using either the numeric keypad or by pressing the required blue address box (one of 1: to 7:) in the display lines, set the address number. For example; if the Disk Status Line shows SCSI address at 3.0 for the Magneto Optical, then the third blue box or the digit 3 should be selected.

boot number 1

To load software, select the *BOOT NUMBER* green box and set the boot number required, using either the numeric pad or pressing the required blue address box (one of 1: to 7:). This number entry should be that of the residing software address number, from which the software will reboot.

load

Press the *LOAD* box and then press the required blue address box (one of 1: to 7:) for the destination of the loaded software, ensuring the an *EMPTY* address box is selected.

make

This box enables the making of a 'backup' of software that is currently on the hard disk, (i.e; residing at address 1:) by copying it onto the Magneto Optical disk.

unboot

This function allows the system software in location "1:" to be copied to another selected empty location; i.e; *UNBOOT 2:* to copy the software from location "1:" to location "2:". This allows older versions of system software to be kept before a new one is loaded.

reboot

The boot location "1:" is automatically loaded on system power-up and should therefore be the latest version of the software. Older versions can be loaded using the *REBOOT* function; i.e; *REBOOT 2:* to load software from location "2:".

copy

This function allows the software in the selected boot location (for example "1:") to be copied to an empty location determined by the pen.

delete

This function allows the software in any selected location to be removed, displaying *EMPTY*.

HARRIET

1:

Menu lines numbered 1: to 7: show the drive boot address numbers. The entry (i.e; at line 1:) shows the current version of software. Other addresses may be shown as *EMPTY*.

A TO LOAD SOFTWARE

- i Insert the software disk into the Magneto Optical drive and select the *NEW SOFTWARE* menu.
- ii Select the *MAG OPT* function and Select the SCSI address of the Magneto Optical disk (normally 3).
- iii Select the source boot location on the Magneto Optical disk using the *BOOT NUMBER* box.
- iv Select *LOAD* and the empty boot location into which the software is to be loaded (normally 1). The *UNBOOT* function can be used to empty a location by moving the software to another location (eg *UNBOOT 2:*)
- v Use *RESTART* or *BOOT* to start up the new software.

B TO BACKUP SOFTWARE

The software held on the system disk can be backed up on to Magneto Optical disks for security. The system is normally supplied with a backup copy of the system's operating software on Magneto Optical disk, so this procedure should only be required if the disk supplied becomes lost or damaged.

The system's operating software is started (booted) from specific boot addresses on the system disk and are represented on the menu by the blue boot locations boxes "1:" to "7:" or the full page *SYSTEM* menu.

- i Select the *MAG OPT* function and Select the SCSI address of the Magneto Optical disk (normally 3).
- ii Select the destination boot location on the Magneto Optical disk using the *BOOT NUMBER* box (ie 1 to 7).
- iii Select *MAKE* and the source boot location from which the software is to be copied (normally 1).

New Password Function

This allows various software options to be enabled by entering 18 digit passwords. These unique system passwords, supplied by Quantel, are used as follows:

1. To 'enable' system software options once they have been purchased.
2. To extend a time limit on a 'Beta Site' software or rental system.
3. To 'enable' the required fonts to be loaded from the Magneto Optical disk.

When this function is selected the menu keyboard is displayed enabling a new password to be entered.

HARRIET

New Fonts Menu

This menu allows new or existing type fonts to be loaded onto the system disk. The fonts will be loaded from the Magneto Optical disk. Note: With previous software versions of the system, fonts can be loaded from floppy disk, if required. When *NEW FONTS* is selected, the menu appears as illustrated below.

PAINTING	artist		new software		restart	
GRAPHICS	configure	out	new password	f 00000	time	10 40
EFFECTS	video in	out	new fonts	size 85	clean up	
PASTE UP	3D	system	new brushes			
ANIMATION	disk		autoboot from 1			
LIBRARY			confirm - new fonts			

f 00000

This function defines the font library number. When selected, enter the required font number using the numeric pad.

Note: For each new font to be loaded from the Magneto Optical disk, a password must first be entered to 'enable' the new font/s. To enter a password before loading new fonts, refer to the 'New Password Function' previously described and then continue the loading process.

size 0

This function sets the font size to be loaded 35, 85 or 160. When selected, enter the required size using the numeric pad. Note: To load all font sizes enter 0 in the green box.

confirm -

The *NEW FONTS* function requires a confirmation step that the action should be performed. The prompt *CONFIRM - NEW FONTS* is displayed at the bottom of the menu. First ensure your password has been entered to enable the required font and then select this box to finalize the loading of the new font/s.

A TO LOAD NEW FONTS

Fonts are supplied on the system software/font Magneto Optical disk at 35, 85 and 160 line sizes (85 loaded on the system as standard). These sizes relate to the overall size in lines of the characters. These different sizes are supplied to provide the best displayed results at all sizes on screen.

The 6 fonts loaded as standard on the system can be reloaded in the following way. New fonts require that a unique password (supplied by Quantel) is entered as part of the process.

- i Insert the encrypted Magneto Optical disk into the drive.
- ii Type in the required password for the font.
- iii Select the *NEW FONTS* function.
- iv Specify the number of the required font (as supplied with Optical disk and detailed in Volume 2 Chapter 1).
- v Select the required font size (0 for all) 35, 85 or 160 lines. Note that each font size loaded takes up disk picture storage space.
- vi Select the *CONFIRM - NEW FONTS* box.

A blue bar will appear displaying the font currently being loaded and each font character in-turn will be displayed as it is loaded onto the system.

Note: that this operation takes some time, and that the disk drive must not be touched during the process.

- vii When the process is complete the Magneto Optical disk can be removed and returned to its holder for safe keeping.

New Brushes Function

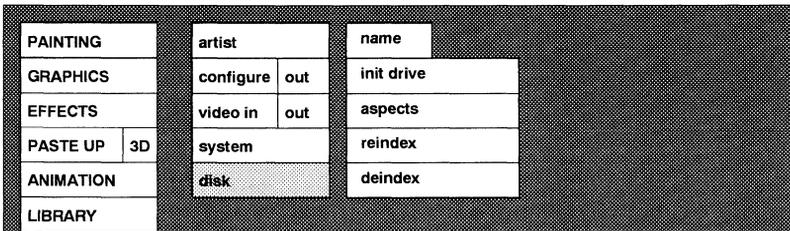
This function allows the system's paint brushes to be re-created on the system disk. This erases any existing brushes before new ones are created. When selected the prompt *CONFIRM - NEW BRUSHES* displays at the bottom of the menu.

