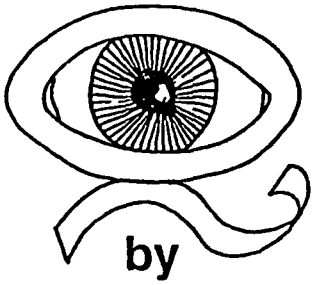
EYE-Q

THE COMPLETE QL GRAPHICS SYSTEM



by

Charles Southey

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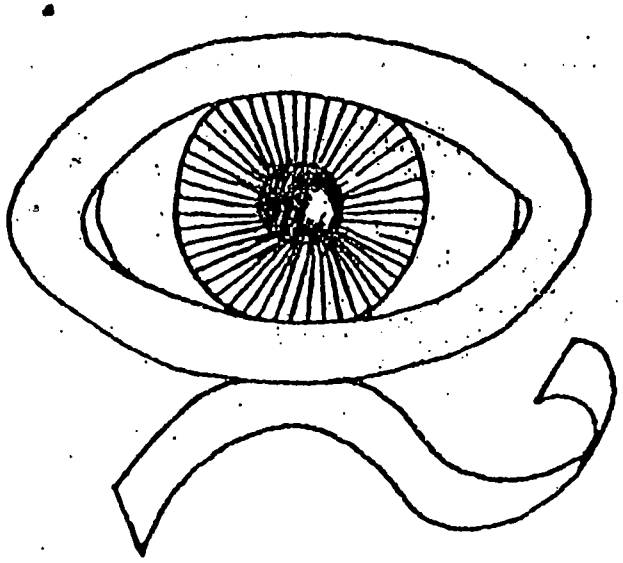
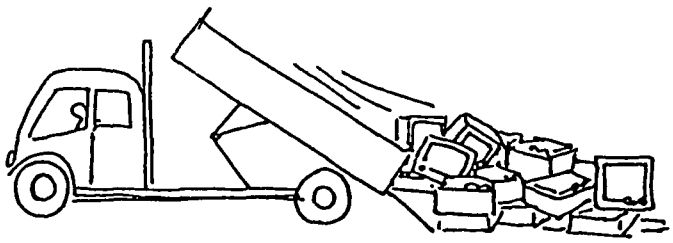


ON SCREEN HELP

For those of you who never read manuals beyond the point where backing-up is explained, here is a feature to help you: on-screen help is invoked by using CTRL + H (this requires the program medium to be present in the device from whence Eye-Q was booted up - normally mdv1_ or flp1_).....We know you are dying to get stuck into Eye-Q, so we shall bid you adieu now !



SCREEN DUMP

At any stage in this program you may obtain a full WYSIWYG screen dump simply by holding down CTRL & tapping D simultaneously - provided of course that you have a dot matrix printer, correctly set up. The printer driver is configured to the same defaults as is the Easel printer driver - if it does not work at first (very likely) consult the section of the manual about 'PRINTERS'.

INTRODUCTION

Eye-Q is an advanced graphics package: it allows the user to create sophisticated designs of any size on the screen then save them to microdrive cartridge/disk etc. for reloading to the screen from SuperBASIC, or dump them to a printer (hundreds of different types of printer are catered for). It also features an integral font editor allowing the creation of different character fonts which can be used within the user's own programs.

This program is highly complex, so in order to make full use of its features it is necessary to become familiar with them by working through this manual with the program running. Thereafter you may at any time call the ON SCREEN HELP option to remind yourself of anything you may have forgotten - but if in doubt always refer to the manual.

It is recommended that a backup copy of Eye-Q is made BEFORE DOING ANYTHING ELSE. This backup copy should subsequently be used to load the program, and thus protect the original from the normal wear and tear of everyday use. To make a backup copy, reset the QL, press F1/F2 as appropriate (with NO cartridge in mdv1_), then insert the (original) Eye-Q cartridge and type:-

```
EXEC_W MDV1_CLONE
```

The clone program will prompt you for a device from which to copy (enter mdv1_) and a device onto which the copy will be made (place a BLANK microdrive cartridge in mdv2_ and enter mdv2_ - or if you have a disk-drive system place the target disk in flp1_ and enter flp1_).

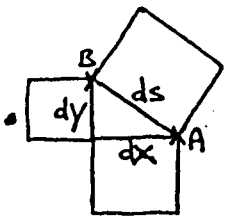
In response to the third question you must enter the name of the device from which the backup copy is to be booted - on cartridge systems this will normally be mdv1_ , and on floppy systems it will normally be flp1_.

Finally you are asked if you wish to format the target medium - if you respond in the affirmative be aware that any data which had previously been on the target medium will be irrecoverably lost (but if the target medium is a microdrive cartridge it is unlikely that Eye-Q will fit on the cartridge unless it is completely blank anyway).

If you simply HAVE to screw things up, please don't do it at this stage. Think about your answers before hitting ENTER.

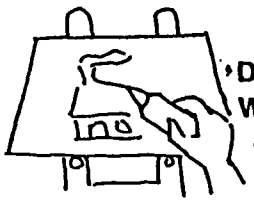
To invoke Eye-Q, reset the QL, put the cartridge in mdv1_ and press F1 or F2 as appropriate. Remove the program cartridge unless you want access to the ON-SCREEN HELP facility. For saving and loading put another cartridge into mdv2_ (you can format it within Eye-Q).

Didn't make a backup copy?



OFFSET COORDINATE DISPLAY

This feature enables you to keep a track of the cursor position relative to some other point on the screen. Simply move the cursor to your chosen reference point, and while holding down CTRL tap 0 (0=Offset). The status window will now display five figures. In addition to the usual co-ordinates there are three new ones - dX, dY and dS. dX and dY represent the horizontal and vertical differences between the current co-ordinates of the cursor and those of the reference point. dS shows the distance 'as the crow flies' - but QL pixels are not square so in fact X, Y and S co-ordinates are all measured in very slightly different units ! The feature may be toggled off with CTRL + 0 used in the same manner as to turn it on.