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DISK

Description

This menu is used to configure the system's magnetic disk media, including the system's integral Winchester and Magneto Optical disk drives.



FULL PAGE

Operation

From the *DISK* major menu the following function boxes are available.

name

Selecting the *NAME* box displays the keyboard menu, which can now be used to enter the appropriate disk name.

init drive

This menu allows a new disk to be initialised for use as a picture disk.

HARRIET

aspects

This function is used to correct the 625/525 line aspect ratio of pictures loaded from an RSD drive. By selecting *ASPECTS* the prompt box appears at the end of the Disk Status Line, i.e; *PAL*. Press the *PAL* or *NTSC* box on the disk status line and a number of data source functions are displayed.

- NTSC 14.3
- NTSC 13.5
- PAL
- CYPHER
- NO CORRECTION

reindex

The system's 'index filing' function allow fast searching of library entries. For 'index filing' to operate correctly, all disks attached to the system must be indexed using the *REINDEX* function.

deindex

This function allows the 'index filing' system to be disengaged on the currently selected disk.

Name Function

PAINTING	artist		name												end
GRAPHICS	configure	out	init drive	A	B	C	D	E	F	G	H	I	J	upper	
EFFECTS	video in	out	aspects	K	L	M	N	O	P	Q	R	S	^	lower	
PASTE UP	3D	system	reindex	T	U	V	W	X	Y	Z	'	"	other		
ANIMATION	disk	deindex	deindex	↓	↑	space	rubout	clear		
LIBRARY													inc	dec	

Selecting the *NAME* box displays the keyboard menu, which can now be used to enter the appropriate disk name.

Initialise Disk Menu

PAINTING	artist		name			
GRAPHICS	configure	out	init drive	afs	scsi	addr 0
EFFECTS	video in	out	aspects	dfs	rsd	lun 0
PASTE UP	3D	system	reindex	dpb	floppy	
ANIMATION	disk	deindex	gpb			
LIBRARY						confirm - init drive

This menu allows a new disk to be initialised for use as a picture disk.

Caution: Do not use *INIT DRIVE* on the system disk without instruction from Quantel as this will completely destroy the contents of the disk, deleting all system software, brushes, fonts and pictures and preventing the system from operating.

afs

This is the normal file format used for the system disk and other external picture disks.

dfs

This is the Cypher cutout format for the Bernoulli cartridges.

dpb

This is the Paintbox floppy and RSD cartridge picture file format, compatible with 'classic' Paintboxes. Note that DPB 7000/1 micro floppies are not compatible with this format.

gpb

This function allows initialising of Graphic Paintbox compatible Magneto Optical disks (for transfer of cutouts to Paintbox).

scsi

This function allows a SCSI drive to be initialised. When this box is selected, two further boxes appear. These are:

addr

This is the SCSI Address of the drive that is to be initialised.

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lun

This is the Logical Unit Number (always 0) of the selected drive to be initialised.

rds

This function allows an RSD cartridge to be formatted.

floppy

This function allows a floppy disk in the system's integral High Density floppy disk drive to be formatted. Note that this drive is only available on Mark 1 and 2 racks.

A TO INITIALISE A SCSI DISK

When a new SCSI disk is attached to the system, its SCSI address must be set to an unused number between 1 and 6 (0 is allocated for the system's internal Winchester disk).

When the system is powered-up or reset, all drives connected to the system will be indicated in the disk status bar. Un-initialised disk (which are powered-up) will be displayed as *OFFLINE*. This disk may require initialising as follows:

- i Select *DISK - INIT DRIVE*.
- ii Select *SCSI* (drive type).
- iii Select *ADDR* (numeric entry to select the disk's SCSI address).
- iv Select *LUN* (numeric entry to select the disk's logical unit number, i.e; 0).
- v Select *CONFIRM - INIT DRIVE*.

When the drive has been initialised, the disk status bar should display the drive as *ONLINE*.

 **Caution: It is not necessary to format SCSI drives or cartridges. Doing so will lock-up the system for in-excess of 20 minutes.**

Reindex

A DESCRIPTION

The system's 'index filing' function allows fast searching of library entries. For 'index filing' to operate correctly, all disks attached to the system must be indexed using the *REINDEX* function.

B OPERATION

The *REINDEX* function will re-index the disk that is currently read and write enabled in the 'disk block' of the Full Page menu. The process can take between 1 and 5 seconds per picture on disk, depending on the information contained on the 'filecard' and whether the disk is local or shared. During the indexing process, the system **must not be** used and all access to the disk must be restricted.

Note that Magneto Optical disks cannot be re-indexed.

C SHARED DISKS

If a previously unindexed shared disk is to be indexed then all the workstations on a shared user bus or Picturernet system must be restarted so that they are updated (re-indexed).

 **Caution: Do not attempt to read or write a disk which is currently being re-indexed. Before actioning the *REINDEX* function, ensure that the disk is not being accessed.**

HARRIET

Deindex

A OPERATION

This function allows the 'index filing' system to be disengaged on the currently selected disk. This allows disks to be accessed using the basic filing system should the 'index filing' system become inoperable.

The *DEINDEX* function will de-index the disk that is currently read and write enabled in the 'disk block' of the Full Page menu.

Note that prior consultation with Quantel is recommended before actioning the *DEINDEX* function.

B SHARED DISKS

If an indexed shared disk is to be de-indexed then all the workstations on a shared user bus or Picturernet system must be restarted so that they are updated (re-indexed).

 **Caution: Do not attempt to read or write a disk which is currently being de-indexed. Before actioning the *DEINDEX* function, ensure that the disk is not being accessed.**

CHAPTER 9

OPTIONS

HARRIET

PICTURENET/PICTUREBANK

PICTURENET/PICTUREBANK

Description

Picturenet is a simple network allowing Paintboxes, Pictureboxes, Harriets and Cyphers to share common graphic items and disk storage. The Picturenet provides a range of functions that allow large working groups to efficiently share graphic items, on common disks, without the need for media exchange.

Picturebank allows multiple Picturenet networks to be combined and allows login privileges to be applied to users; providing network-wide security. Picturebank also allows additional 'file card' search fields, search of descriptive text, support of slow links, control of multiple Picturenets and area grouping.

When the Mainframe is connected into a Picturenet or Picturebank system, the Full Page menu provides a large number of additional facilities. The information provided in this section is intended to give an operational overview of Picturenet/Picturebank as seen from the 'station'.

Operation

When the Mainframe is connected into a Picturenet, any user can have access to the 'network disks' on the Picturenet. When the Mainframe is connected to a Picturebank system, any user can have access to the 'areas' that are setup within Picturebank. These areas (setup during the network installation process and shown in the Full Page *NET* menu) define working groups that are to share graphic items, and operate as if the 'area' is an extension to the Mainframe's own disk pool. This level of network allows unrestricted access, creation, modification, deletion of shared items as setup using the *NET* and *MAIL* facilities.

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When Picturebank is used to combine Picturenet networks, various levels of access and privilege are provided to network security. These levels are determined by 'owner' login and password access. Note that users without an allocated 'owner name' are given 'default' access, only providing limited access and privileges, which does not require password entry.

For further information refer to the Picturenet/Picturebank documentation.

PICTURENET/PICTUREBANK

Full Page Menu

Quantel Paintbox V8 - 00		Serial number 00010595		14 - Feb - 1992 10:35	
local	local disks	read	write		
net	picturenet	read	write		
shared	shared disks	read	write		
exch		read	write	ready	

PAINTING	artist	name	live video	rgb.y.v	field2 dom
GRAPHICS	configure	out	live key		create pal
EFFECTS	engineer				restore pal
PASTE UP	3D	system			
ANIMATION	disk	net	auto fetch		
LIBRARY			auto title		

OPTIONS

local

This blue box represents all of the disks (not including the Magneto Optical disk) that are physically connected to the Mainframe. These disks are only accessible to the user of the Mainframe. The actual 'local disks' to be used are enabled by selecting the *LOCAL* box.

shared

This blue box represents all of the disks connected via a Shared User Bus. These disks are only accessible to users on the Shared User Bus. The actual 'shared disks' to be used are enabled selecting the *SHARED* box.

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net

This blue box represents all of the disks that are only available as part of Picturenet. These disks may be accessible to all users of the Picturenet. The actual 'network disks' to be used are enabled by selecting the *NET* box.

exch

This blue box represents all Exchangeable disks (ie Magneto Optical disks) that are connected to the system; both locally and via Picturenet. The actual 'Exchangeable disks' to be used are enabled by selecting the *EXCH* box.

read

This box represents the 'read status' of all of the disks in the type. When these boxes are pink the disks can be searched (read), when they are grey (disabled) they cannot be read and when they are blue in means that not all of the disks in the Full Page menu are read enabled.

write

This box represents the 'write status' of all of the disks in the type. When this box is pink, items are saved to all of the disks in proportion to the size of the disks. For example on a system that has a 500Mbyte disk and a 2Gbyte disk; if 5 pictures are saved, 1 will go to the 500Mbyte disk and 4 will go to the 2Gbyte disk.

Individual disks can be 'write enabled' to direct items to specific disks; represented by this box being blue and the actual disk *WRITE* box being pink.

name

This menu gives login access to the facilities of the Picturebank. The facilities, access level and privileges being determined by the 'System manager' (user with 'system' owner name and password).

PICTURENET/PICTUREBANK

net

This menu allows the local Picturemail operation of the system to be setup so that graphic items can be sent to, and received from, 'areas' in the Picturenet/Picturebank network.

OPTIONS

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Name

This menu only appears if the Mainframe is installed into a Picturebank system and gives login access to the facilities of the Picturebank. The facilities, access level and privileges being determined by the user with 'System Manager' privileges.

PAINTING	artist	name	SYSTEM_										end		
GRAPHICS	configure	out	owner	A	B	C	D	E	F	G	H	I	J	upper	
EFFECTS	engineer		owner pass	K	L	M	N	O	P	Q	R	S	^	lower	
PASTE UP	3D	system		manage	T	U	V	W	X	Y	Z	'	'	other	
ANIMATION	disk	net		↓	↑	space	rubout		,	.			clear		
LIBRARY			SYSTEM											inc	dec

login

This function allows the user to log in to the Picturebank as an 'owner'. When the *LOGIN* function is selected, a keyboard appears allowing the 'owner name' to be entered. The user will then be prompted for the password, if one is required.

owner pass

This function, which is only available if the 'owner' has the 'own password' privilege, allows a user to change the password of an 'owner'. Selecting this function prompts the user to type their old password followed by the new one, and finally to verify the new password.

manage

This function, which is only available if the 'owner' has the 'manage' privilege, allows a user to manage the list of 'owners' by controlling the privileges and access given to them. The 'manage' privilege is normally only given to the 'system manager' (user with 'system' owner name and password), but in large networks more than one 'owner' may have this privilege.

For further information refer to the Picturenet/Picturebank documentation.

PICTURENET/PICTUREBANK

Net

This menu allows the local 'Picturemail' operation of the system to be setup so that graphic items can be sent to, and received from, 'areas' in the Picturenet/Picturebank network (as displayed).

Quantel Paintbox V8 - 01		Serial number 00110305		14 - Feb - 1992 10:35	
area 1	local area	GRAPHICS AREA			
20	local net	Paintbox 2 (Graphics)	mail disabled	from any station	
area 1	5 stations	GRAPHICS AREA		ethernet	read, write, mail
1	Controller	Picturenet Controller		mail disabled	
5	user	Picturebox 70366		mail disabled	
10	user	Harnet 12304		mail disabled	
22	user	Picturebox/Paintbox SUB		1000 to 1100	
29	Cypher	Cypher Picturenet IP		mail disabled	

PAINTING	artist	name			
GRAPHICS	configure	out			
EFFECTS	engineer			any area	any user
PASTE UP 3D	system			any user	any user
ANIMATION	disk	net	mail	ig 0	ni 0 disabled
LIBRARY				confirm - setup mail	

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The blue boxes directly below the 'title block' detail the 'station' itself, indicating the 'area' number 'area' description, 'station' number, 'station' description, and current mail setup.