DRAWING WITH THE CURSOR

As stated earlier, the cursor position represents the position of a pen above the page (screen), but until now, moving the cursor has had no effect on the display. This is because the computer is in the SKIP drawing mode (as shown in the status window). This means that anything over which the cursor passes is totally unaffected by it. In order to draw something on the screen with the cursor you must put the program into SET mode by tapping the key F1 once (ie don't be hamfisted). The status window will show the new mode (if it does not show SET you have been hamfisted - or limp-wristed - just keep giving F1 single taps until it does). Now if you move the cursor around the screen, wherever it goes it will leave a white trail (white being the current INK colour displayed in the status window - unless you have skipped ahead and selected another INK colour). Note that the PIXELS ARE NOT ACTUALLY SET UNTIL THE CURSOR HAS MOVED OFF THEM - SO CHANGING THE MODE WILL NOT AFFECT THE PIXEL(S) IMMEDIATELY UNDER THE CURSOR.

Once you have drawn a few lines on the screen you may find that you have gone too far and wish to erase some. Ignoring the UNDO option described on page 2 for the time being (as this can be rather drastic), lines can be erased by first tapping F1 again so that the status window shows ERASE mode, and then CAREFULLY retracing over the paths you wish to delete. Note that this works in exactly the same way as SET, except that the 'drawing' is done in the current PAPER colour. Note also that unlike UNDO, whatever was originally beneath the lines you drew over it will not be restored by the ERASE mode - ERASE really means ERASE.

There is another drawing mode, XOR. In this mode the current ink colour is logically XORed with the contents of the screen as the cursor passes over them. If you do not understand what this means then the best way to find out is to try it and see what happens. Also try doing it with different INK colours when you have read the section of this manual about changing INK colours.

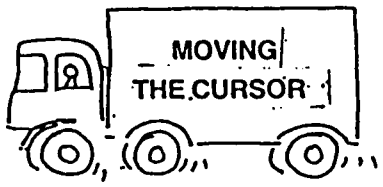
GETTING STARTED -TOP LEVEL

When Eye-Q has loaded you will be in the TOP LEVEL. This is the part of the program which allows you to make freehand sketches with the cursor, and to which you will always return if you press ESC (ESCAPE) successively.

At the top of the screen you will see the STATUS WINDOW. This displays information on co-ordinates, ink & paper colours and plotting modes, and sometimes offset co-ordinates, cursor dimensions and various system prompts. It is not obligatory to have this window displayed here; it can be moved to the bottom of the screen, or off the screen entirely, by pressing F2 (try pressing F2 a few times to see how this works).

In the centre of the screen is a flickering dot. This is your cursor - it is used when drawing to represent the position of a 'pen' above the screen.

The rest of the screen should be blank. This is the work area, on which all your graphics are produced. In fact, the work area includes the entire screen: in order to use the area which is covered by the status window, it is first necessary to move the status window by pressing F2 as described above. Do not worry if this causes the status window to obscure part of the graphics which you have already created; all will be revealed as soon as the status window is moved again.

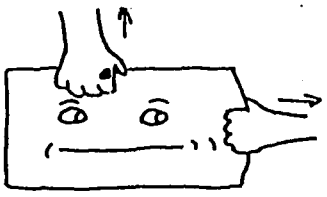


The cursor is moved around the screen using the CURSOR (ARROW) keys. Holding down a single cursor key will cause the cursor to move in the direction indicated by the arrow upon that key. As it moves across the screen, it will start to accelerate. This allows you to move the cursor quickly across large areas of screen. The moment you release the key, or the cursor hits the edge of the screen, the cursor will stop. Every time the cursor stops, the speed with which it initially moves again owing to subsequent key-presses is reset to slow - thus giving you total control for small cursor movements (as in sketching).

If you wish to move the cursor very rapidly across the screen (ie in large steps), hold down ALT simultaneously with a cursor key. In this case the 'proportional acceleration' described above will not occur.

You can also move the cursor diagonally by holding down the two appropriate cursor keys simultaneously. Proportional acceleration does not occur in this type of movement.

While you have been moving the cursor around the screen you should have noticed that the X and Y co-ordinates displayed in the status window have been constantly updated. This is very useful for keeping track of the cursor position when technical accuracy is required.



So far the cursor has been 1 pixel wide by 1 pixel high (although in 8 colour mode 1 pixel is twice as wide as in four colour mode - and is ascribed a width value of two for all co-ordinates and dimensions displayed in the status window). However, it is very likely that you will want to draw thicker lines than this, or to use a thick cursor as an eraser or XORer. The cursor can be made separately wider or taller by holding down CTRL, and simultaneously pressing W (to widen the cursor), or S (to increase its height). Holding down the relevant keys will cause the change to happen continuously. The cursor dimensions can be similarly reduced (by holding down CTRL with Q to narrow the cursor, or with A to shorten it). When altering the cursor dimensions in this manner, the top left of the cursor will remain invariant unless forced to move to prevent the cursor 'spilling over' the edge of the screen.

While these changes occur, the new cursor dimensions are constantly displayed in the status window. The display of cursor dimensions will remain until you cause the right hand half of the status window to be updated in any way (eg by moving the status window, changing the mode etc).

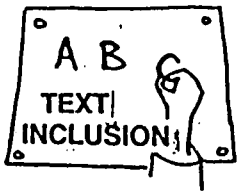
Note that neither enlarging nor reducing the cursor dimensions causes the screen to be modified, whatever the drawing mode is set to.

Drawing with an enlarged cursor is the same in all respects as with the original cursor (but requires somewhat more care).

This facility allows a random pattern to be 'sprayed' by the cursor. This pattern only overwrites the underlying screen where the 'INK' lands, the gaps between are unaffected. Note that the ink sprayed is the current INK colour.

The feature is toggled on/off by tapping B while holding down CTRL (B=Brush). However it will only spray when the mode displayed is SET, ERASE or XOR (ie not in SKIP). Spraying is always as for SET mode.

Some interesting effects may be created by having a stipple pattern ink colour (yielding a two-tone airbrush). Even more interesting effects can be achieved by selecting your INK colour from one resolution mode, and then skipping to the other mode and using the airbrush (because although the INK/PAPER/STRIP colours are corrected when changing modes, the airbrush interpretation of the INK colour is deliberately left unchanged).



In the top level you may write text to the screen simply by typing it in on the keyboard. However, before you can use this facility, you must release it by tapping T while holding down CTRL. The border of the status window will turn green to warn you that text is enabled (the reason for all this security is that many a carefully drawn picture has been ruined by casually leaning on the keyboard in earlier versions of Eye-Q).