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The 'areas' setup in Picturenet are displayed below the 'station block' and the 'stations' they consist of can be displayed by pressing the appropriate grey area box. The following boxes are displayed.

area 1

This pink box indicates the area that is being displayed. The boxes in this column indicate the 'station number'

5 stations

This blue box indicates the number of stations in the 'area'. The boxes in this column indicate the type of 'station':

Controller = Picturenet Controller
User = Picturebox, Paintbox etc
Cypher = Cypher Picturenet I/F

GRAPHICS AREA

The column of boxes, headed by the area title, details the type of station and any additional information. Pressing these boxes will give the ethernet address for the station.

mail disabled

These boxes indicate that the mail facility of the specific station has been disabled, thus preventing mail being sent to it.

1000 to 1100

The boxes with number ranges indicate that pictures and cutouts, numbered accordingly, can be mailed to the selected station. Enabling one of these boxes (box turned pink) selects the destination station for mail operations performed in the *LIBRARY* and *PASTEUP* menus.

In this example pictures and cutouts that are sent to the selected station will automatically be numbered 1000, 1001, 1002, etc to 1100.

PICTURENET/PICTUREBANK

mail

This box allows the number range for receiving items from other 'stations'.

lo

This green box sets the first number in the number range. Pictures and cutouts received by the 'station', when automatically numbered, will not precede this value.

hi

This green box sets the last number in the number range. Pictures and cutouts received by the 'station', when automatically numbered, will not exceed this value.

disabled

This box, when selected, stops mail being sent by other 'stations'. When this box is selected, the *MAIL DISABLED* box is shown next to the 'station' in the *NET* menu.

any area

This green box determines which specific 'area' can send mail to the 'station'. Selecting this box will display a numeric pad allowing the 'area' number to be entered.

any area

This box sets the green box to *ANY AREA*.

any user

This green box determines which specific user (by 'station number') can send mail to the 'station'. Selecting this box will display a numeric pad allowing the appropriate 'station' number to be entered.

any user

This box sets the green box to *ANY USER*.

HARRIET

System - User Fields

The Picturebank system allows 4 user-defined fields to be setup as part of the 'filecard' management of library entries. The 'user fields' are defined by the 'system manager' (user with 'system' owner name or a user with the 'manage' privilege) and are global; affecting all systems connected to Picturebank.

There are four types of field that can be configured as 'numeric', 'textual', 'date' or 'unspecified'.

Engineer

When the Mainframe is connected into Picturebank system, access the Mainframe's *ENGINEER* menu is restricted to the user logged in as 'engineer'.

APPENDIX A

GLOSSARY

HARRIET

GLOSSARY OF TERMS

GLOSSARY OF TERMS

Airbrush	This brush simulates the effect produced by an Airbrush.
Animation	The system provides Cell Animation facilities which can be used to produce real time Animation sequences.
Areas	These are physically configured groups of 'stations', usually covering a common working area, within a Picturenet system. These 'areas' are determined at network installation of Picturebank. Each area is individually numbered to provide a unique destination address for the transfer of graphic items using Picturemail.
Background Clip	Harriet's Ramcorder is normally divided into two clips, the 'Background Clip' and the 'Result Clip'. The 'Background Clip' is used to hold a clip before it is processed and stored in the 'Result Clip'.
Blur	This brush when selected softens the painted area giving soft focus effects. Note this is not reversible.
Browse	This allows the contents of the Library to be displayed, 12 pictures at a time.
Brush	This is the selected style of brush; Airbrush, Paint, Chalk etc.
Canvas	This is the area of the screen on which the picture is displayed and drawn.
Card	This is a combination of a browse miniature and all information corresponding to a selected picture.
Chalk	This brush produces an irregular chalk-like effect when selected.

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Colour Map	This facility, when selected applies the colours in the palette mixing area to the luminance values of the picture; the colours placed in the left hand part of the palette area corresponding to low values of luminance.
Corner Pinning	This is the method by which the rectangular extents of a cutout can be positioned by its four corners.
Crisp	This is a heightened version of smooth.
Cursor	This is the cross shape symbol indicating the position of the pen over the tablet and screen.
Cutout	This is a portion of a picture that has been masked by a stencil/key and then separated from its background.
Effects	The Effects menu provides various special processes such as mosaic, colour map, overlay and field mode.
Field mode	Field mode allows painting on either field 1 or field 2, and is used to remove flicker in any area of the picture caused by movement between the two fields.
Filecard	This is a combination of a browse miniature and all information corresponding to a selected picture.
Fill	This allows an enclosed area to be filled with a selected colour.
Flip	This is a mirror inversion of a cutout in the x axis of the screen.
Graduate	This allows solid, rectangles to be graduated between any two colours or shade from one end to another.
Graphics	The Graphic facilities (square, circles, rectangles, ellipses etc.) are provided by the system and accessed through the Graphics Menu.
Grid	This allows lines, rectangles, circles to be accurately painted upon the screen in the selected grid position; allowing the production of accurate geometric designs.

GLOSSARY OF TERMS

Illegal Colours	These are colours consisting of 'U' or 'V' components on their own.
Index Filing	The system's 'index filing' function allow fast searching of library entries. For 'index filing' to operate correctly, all disks attached to the system must be indexed using the <i>REINDEX</i> function.
In Timecode	The 'In Timecode' is used to specify the start timecode of a video clip to be extracted from or inserted onto VTR tape. The clip defined by the 'In Timecode' and the 'Out Timecode' will include the first frame (defined as the 'In Timecode').
Insert Edits	The system's VTR control facilities allow direct timecode controlled edits of video clips between the system and a VTR. The 'In Timecode' and 'Out Timecode' for the 'Insert Edit' are setup using the system, then the corresponding 'Result Clip' can be inserted onto tape into this timecode slot.
Key	See Stencil.
Keyframes	Keyframes are used to control the path and evolution of an effect through the 'Background Clip'; the Keyframes being used to coincide with events is the moving video.
Keyframe Effect	The system's 3D Paste Up facilities allow a cutout to be manipulated over a number of frames, in conjunction with the 'Background Clip' in the Ramcorder. Keyframes are used to control the path of the effect through the 'Background Clip'; the Keyframes coinciding with events is the moving video.
Keyframe Marker	When Keyframe mode is used, the path of the 'Keyframe Effect' is displayed as a line (Stripey String) with markers in the positions where 'Keyframes' have been inserted. These markers, when selected, can be used to edit the keyframe's settings.

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Key-word	A key-word is any word that can be used to search through the library to find a group of related pictures. For example the word "Wimbledon" if used as part of a search would find all picture entries with Wimbledon in their titles.
Library	The Library is the collective term for the magnetic media used for the storage and retrieval of pictures, cutouts, stencils, sequences, stacks etc.
Linear Keying	This is the selective overlaying of one video signal over another, the ratio of foreground to background at any point being determined on a linear scale by a control signal. This form of keying provides the best possible anti-aliased edges and is essential for realistic semi-transparent effects.
Lines	The system provides the facility to draw lines; freehand, straight and connected.
Live Video	This operation of system allows a live input picture passed to the output, and stored as selected frames.
Local Disk	A 'Local Disk' is a the internal SCSI system disk within the Paintbox. This disk is only accessible by the Paintbox itself and not accessible to any user of a 'Shared User Bus' or Picturenet.
Menus	These are the means by which the various functions available are selected. The menus appear at the bottom (or top) of the screen when the pen is swiped down the tablet, menu functions highlighted in pink indicate the selected functions.
Mosaic	This converts the picture into tiles of fixed colour, whose size is determined by the values in the H and V boxes.
Out Timecode	The 'Out Timecode' is used to specify the stop timecode when a video clip is to be extracted from or inserted onto VTR tape. The clip defined by the 'In Timecode' and the 'Out Timecode' will not include the last frame (defined as the 'Out Timecode').

GLOSSARY OF TERMS

Overlay	Overlay is the process where by the luminance component of the picture is used to generate a stencil with opacity matching the range of luminance values of the picture.
Owner	<p>Within a Picturebank system each individual user is allocated a unique 'owner' name, password access and privileges. These are setup and maintained by the 'system manager' who is the user responsible for the administration of the network. There are three special 'owners' with specific privileges:</p> <p>System: This 'owner', normally the 'system manager' can setup 'owners', define their access to items on the network and grant privileges to 'owners'.</p> <p>Engineer: This 'owner', normally the system's engineer, gives access to the engineering setup and configuration to each 'station' on the Picturebank network.</p> <p>Default: This 'owner' provides the default access and privileges to any 'station' user who has not been assigned an 'owner name'. This 'owner' type only allows limited access to the 'area' to which the 'station' belongs.</p>
Paste up	The Paste up facilities allow picture and stencil cutouts and text to be 'cut and pasted'.
Paint	This is the default brush type which simulates an artist's paintbrush.
Palette	This is the area of the screen which is used for selecting and mixing colours.
Picturebank	Picturebank the method by which individual Picturenet systems can be connected together. This is achieved by the use of a device called a 'Picturebank Manager', which also offers 'owner' protection and privileges to graphic items held on Picturenet disks. The Picturebank system also offers the 'Picturemail' facility which allows items to sent, and automatically numbered, from one 'station' to another on the network.

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Picturenet	Picturenet allows a large network of Picturebox, Paintbox, Harriet and Shared User Bus systems to be formed. Up to 30 devices can be supported on a single Picturenet Controller. The devices are linked, via Ethernet to the Picturenet Controller which forms the heart of the system and to which a central pool of disk drives can be connected.
Picturemail	<p>Picturemail is a way of transferring pictures and cutouts from one station on Picturenet to another without the need to go via the Picturenet Controller.</p> <p>Picturemail is similar to the concept of the shared disk in a Shared User Bus system, but extended over Picturenet. An artist or library user at one 'station' can therefore transfer a picture or cutout onto the shared disk of another 'station', and give it a picture number, without user action at the receiving station.</p>
Picture Number	This is a number between 0 and 999 that is given to picture in the system's picture library so that it can be used by the Presenter function.
Pictureport	<p>Pictureport is a high bandwidth SCSI interface that enables a communications gateway to a wide range of design and production equipment.</p> <p>Pictureport operates as a background task within Quantel systems, allowing transparent access to the system's disks by other equipment.</p>
Positional Grid	This is an 8 unit by 6 unit grid imposed on the 4 by 3 aspect ratio of the Television screen. All positional changes, spins and sizing on the 3d menu are made using grid values.
Position Numbers	These are the numbers given to a cutout or reduced size picture which has been saved with positional coordinates using Cut & Paste.

GLOSSARY OF TERMS

Privileges	<p>Within a Picturebank system each 'owner' is allocated certain privileges depending on their role in the use/administration of the network. These are setup and maintained by the 'system manager' (owner System) who has the 'manage privilege'. The privileges are as follows:</p> <p>Manage: allows the set-up of 'owners', their access and their privileges.</p> <p>Own Password: allows an 'owner' to change their own password.</p>
Ramcorder	<p>The Ramcorder is a Random Access store holding 323 PAL (383 NTSC) video frames equivalent to 12 seconds of recorded video. Harriet's Ramcorder is normally divided into two clips, the 'Background Clip' and the 'Result Clip'.</p>
Read Enable	<p>When a disk is 'Read Enabled' pictures, cutouts, key (stencils) and stacks can be found using the system's 'Find' or 'Search' functions.</p>
Rectangles	<p>The system provides the facility to produce rectangles; solid, or outline.</p>
Remote Mode	<p>This is where pictures, cutouts and stacks are obtained from a 'Shared Disk' (ie a 'Shared User Bus' disk).</p>
Result Clip	<p>Harriet's Ramcorder is normally divided into two clips, the 'Background Clip' and the 'Result Clip'. The 'Result Clip' is used to receive and store a processed clip generated using the 'Background Clip' and a 3D manipulated cutout.</p>
Screen Buffer	<p>When a search is made, the titles found are displayed twelve at a time in the 'Screen Buffer'. Entries displayed in this buffer can be in the form of 'Titles', 'Browse Miniatures' or 'Filecards'.</p>
Search	<p>This is the process by which pictures are found in the system's library by 'title string' or 'key-word', date, disk, type etc.</p>

HARRIET

Search Buffer	This is all the titles found in a search process, and can hold details of a number of picture disks. The entries in this buffer can be displayed twelve at a time in the 'Screen Buffer'.
Search Card	This mode of operation can be used to search through the library using any of the fields on the filecard, ie <i>NAME</i> , <i>DATE</i> , <i>DISK</i> , etc.
Sequence	This is a recorded sequence of pen movements/menu selections, used to automate any set of functions.
Shade	This function allows the luminance content of the picture to be changed by a selected palette colour, while the colour content is unchanged.
Shared Disk	A 'Shared Disk' is a SCSI disk connected to the 'Shared User Bus' and is accessible to any user on the bus.
Shared User Bus	Quantel's 'Shared User Bus' provides the ideal system for integrating two or three closely related users. The system allows graphics to be exchanged quickly between devices on the integral SCSI expansion bus by the use of 'Shared Disks'.
Smooth	This brush when selected sharpens the painted area giving a sharper effect.
Solid	This selects solid, rectangles, circles and ellipses.
Space Tracks	Space Tracks are the 3D cursors which appear when the 3D Paste Up menu is selected. These indicate the 3-dimensional position of a manipulated cutout in the X, Y and Z axes. The Space Tracks also offer control over the positioning and orientation of the cutout by moving the cursor's stalks and letters.