When text is enabled, you may type it in. The characters appear such that the top left point of the cursor is also the top left point of the character about to appear. As each character is written the cursor advances by the width of that character to the right - but will not draw a line, regardless of the drawing mode, in doing so.

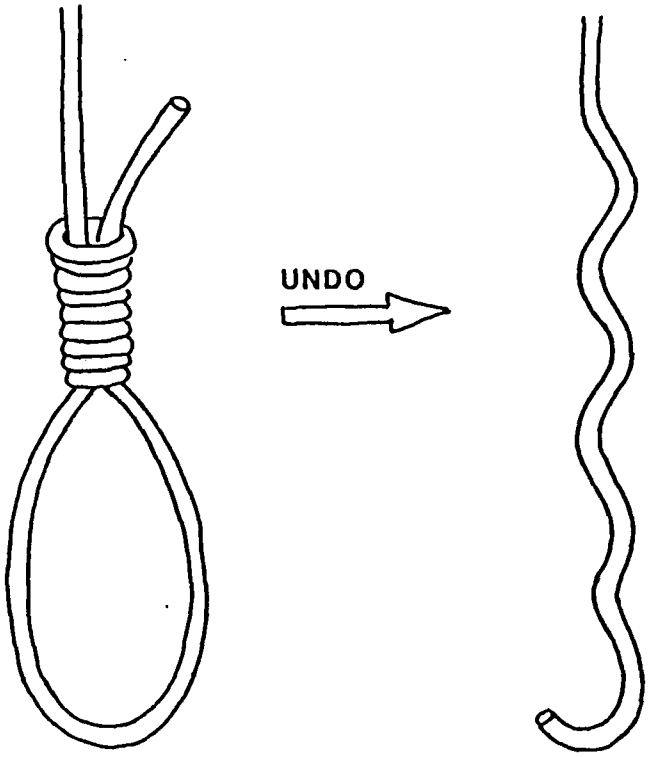
When the system is in the SKIP drawing mode, the characters are written on the screen in the current INK colour, with a 'transparent' background (ie the part of the screen onto which the character is written is unaffected except where the INK itself appears). When in SET or ERASE modes, however, the characters are written on a solid character background in the colour of the current STRIP colour (not shown in the status window but redefinable from the INK/PAPER/STRIP option. In XOR mode, the character foreground (INK) is XORed with the screen contents, and the background is transparent.

In order to facilitate the inclusion of text on the screen, an additional way of moving the cursor has been provided - holding down CTRL while using the cursor keys causes the cursor to move in steps of one character height vertically, and one character width horizontally. Note, however, that the cursor is fully active during these moves and will draw a line if not in SKIP mode.

Characters can be deleted by writing a space on top of them in SET or ERASE modes (with the STRIP colour set to the PAPER colour).

All the standard QDOS character sizes/spacings are supported, and can be selected using the character size select option described later. The character fonts (actual patterns) can also be completely redesigned using the font editor.

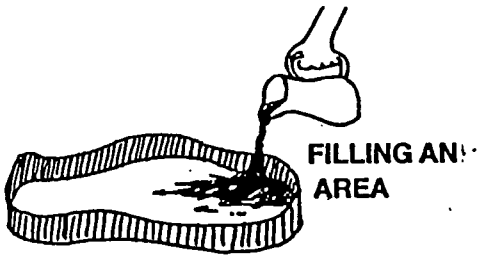
It is always a good idea to disable text when not using the feature, to prevent mishaps of the type described. This is done in the same manner as to enable it.



A powerful undo function is now provided for the TOP LEVEL and for all the rubber band options. This feature can be extremely useful - and hence by the same token extremely drastic and dire consequences may result if sufficient care is not taken in its use.

Eye-Q keeps a copy of the 32K of memory used by the QL to represent the screen elsewhere in memory at all times. When drawing in the TOP LEVEL, or adding rubber banded shapes to the picture, it is not necessary to update this copy until the user calls an option which requires the screen layout to be changed (e.g. zooming in, or calling down a menu). As a result, you have been given the option to restore the actual screen to the picture which was present last time the copy of the screen was updated. This can be done by pressing CTRL & U simultaneously. Moreover, if you are satisfied with something you have drawn, you may update the screen copy yourself by pressing CTRL and Y simultaneously. This means that if the next thing you draw is a screw-up and spoils what you have drawn previously, you have only to press CTRL and U and the mess will disappear again. Of course, if you have been working for a long time without the screen copy having been updated, either automatically or by you, and use this feature to try to remove your last misplaced line (or shape or whatever) - you will find, much to your dismay, that you lose a lot more than you bargained for. This is why you must be VERY, VERY CAREFUL.

Rather than waiting till you need to use the feature on a valuable screen, work out for yourself first how best to make use of it, by using it on doodles and generally messing about on the screen. It could save a LOT of frustration.



It is possible in the top level to fill any enclosed area, with no restriction on which colours define the boundaries of the area and which may be overwritten.

The fill is started by first moving the cursor so that it lies within the area you wish to fill (it does not matter if the cursor is too large - just make sure that the top left hand corner lies in the area) - then pressing F5. You will then be confronted with a 'menu' containing a list of colours: this list indicates which colours will be used to define the boundaries of the area (such colours being marked on the RIGHT with an arrow), and which colours will be ignored and overwritten if encountered within the area (these being all those not indicated as above). Initially, all colours are assumed to be boundary markers except the one upon which the top left of the cursor was resting.

If you wish to change this (ie want some other colours to be overwritten), then you can do so by moving the arrow on the LEFT of the colour list up and down with the up/down cursor keys until it rests against the one which you want to change. At this point pressing SPACE or ENTER will toggle the marked colour between boundary and area status.

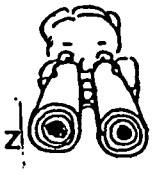
When you have chosen your boundaries in this manner, press ESC. You will now see a large 'palette' of colours and stipple patterns - from this you select the colour with which you intend to fill the area. This you do by moving the white box to enclose the colour you want and pressing SPACE or ENTER.

NOTE THAT THE PAINT COLOUR FOR THE FILL MUST BE ONE OF THE BOUNDARY COLOURS - OTHERWISE THE FILL WILL NOT COMPLETE PROPERLY AND WILL EVENTUALLY ABORT ITSELF - RESTORING THE ORIGINAL PICTURE. IF USING A STIPPLE PATTERN PAINT - THE MAJOR COMPONENT OF THAT PATTERN AT LEAST SHOULD BE A BOUNDARY COLOUR.

When you have chosen your paint, the picture will re-appear and the fill will commence - a clicking sound will be heard during the fill to warn that it is still in action. Do not touch the keyboard while you hear this sound (but see next paragraph). Once the fill is complete, the clicking stops and you are required to accept or reject the result. If you change your mind and wish to restore the previous picture, press ESC. Pressing any other key will be taken as your acceptance of what you see.

WHILE THE FILL IS STILL ACTIVE, YOU CAN AT ANY TIME DECIDE THAT YOU WISH TO ABORT THE FEATURE (EG IF YOU SEE THAT YOUR AREA HAD A 'LEAK'). THIS YOU DO BY PRESSING ANY KEY (BUT BETTER TO PRESS ESC IN CASE THE FILL TIMES OUT - WITH THE ABOVE RESULT). THE ORIGINAL PICTURE WILL BE RESTORED TO THE SCREEN.

After exit from FILL, you will be returned to the top level.



From the top level it is possible to zoom in on any part of the screen on which you are currently working. To do this simply press F4. The part of the screen centred on the cursor position will be blown up to fill the whole visible display - a magnification of four times. If you want an even closer viewpoint, pressing F4 again will repeat the process, so that the magnification is now by sixteen times. Pressing ESC from this level of magnification will return you to the lower magnification level, from this ESC will return you to the top level.

In the magnified levels, you may use the freehand drawing rules just as in the top level, except:-

i) Enlarged cursor sizes are not supported (but of course the ordinary cursor is magnified with the picture).

ii) Stipple pattern colours are not supported - the current INK and PAPER colours will be temporarily corrected to the nearest solid colour - these colours being restored on exit to the top level.

ii) Text may not be written on the screen while in these modes - nor is the airbrush facility available.

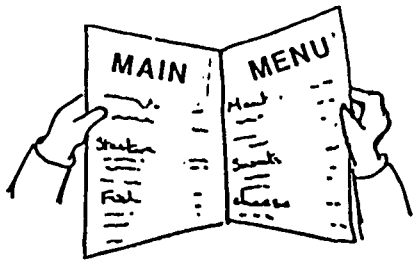
However, to aid close-up drawing, the following additional features are available in the magnified levels:-

i) A single pixel - the one under the cursor - can be set to the current INK colour by tapping SPACE or ENTER, even when in SKIP mode. If CTRL is held down simultaneously, the pixel will be set to the current PAPER colour.

ii) The temporary current INK colour can be changed by simply tapping the number key (0 - 7) corresponding to the desired colour (see QDOS manual for list of colours/numbers). Similarly, if CTRL is held down simultaneously with this operation, the current PAPER colour will be changed. These changes are temporary, and will be forgotten on return to the top level.

When the cursor goes 'off screen', the viewpoint is automatically adjusted so that the new area displayed is centred on the cursor position (or as close to this as possible if the cursor is near the picture edge).

Note that co-ordinates displayed in these modes are real, i.e. correspond to the actual cursor position in the picture as a whole, not just the displayed part.



The main menu is invoked from the top level by pressing F3. It allows access to some of the more advanced features of the program.

On entry, a window containing a number of possible options is displayed. This is the 'menu'. You will see an arrow pointing to the first option. The options are selected by moving the black arrow up/down, using the up/down cursor keys, and pressing SPACE or ENTER when the arrow points to the option you want.

You can return to the top level from the main menu by pressing ESC.

The eight options of the main menu are now described:-

Rubber bands are the most flexible and easy way to draw fundamental shapes, lines and arcs on the screen. They are an essential part of Eye-Q's features, so you should familiarise yourself with their use well.

When the rubber bands option is selected, the main menu is replaced by a sub-menu - the rubber bands menu. There are three options: circles/ellipses, lines/arcs and rectangles/blocks.

You may return to the main menu from the rubber band menu by pressing ESC.

RUBBER CIRCLES/ ELLIPSES 

Having selected an option from the rubber band menu, the working screen will re-appear. On it you will see the 'rubber band' - in this case initially a circle. The rubber band will always be shown in colours which contrast with the background. The rubber band can be moved about the screen, stretched, and generally manipulated by following the instructions below. At any time you can 'print' an impression of the rubber band on the screen by simply tapping SPACE or ENTER. The impression will be in the current INK colour. If you tap the key E instead of SPACE/ENTER, an impression in the current PAPER colour will be left (E=Erase). Note that the rubber band will not reappear until you next press a key - this is so that you can see the impression you have just left before the rubber band obscures it.

The UNDO feature mentioned at the beginning of this manual is available for this and all the rubber bands.

CONTROL OF CIRCLE/ ELLIPSE RUBBER BAND

The rubber band is moved around the screen by using the up/down/left/right cursor keys. Use of these keys alone allows fine adjustment of location, but for larger steps, hold down ALT at the same time. If the rubber band protrudes over the edge of the screen, the part remaining visible on the screen can still be used to leave an impression of itself.

The size of the circle/ellipse can be altered by holding down CTRL while pressing the up cursor key to enlarge the figure, or the down cursor key to diminish it. Again ALT should be held down during the operation if you wish to make rapid (i.e. large) changes.

You can change the eccentricity of the ellipse by holding down CTRL while pressing the left/right cursor keys to decrease/enlarge the eccentricity (eccentricity is used here as in the Sinclair QL User Guide to denote the ratio of the major to the minor axes of the ellipse - mathematicians take note !). Hold down ALT for greater progress.

The orientation of the axes of the ellipses can be altered - by holding down SHIFT while using the left cursor key to rotate anti-clockwise, or the right cursor key to rotate clockwise. Holding down ALT has the usual effect. N.B. Do not be too surprised if this operation appears to have no effect on circles !

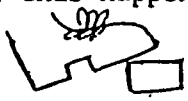
The above controls are a bit of a handful, but they are quickly mastered.

CONTROL OF LINE/ARC RUBBER BAND

The line/arc rubber band appears at first as a straight line. Each end of this line can be separately moved about using the cursor keys. The band can be bent into an arc at any time. The same rules for leaving a permanent impression of the rubber band etc. apply as for the ellipse/circle.