GLOSSARY OF TERMS

Station	A station can be a Paintbox, Picturebox, Harriet, Cypher or Browse station on a Picturenet. Each station is uniquely numbered with a station number so graphic items can be transferred from one station to another using Picturemail.
Stencil	This facility as with traditional painting methods, allows masking of selected areas of the picture so that paint can be applied without affecting the stencil area. The stencil generated can be solid (no paint through) or opaque, allowing paint through equivalent to the level of opacity.
Stripey String	When Keyframe mode is used, the path of the 'Evolving Effect' is displayed as a line (Stripey String) with markers in the positions where 'Keyframes' have been inserted. By dragging the 'Stripey String', the path of the 'Evolving Effect' can be modified.
System Disk	<p>The system disk is the internal hard disk that holds the system's operating software. In Harriet this disk is also used to store pictures, cutouts, stencils, sequences and stacks.</p> <p>This disk is only accessible by the system itself and is not accessible to any user of a Shared User Bus.</p>
System Manager	The 'system manager' of a Picturebank system is the user, with 'owner' name system, who is responsible for the administration of the network. The 'system manager' can setup 'owners', define their access to items on the network and grant privileges to 'owners'.
Tagging	This is the process by which pictures in the Screen buffer can be marked for processing.
Timecode	The Timecode information produced by a VTR is used by the system to define the exact relationship of any video frame to its position on the VTR tape. The Timecode defines the Hours; Minutes; Seconds; Frames duration of the tape.

HARRIET

Timecode Slot	This is a segment of tape between the 'In Timecode' and the 'Out Timecode'.
Title Buffer	See Search Buffer.
Tumble	This is a mirror inversion of a cutout in the y axis of the screen.
Wash	This function allows the colour content of a picture to be washed over with a selected palette colour, leaving the luminance content unchanged.
Wipe Pic	Wipe picture allows the picture area to be wiped with a colour deposited in the pot.
Write Protect	When a disk is 'Write Protected' it is not possible to record, modify or delete a picture, cutout, key (stencil) or stack on that disk.
Zoom	This function allows the picture to be expanded in increments up to about x32 magnification.

HARRIET
WORKED EXAMPLES

EXAMPLES

HARRIET

RECORD & REPLAY

RECORD & REPLAY

Introduction

The object of this example is to show how video can be recorded and to illustrate the methods of replay available. Video tape recorders are linear and so require a run up and continuous record or play of frames.

Ensure the system is correctly set-up, see section 'Configure' within the Full Page Set-up Menu.

Method

- i Select *ANIMATION* from the main menu and then the *RAMCORDER* box.
- ii Select *BGND* (to ensure the background mode is active).
- iii To access control of the VTR, now select the *VTR* box.
- iv Define the number of frames to be recorded, in this case the first 50 frames, by entering in the timecode boxes from frame *1 TO 50* as follows.
- v At the start of the required clip, select the *IN* timecode box (this will place the *IN* timecode into the box). Jog or play through the video, or use *CUE* (button 2) on the hand unit. At the required end point select the *OUT* timecode box. Use *INC 50* to move forward 50 frames.
- vi Press the *MAKE CLIPS* option box followed by the *VTR TO BGND* box. This makes a background and a result clip of the required length as defined by the *IN* and *OUT* timecodes.
The recording will automatically start and stop at frame 50 (provided no tap down occurs before that point) so that the clip is recorded within the set number of frames (i.e; 1 to 50).
- vii De-select the *VTR* box and play through the recorded clip, using pen control in the picture area (or any of the options on the shuttle bar).

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- viii To replay the recording from 'Result' either set the frame numbers in the play 'from' and 'to' frame boxes to 1 and 50 respectively, or select the *SWAP* option box and begin replay by tapping the pen in the picture area.

Selecting the *SWAP* option swaps the background and result clips and shows the first frame of the clip. Replay will automatically stop at frame 50.

- ix Try the following different combinations for ways of playing the clip.

LOOP

REVERSE

REVERSE - LOOP

BOUNCE

BOUNCE - LOOP

BOUNCE - REVERSE - LOOP

Copying a Clip

- i The following describes the operation of the copy function which copies a clip into a different part of the Ramcorder clip.
- ii Re-assign the *RESULT* area entering the start and end frames at *51 TO 100*.
- iii Then select the *COPY TO RESULT* box.
- iv To begin copying either tap the pen or use *Cue Button* (button No.2) on the hand unit.
- v To see the copied result select *RESULT* and then play, tap the pen in the picture area and view the clip in its new position.

ROSCOPING

ROSCOPING

Introduction

The system provides a fast and easy rotoscoping facility. This example uses the *BUY*, *SELL* and *NEXT* functions to handle frames (or fields).

Method - Sell and Buy

Record 50 frames of video into Harriet (as in example 1). Existing material can be used if preferred. Ensure that neither *RESULT* nor *BGND* boxes are selected (highlighted) then set-up the sell and buy frames as follows:

- i Enter the sell frame number *51* (next to the *SELL* box) and the buy frame number *1* (next to the *BUY* box). Note this assumes that the background clip is from frame 1 to frame 50.
- ii Move to the beginning of the clip (frame 1) either by entering its number (1) in the current frame number box, or selecting the \leftarrow on the shuttle bar.
- iii Buy the frame by selecting the *BUY* function.
- iv Enter the *PAINTING* menu and select the required brush type, size, colour and swipe-off ready to paint.
- v Paint a mark on this first frame. To sell it to Harriet (frame 51) swipe-off and select *ANIMATION*, then the *SELL* box. To buy the frame 2 of the original clip select the *BUY* box.
- vi Re-enter the *PAINTING* menu, swipe-off and paint a mark on the second frame. Return to the animation function by repeating the steps below and continue rotoscoping on the third frame.

ANIMATION, SELL, BUY, PAINTING

Sell and buy the next frames repeating the steps *ANIMATION, SELL, BUY* and return to *PAINTING* for further rotoscoping.