Pressing the up/down/left/right cursor keys will move one end of the line about. This is the active end. You may make the other end active instead by tapping TABULATE once. Tapping it again toggles activity back to the first end. Holding down ALT while moving the ends about speeds up the process.

The line can be bent into an arc by holding down CTRL and pressing the left/right cursor keys to bend it one way or the other. Note that arcs sometimes appear to go wild or disappear - this is QDOS up to its old tricks. If this happens, do not panic, just move or bend the arc slightly.



CONTROL OF RECTANGLE/BLOCK RUBBER BAND

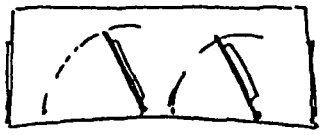
This rubber band is slightly different from the other two in that it uses the pixel co-ordinate system (see QL USER GUIDE) rather than the graphics co-ordinate system. This means that information about it can be (and is) usefully displayed in the status window. Moreover, it cannot be taken past the edge of the screen. In all other repects, however, it follows the rules as the other two rubber bands.

The rubber band as a whole can be moved around the screen using the left/right/up/down cursor keys, holding down ALT to speed things up if required. The co-ordinates given refer to the top left corner of the block.

The dimensions of the block can be altered by holding down CTRL, and using the left/right cursor keys to decrease/increase the width, and the up/down cursor keys to decrease/increase the height. The dimensions are shown in the status window. ALT for speed.

The block can be toggled between a hollow rectangle and a solid block by pressing F.

From all three rubber bands, you return to the rubber band menu by pressing ESC.



CLEAR SCREEN

This option enables you to clear the screen. On entry you will be prompted to press C to clear the screen, or any other key to escape. If you choose to clear the screen, the entire work area will be cleared to the current paper colour - with the loss of any picture which was on the screen. It is therefore a good idea to save anything you wish to keep (via the FILES option) before using this option. If using microdrive cartridges - make at very least two copies. Even disk users should make two copies of valuable screens.

On exit, you are returned to the main menu.

The INK/PAPER/STRIP option is the one you should choose when you wish to reselect any of the INK, PAPER or STRIP colours. Selection of which of these you wish to change is made via the INK/PAPER/STRIP menu.

A paintbox of colours will appear on the screen - just as in the FILL option. You select your chosen colour in the same manner - by enclosing it with the box cursor and tapping SPACE or ENTER.

If you exit from this option by pressing ESC instead, the colour will remain unchanged from what it was before.

Pressing ESC from the INK/PAPER/STRIP menu will return you to the main menu.

The files option is the interface between Eye-Q and the external environment. It enables you to save to storage media all the designs and fonts you have created - for later editing in Eye-Q or use in your own programs, displays etc.

At some stage in files operations errors often occur (e.g. there is not room on the medium to save what you are trying to save). When these errors occur they will be reported (accompanied by a beep), and pressing any key returns you to the files menu.

SAVE FONT

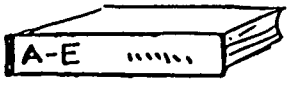
Enables you to save the character font you have designed. The font will be saved in standard format - and so will be fully compatible with any other programs which allow you to load in character fonts (provided they also use the 'standard' format !). An extension to SuperBASIC is provided to help you load the fonts in from BASIC. This is described in the section headed 'EXTENDING SUPERBASIC' towards the end of this manual.

When prompted for a filename you will be given a default - initially 'MDV2_' - but thereafter it will be the last name you entered. This default should not be rejected if it is not exactly right - you may accept the default by pressing one of the cursor keys or ENTER - this will move the cursor to the right of the default name - from where you may add to it OR EDIT IT. Of course, instead of accepting the default, you may simply type in the new device and filename - the default will vanish. Make sure that what you enter is a valid filename, using the same syntax as for SuperBASIC, e.g. MDV2_fred. If what you enter is not a valid name you will be given the error message 'NOT FOUND' and returned to the files menu.

LOAD FONT

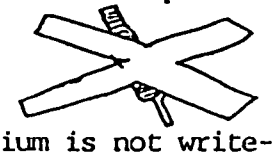
This allows you to load any character font from a storage medium, provided it is saved in the correct format. It will replace the character set in RAM - so make sure if you have any character set other than the standard default one in RAM that it is saved before loading a new one in.

DIRECTORY



Gives you a directory of the device you specify. Only the device part of the default filename is provided as a default - for obvious reasons. If the directory is larger than can fit on one page it will pause and ask you 'SCROLL ?'. Press any key to make it scroll.

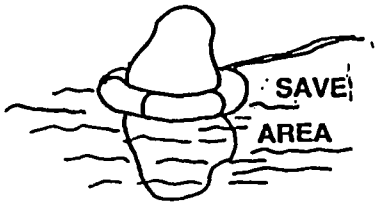
DELETE FILE



Allows you to delete any file (as long as the medium is not write-protected).

FORMAT MEDIUM

Formats the specified medium. Careful ! - This will wipe every single file off the medium - potentially disast rous if you make a mistake.



On entering this option you will be asked whether or not you wish to save the whole screen. If you do, press Y; otherwise press any other key. Note that in neither case will the status window or cursor appear in the saved picture.

If you have chosen not to save the entire screen you must select what area you do wish to save. You do this by covering the exact area with a rubber-banded block/rectangle (see RUBBER BANDS for instructions on how to use the block/rectangle). When the rubber band is in position press SPACE or ENTER.

Once the area to be saved has been chosen, you are asked for a filename as usual, and you are then prompted to indicate whether or not you want the area saved with graphic compression:-

The QL screen consists of 131072 pixels (4 colour mode), or 65536 pixels (8 colour mode). In both modes it is represented in RAM by 32768 bytes (32K of memory). The bytes are organised in pairs, each pair holding information on eight of the pixels (or four of the pixels in eight colour mode). However, on even the most complicated screens, much of the information is repeated in adjacent groups of bytes - so if this were saved directly onto a storage medium it would occupy 32K with much of the information being redundant. Graphic compression is a means of sifting out this redundant information, and thus drastically reducing the storage space taken up by a saved picture. A typical WHOLE SCREEN will save in around 12K - with no loss of detail !!!