Note: that the *SELL* and *BUY* numbers automatically increment, so that you are continually selling to the next free frame and buying the next available frame.

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Next Function

The *NEXT* function is used to simply replace the selection of *SELL* and *BUY* and automatically actions the next frame.

- i From painting mode return to the *ANIMATION* menu. Select the *NEXT* box. Select the *PAINTING* menu and paint a mark on this frame.
- ii Continue with the menu sequence *ANIMATION*, *NEXT*, *PAINTING*, swipe-off and paint on the next frame.
- iii This time, instead of using the menus to exchange frames use button No. 1 on the hand unit, the same as using the *Next Button*.
- iv Painting can continue immediately without returning to the *ANIMATION* menu and the use of the Hand Unit button handles the frames to make the rotoscoping fast and efficient. This is the usual (and the quickest) method for rotoscoping.
- v Replay the clip, starting from frame 51 and view your rotoscoped frames.

Adding Layers

Having rotoscoped a number of frames and replayed them, a second layer can be added.

- i Use the *SWAP* function to set-up for a second layer. Reset the *SELL* and *BUY* using frame numbers to 51 buy and 1 sell respectively and begin with the current frame number at 1 to set Harriet at the beginning of the clip.
- ii Rotoscope as before adding more paint to the (previously painted) first frame and then continue to rotoscope the *NEXT* frames consecutively.

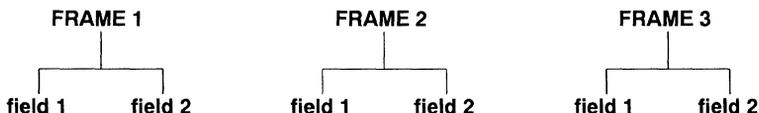
It is because of the selection of *BUY* and *SELL* frame numbers of 51 and 1 that this rotoscoping method keeps the original frames.

Setting the *BUY* and *SELL* to the same number will overwrite the original clip. This mode can be used if the original is not required for further use, and allows twice the amount of working store.

ROTOSCOPING

Field Mode

Working in Field mode, enables access to each of the two fields within each frame, thereby viewing and rotoscoping each field individually as this example describes.



- i Record 50 frames of video (fast moving material is preferable since it will make inter-field flicker more obvious).
- ii Set both of the *SELL* and *BUY* frame numbers to 1.

1	sell
---	------

1	buy
---	-----

- iii To access the first field select the *FIELD* box (if not already highlighted). The two numbered field option boxes appear numbered 1 and 2.
- iv Select the 1 box (for the 1st field) and then select *BUY*.
This brings the 1st field of frame 1 into view.
- v When *BUY* was pressed the 1 and 2 field boxes toggled. Toggle it back to read 1 (for the 1st field).

This sets-up the normal sequence for field rotoscoping. The following steps will use the quickest method to handle the images which is using the *Next Button* (button No. 1) on the hand unit. However, you may choose to use the menu *NEXT* which may enable a better understanding of the field sequence.

- vi Select the *PAINTING* menu and choose the brush type, colour, size, etc. Swipe-off and paint on this 1st field, for example, paint the digit 1 for easy reference later.
- vii Press the *Next Button* (button No. 1) on the hand unit to automatically view the next field (this is the 2nd field of frame 1) and paint a mark, i.e; the digit 2 for easy reference later.

HARRIET

- viii Continue by pressing the *Next Button* and frame 2 appears, displaying the 1st field. Paint a mark on the 1st field, then use the *Next Button* and paint a mark on the 2nd field of frame 2.
- ix Repeat this routine and rotoscope upto frame 10 (or so).

The rotoscoped clip can be viewed in the normal way. Return to the beginning of the clip (frame 1) and *PLAY* (or jog forward frame by frame). If the field box is still active, only the selected field of the frame being viewed will be seen, i.e; field 2 of frame 1.

MOVING CUTOUTS IN REAL-TIME

MOVING CUTOUTS IN REAL-TIME

Introduction

The system has the ability to read and write (play and record) at the same time. This feature enables the addition of live animation. If the process is then repeated, a build-up of multi-layered effects is achieved.

Method

This procedure can be used to quickly mask an unwanted object in a section of live video, adding a cutout to all the frames of the entire clip.

- i Record 50 frames of video, as in the previous examples setting the 'from' and 'to' frame numbers (in the timecode boxes) at *1 TO 50* .
- ii Set result to frames 51 to 100.
- iii Enter the top level menu (i.e; re-select the *ANIMATION* box) and then select the *CONFIGURE* box.
- iv From this menu select *LIVE VIDEO* and then select the required video source, i.e; the *DIGITAL B* option box for video from the Ramcorder.
- v Either make a cutout or select one from the library.
- vi Position the video clip at the beginning, i.e; the current frame number box will show *1* for the first frame.
- vii Go to *PASTEUP* menu and if appropriate use this menu to re-size the cutout, or spin, etc. Then select *LIVE VIDEO*.
- viii Swipe-off and position the cutout in the top right corner of the picture. With the pen tap down to hold the cutout in that position and press the *Cue Button* (button No. 2) on the hand unit.

Harriet simultaneously plays and records the clip, thus adding the cutout to the frames of the entire clip.

HARRIET

- ix The result can now be viewed, select *PLAYOUT RESULT*. This sets the replay clip to the first frame and enables bounce and reverse modes to be selected. Tapping the pen down in the picture area will then play the clip. A second tap of the pen will stop the replay.
- x Providing the result is satisfactory, selecting *SWAP* enables the result to be transferred into the working background which can then be used to build upon.
- xi Continue with the same procedure working in *BGND*, but first reset the clip to the beginning frame and this time place the cutout in the top left corner but without tapping down.
- xii Start Harriet using the *Cue Button* (button No. 2) and move the cutout across the screen while the clip replays. This adds the moving cutout to the previously assembled video clip.
- xiii View the clip again, *PLAYOUT RESULT* and then *SWAP* to save the result in the working background.

Multi-Layered Clip

- i Repeat the exercise with different cutouts - so creating a multi-layered clip.
Ensure that the cutout is not moved off the screen during these movements, as Harriet will read this as a swipe-off and stop the process.
- ii Run through the same procedure but introduce the use of *LOOP*.