If a picture is saved with graphic compression it can be loaded back into Eye-Q just as easily as a non-compressed one. If you wish to load it onto the screen from outside Eye-Q you should use the ALOAD extension described in the section 'EXTENDING SUPERBASIC'.

If only a part of the screen is being saved, there is no point in not using graphic compression, since unextended SuperBASIC provides no means of loading such areas anyway. The option is nevertheless still available to you.

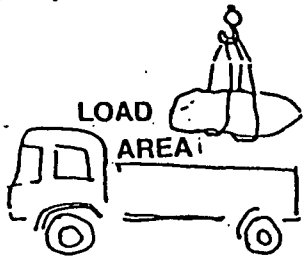
If you elect to save with graphic compression, and you are in 8 colour mode, you are asked if you would like to save the area in four colours only (black, white, red and green). If it does not seriously affect the picture to save it in only four colours then you ought to accept the suggestion (but not until you have read this and the next paragraphs) - since it means an even greater reduction in storage space. In very elaborate pictures, accepting the four colour save means a reduction to about half the total space previously needed. As the screens become simpler, the graphic compression becomes more efficient, and four colour saves become less advantageous (i.e. only a small percentage reduction in space of the 8 colour compressed screen is achieved). If you reject four colour saving, you will be offered the option to save the area in monochrome (black & white). This is obviously even more economical on space for complex designs. The choice is yours.

If you accepted to save the area in compressed form, but the screen was in four colour mode, you will only be offered the option of monochrome saving. This is the exact equivalent spacewise of four colour saving from eight colour mode.

Note that loading an area when the screen is in a different resolution mode from that in which it was when the area was saved will sometimes produce spurious results.

If using microdrive cartridges, saving in compressed form takes significantly longer than saving uncompressed, so be patient.

The ALOAD extension to SuperBASIC provided (see EXTENDING SUPERBASIC) will load any area saved from Eye-Q - in no matter what form.



Loading an area into Eye-Q is very much more simple than saving it. You merely have to provide the filename, and, if the area is not the whole screen, choose where you want it to load. To do this you are presented with a rubber band of the same dimensions as the area in question (which you cannot of course alter) - located in exactly the same position as that from which the area was saved. Press SPACE or ENTER when you are ready for Eye-Q to load the area.

Once the area has loaded, you have the option to accept or reject it. Press ESC to reject, or any other key to accept.

Two provocative demonstration pictures have been provided with EYE-Q - ensure no children are present when you load them!

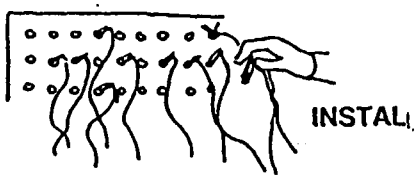
The screens are called DEMO_SCREEN & DEMO_SCREEN2 (a part screen).

FONT EDITOR

The FONT EDITOR has a full range of features for designing and editing character fonts with the greatest of ease. On entry, in addition to the font editor menu you will see on the right a large window containing a highly magnified version of the character under review (initially this is chosen by the system to be the letter 'A'). Beneath this is smaller window containing the real character in all the sizes which the system allows for the mode in which you are working (i.e. 4 in 2 colour mode or 2 in 8 colour mode).

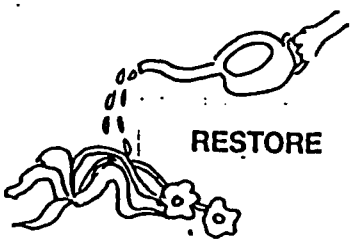
It should be noted that the chosen character is not in fact stored in the font until the INSTAL option is used, and if you exit from the font editor without INSTALLING the current character, any alterations which you have made to it will not be effected - moreover it will have forgotten about them by the time you next enter the font editor.

This option provides you with a flashing cursor within the blown-up character window. The cursor can be moved with the cursor keys in the normal way. Pressing SPACE or ENTER will toggle the 'pixel' beneath the cursor on/off. Note that there are parts of the window to which you cannot move - this is because under QDOS it is compulsory to have these lines blank in the character.



This stores the amended character in its correct place within the character font. Failure to use this option will result in the amendments you have made to the character being lost.

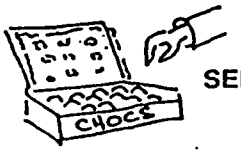
WIPE simply clears all the pixels within the character - making it in effect a 'SPACE'.



Restores the character under review to its form as defined in the font - in other words the exact opposite of the INSTAL option.

COPY COPY COPY COPY COPY COPY 

Copy requires you to press the key which corresponds to the character you wish to copy. The character under review will then acquire the same definition as that (in the font) of the character being copied.



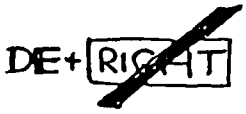
Similar to COPY, except that the character corresponding to the key pressed becomes the character under review. Any amendments made to the previous character AFTER the INSTAL option was last used are forgotten.

INVERT 

INVERT turns the current character upside down.

REFLECT 

REFLECT turns the current character 'back to front'.

DEFAULT 

DEFAULT restores the definition of the character under review to the default ('normal') definition.

An extra font (called EXTRA_FONT - we believe in elaborate names!) has been provided - it has a more modern look than the default set.

MANIPULATE SCREEN

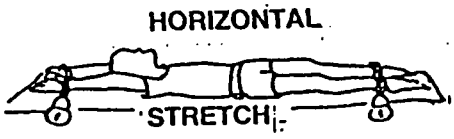
The MANIPULATE SCREEN options are a comprehensive range of features which enable you to copy any section of the screen elsewhere, with any of a number of different operations being carried out on the copy in the process. In addition, there are options to RECOLOUR, REDUCE and to PAN/SCROLL any part of the screen (the latter operation being under cursor control with or without wrap-around).

In every one of these options you are first required to identify the area of screen which is to be the source of the operation. You may accept the system's suggestion of a global operation (i.e. whole screen) - or may specify a local area. In order to choose a localised operation you are presented with a block/rectangle rubber band - just as with the LOAD/SAVE AREA options from the FILES menu - which you must place over the chosen area. Note that, particularly if using a hollow rectangle as your cursor, the area is inclusive of the entire cursor (i.e. the rectangle should not be used as an external 'frame', but as an internal border). The area is finally selected by pressing SPACE or ENTER.

In all but the PAN/SCROLL, RECOLOUR and REDUCE options, you are then straightaway required to select a destination for the area. This you do by moving the rubber band to cover the destination. Obviously you cannot change the dimensions of the rubber band at this point. Press ENTER or SPACE to indicate your selection.

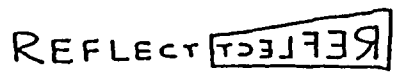
After the operation has been carried out you have the option of rejecting that operation by pressing ESC, or accepting it by pressing any other key. In either case, the rubber band remains - giving you the option to specify more destinations & thus make multiple copies. Placing a destination so that it overlaps the source may produce strange, but interesting, results. You may return to the MANIPULATE SCREEN menu by pressing ESC.

On global operations a similar thing occurs, except that there is obviously never any need to select a destination.

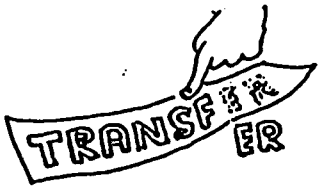


The image is stretched horizontally by a factor of two. The source may not be wider than 256. A global stretch uses only the left half of the screen as the source.

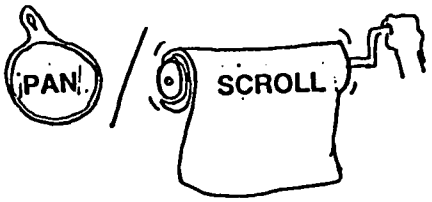
The image is stretched vertically by a factor of two. The source may not be deeper than 128 (118 if the status window is on the screen). A global stretch uses only the top half of the screen as its source.



The image is reversed (i.e. reflected in its central axis).

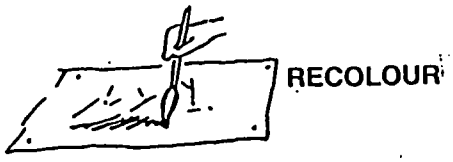


The image is simply transferred. In this case you are not given the global option (for obvious reasons).



For this there is no destination to be chosen. Having selected your source, you may PAN and SCROLL its contents under the control of the cursor keys. If you hold down ALT you can pan/scroll in larger steps. Wrap-around (i.e. what goes off one edge reappears on the other), but if you hold down CTRL while panning/scrolling wrap-around will not occur, and the gap will be filled with the current PAPER colour.

When you have finished with the option, press SPACE or ENTER to keep what you have done, or ESC to restore the old area.

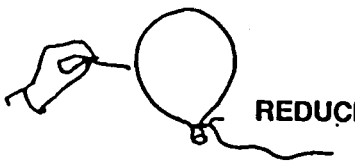


Another option which needs no destination. Once you have selected your source you will be presented with a menu. This indicates which colours are to be changed to which. You may alter this menu by:-

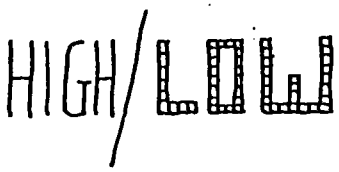
a) Choosing the colour you wish to alter as for any menu - once you have chosen it you will SEE no change until you follow instruction (b).

b) Roll through the destination colours by pressing the left/right cursor keys - until you reach the desired colour - then pressing SPACE or ENTER. Once you have set the menu to your satisfaction, press ESC. The source will then be recoloured according to your specifications. You have the usual 'WHOOPS' option when it is finished.

Note that stipple colours are really just patterns made up of solid colours, and are recoloured accordingly.

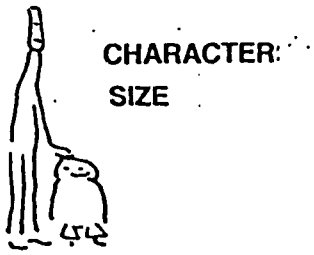


The last operation on the list - it again needs no destination to be specified. The source is simply reduced to 7/8ths of its original size - the resulting gaps at the edges being filled with the current PAPER colour. Note that some loss of detail will occur - so for example small text may no longer be legible after the operation.

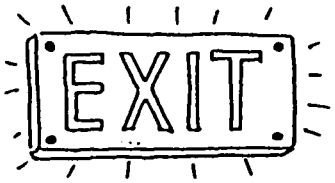


This option allows you to change from four colour to eight colour mode, and vice versa. The screen is not cleared, for you may wish to see what your picture looks like in the other mode, but generally pictures drawn in four colour mode produce a mess in eight colour mode (although the converse is not true).

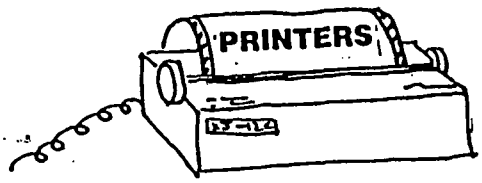
Four colour mode has a screen resolution of 512 pixels by 256 pixels, but only four available colours. In eight colour mode there are only 256 by 256 pixels, but eight available colours.



All the standard QL character sizes/spacings are supported by Eye-Q. You may select the combination you want from the menu (see QL USER GUIDE for meanings of codes). Note that if you are in eight colour mode, only double width characters are allowed.



Allows you to quit Eye-Q and return to SuperBASIC without resetting the machine. All data will of course be lost if not saved beforehand. Press Y to exit Eye-Q, or any other key to escape.



If you have a daisy-wheel printer, or similar, please do not expect to be able to make graphics dumps from Eye-Q. Such printers have no graphics capability.

If you cannot get a successful screen dump by following the instructions on page3 - work through the following check list:-

Printer is plugged in and turned on
Printer is connected to the QL via the proper interface
Printer is made 'ON-LINE' and supplied with ink ribbon and paper
QL is on and Eye-Q is loaded

If it still does not work, try to use the graphics dump from Easel (one of the PSION freebies). If you cannot get this to work either, contact PSION.

If the Easel printer dump works, then the only thing wrong is that your printer is not set to the same protocols as the printer driver in Eye-Q - this is easily remedied. To do this you must exit Eye-Q and run the supplied program called CHANGE_DEFAULTS by typing in (from SuperBASIC):-

```
LRUN MDV1_CHANGE_DEFAULTS
```

(For MDV1_ you can substitute whatever device in which you have your Eye-Q medium).