ANIMATION USING STATISTICS

ANIMATION USING STATISTICS

Introduction

The movement of cutouts can be more accurately realized by using the system's statistics facilities. This can be turned into an animation by frame by frame recording on Harriet using the incrementing of statistics and the process automated with *SEQUENCE*.

Method

- i Record a video clip of around 50 frames duration, or use an existing suitable video clip as in the previous examples. Start at the beginning of the clip by rewinding the Harriet to frame 1 using the | ← control on the shuttle bar.
- ii Set result clip as 51 to 100.
- iii The Harriet must be set in sequence mode to enable a sequence of pen movements to be recorded and replayed. From the *ANIMATION* menu select the *SEQUENCE* box followed by *LOOP*.
- iv Ensure the *RAMCORDER* box is selected and then set-up the *SELL* and *BUY* frame number boxes to 1 and 51 respectively.
- v Select a cutout from the library and ensure the video clip is at frame 1.
- vi Select the *PASTEUP* menu and swipe-off.
- vii Position the cutout to the left of the picture, tap down, swipe-off and record the sequence:

STICK, ANIMATION, NEXT and then *PASTEUP*.

The system is now recording a sequence that will loop round automatically and move the cutout frame by frame. Start the sequence recording from the keyboard.

Note: The cursor turns red to show that sequence recording is in progress.

HARRIET

- viii Set-up the positional change using statistics (still recording the sequence).

X POS, 10, INC

This moves the cutout 10 points to the right.

- ix On the keyboard use the sequence commands:

2 (STOP)
3 (REWIND)
1 (REPLAY)

The sequence will replay looping round with the start and finish positions the same.

- x Tap down to stop the loop after 30 or so cycles and replay the animation in Harriet. The use of *SEQUENCE* can be expanded to perform any frame (or field) animation. Care should be taken that boxes which toggle functions on/off (as with *USE STENCIL*) are in the same mode at the end of the recording as at the beginning.

In this example the show menu function was used. This provides a check should a mistake have been made in the original recording.

LIVE OVER LIVE

Using Paste Up only

Using sequence it is possible to create the effect of animating a clip of live video over a live background. This example uses the *PASTE UP* menu to cut out and position each frame of a clip, using position, spin size and style to set the desired location and style of the clip. It is then a simple process to set up a sequence to cut out each frame (field) of the clip, position it in the preset location and stick it on top of the 'Background Clip'.

- i Define in the Ramcorder the three clips to be used:
 - The 'Source Clip' (1-100) as the video to be manipulated.
 - The 'Background Clip' (101-200) to act as the background video.
 - The 'Result Clip' (201-300) to save the processed result.
- ii Prepare the cutout shape using stencil and the *CUT ALL* function. Set-up the required position using *POS*, *SPIN*, *SIZE* and *STYLE*. If the Dynamic Collage option is fitted, select the *ONLY* box to prevent the creation of multiple cutouts during the sequence.
- iii In the Ramcorder set-up the *BUY* and *SELL* boxes as *201 SELL, 1 BUY* then deselect *RAMCORDER*.
- iv Set-up the sequence to process the clips:
 - Select the *SEQUENCE* menu *RECORD* function to start recording the sequence.
 - Select the *RAMCORDER* menu *BUY* function to buy frame 1 from the Ramcorder.
 - Select the *PASTE UP* menu *CUT PICTURE/STENCIL ALL* functions to cut out the desired part of the frame.
 - Select *ANIMATION* to return to the *RAMCORDER*, then select the *FRAME* box (to the right of the shuttle bar) and enter *100 INC* to select the first frame of the 'Background Clip'.
 - Select the *PASTE UP* menu and select *STICK* to stick the cutout over the background frame.

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Select *ANIMATION* to return to the *RAMCORDER*, then select *SELL* to sell the first processed frame to the 'Result Clip'.

Deselect *RAMCORDER* and *RECORD* to end the recording of the sequence.

Set-up *LOOP 99* to set the sequence to repeat for 99 frames and process the remainder of the clip, as quickly as possible.

This type of processing could be taken further by the use of different styles to produce drop shadows, edges, embossed, etc. Additionally using statistics it would be possible to include changes of position, spin and size to produce a moving live video effect over a live background clip.

Using Keyframe Effects

Using sequence it is possible to create the effect of animating a clip of live video over a live background. This example uses 'Keyframe Effects' to set-up a 3D effect for the video clip to follow. Once again sequence is used to process the clip.

- i Define in the Ramcorder the three clips to be used:
 - The 'Source Clip' (1-100) as the video to be manipulated.
 - The 'Background Clip' (101-200) to act as the background video.
 - The 'Result Clip' (201-300) to save the processed result.
- ii Prepare the cutout shape using stencil and the *CUT ALL* function. If the Dynamic Collage option is fitted, select the *ONLY* box to prevent the creation of multiple cutouts during the sequence.
- iii Set-up a 'Keyframe Effect' for the required number of frames (100 in this example) and then set the Keyframe move back to frame 1.
- iv In the Ramcorder set-up the *BUY* and *SELL* boxes as *201 SELL, 1 BUY* then deselect *RAMCORDER*.
- v Set-up the sequence to process the clips:
 - Select the *SEQUENCE* menu *RECORD* function to start recording the sequence.
 - Select the *RAMCORDER* menu *BUY* function to buy frame 1 from the Ramcorder.

LIVE OVER LIVE

Select the *PASTE UP* menu *CUT PICTURE/STENCIL ALL* functions to cut out the desired part of the frame. (As *KEYFRAMES* should still be selected from the set-up of the move, it will default back to Keyframes mode after *CUT ALL*.)

Select *ANIMATION* to return to *RAMCORDER*, then select the *FRAME* number box (to the right of the shuttle bar) and enter *100 INC* to select the first frame of the 'Background'.

Select the *PASTE UP* menu and select *STICK* to stick the cutout over the background frame.

Select *ANIMATION* to return to the *RAMCORDER*, then select *SELL* to sell the first processed frame to the 'Result Clip'.

Select *PASTEUP* and select the *FRAME* number box, to the right of the keyframe shuttle bar and *INC* by 1 to move to the next *FRAME* of the keyframe effect.

Deselect *RAMCORDER* and *RECORD* to end the recording of the sequence.

- vi Set-up *LOOP 99* to set the sequence to repeat for 99 frames and process the remainder of the clip, as quickly as possible.

This results in a 'Keyframe Effect', using live video, being processed over a second live 'Background Clip'.

HARRIET

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