This program will ask you various questions about setting up the printer driver. Consult your printer manual & check the dip-switch settings on your printer to answer these questions.

Preamble codes are entered as a sequence of one-off decimal numbers, separated by commas. Your printer manual will tell you if you need any preamble/postamble codes. If not, just press ENTER when prompted for preamble/postamble codes.

CHANGE_DEFAULTS simply alters a defaults file. Advanced users may wish to play around with this, so here is the structure of the defaults file:

Offset	Content
0	MSB of baud rate
1	LSB of baud rate
2	No: of preamble bytes,followed by preamble
?	No: of postamble bytes,followed by postamble
?	CHR$(0) if len(preamble+postamble) is odd, otherwise nothing
?	Entry pt & start of printer driver (upto 1000 bytes)

The driver supplied is for Epson compatible printers. The supplied baud rate is 9600 with no preamble or postamble. You can use any of the printer drivers supplied with EASEL in place of the existing driver - the CHANGE_DEFAULTS program allows you to do this automatically. Further, if the driver (existing or new) is Epson (RX/MX/FX/LQ/LX) compatible, you can change the print density (ESC K/L/Y/Z modes - see your printer manual), the horizontal/vertical balance (in case circles look like ellipses when printed) & the AUTO LF/CR (in case there are alternate blank lines in your hardcopy).

E_X_T_E_N_D_I_N_G BASIC

Once you have created and saved your designs/character fonts using Eye-Q, you will want to use them in your own applications. In order to allow you to do this with a minimum of difficulty, Eye-Q comes supplied with a little program which adds two new commands to the SuperBASIC vocabulary - ALOAD and FONTLOAD. To instal these additional commands, you should reset the QL, then start it up by pressing F1/F2 as appropriate but with no cartridge in MDV1_ (or disk in FLP1_) - so that the system drops into SuperBASIC. Then place your Eye-Q cartridge in MDV1_ and type:-

```
LRUN MDV1_EXTEND
```

The program will ask which device it is running from, i.e. in this case MDV1_, and add the commands. Note that these commands will NO LONGER be installed after you have reset or turned off the QL.

Aload enables you to load an area into a window, or onto any part of the screen, provided it will fit. There are three ways of ALOADING an area:-

```
ALOAD "MDV1_NAME"
```

will load the area called "NAME" from MDV1_ onto exactly that part of the screen from which it was saved within Eye-Q. Note that due to a QDOS bug all filenames must be enclosed in quotes, or the error 'CHANNEL NOT OPEN' will occur.

```
ALOAD #1, "MDV1_NAME"
```

will load the same area into the top left corner of #1, assuming that there is room for it there.

```
ALOAD #1, "MDV1_NAME",10,10
```

will load the area into #1, at co-ordinates 10,10 relative to the top left of the window. Of course #1 and 10,10 are just examples - any window and any co-ordinates may be used.

If an attempt is made to ALOAD an area onto a part of the screen which is not large enough to take it, the error 'OUT OF RANGE' will occur.

UPDATES

EXTENSIONS

Note that users of ALOAD & FONTLOAD MUST enclose the filename in quotes, if it is an explicit string.

SUPER SPRITE GENERATOR

EYE-Q is compatible with SSG V4.0. Proceed as normal with SSG but invoke the EYE-Q extensions at the start of BOOT:
X=RESPR(4096):LBYTES device_BAS_CODE,X:CALL X
assuming you have copied BAS_CODE from EYE-Q. At the appropriate time, ALOAD the EYE-Q designed screen(s) or part screens.

WCOPIERS BEWARE!

EYE-Q uses file headers to store screen parameters, unless the file is a full colour full screen w/o compression.
WCOPY (& COPY too if Suertoolkit is on) CORRUPTS headers - stick to the SuperBASIC COPY while cloning screens!
SAVE works perfectly from inside EYE-Q so you CAN have the toolkit plugged in.

FILL

FILL is accompanied by blipping, which stops when FILL is complete.
The default boundary colours FILL assumes are ALL COLOURS except the colour underneath the cursor's top left hand corner. You can change these to any combination of colours.

THE CURSOR

The maximum cursor size is 256(hor)x128(ver).
Cursor movement diagonally in the 'manipulate screen' & 'INK/PAPER/ STIPPLE select' modes has been enabled.

COMPRESSION

Graphic compression is improved. If you have any compressed screens created with pre-V2.0 EYE-Q, load them with the old EYE-Q & resave them w/o compression to allow access with EYE-Q V2.0.

FONTLOAD is a very simple command to use. Simply typing:-

FONTLOAD #2, "MDV1_FONTNAME"

will instal the font called "FONTNAME" from MDV1_ into #2. You may omit the channel identifier, in which case it will be assumed that you wish the font to be installed in #1.

If, at any stage, you obtain a 'BAD NAME' or 'BAD LINE' error when using these commands, it is because either you have mis-typed the line, or you have forgotten to instal the commands !!

MULTITASKING

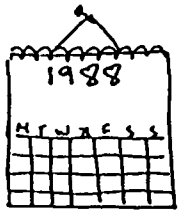
If your QL has an expanded memory, you can run several versions of Eye-Q in parallel. If you wish to have two running, you can use the MULBOOT program provided instead of BOOT. Just start up the QL without BOOTING up from MDV1_, then place Eye-Q into MDV1_ and type :-

LRUN MDV1_MULBOOT

Eye-Q will load as normal, but you may invoke it a second time by holding down CTRL and H simultaneously, just as though you wanted ON SCREEN HELP. A second Eye-Q will load, and you may toggle between them by using CTRL & H. They will not interfere with each other (provided your QL has sufficient memory).

ON SCREEN HELP is not available when using this facility.

UPDATES



If we have anything further to say you will find additional words of wisdom on a QUILL file named UPDATES_DOC. The suggested way to access this is via QUILL.

SPRAY CAN

CTRL+B toggles spray can ON/OFF. When ON, a random INK pattern is sprayed by the cursor (independent of cursor size) in all modes but Skip. EYE-Q is supplied with it OFF - you should switch off as soon as you have finished using spray! To get a multicoloured spray:

* choose a stippled ink AND/OR
* choose an ink in low res & switch to high res.

UNDO

A copy of the screen is maintained in RAM. From top level, all of the following result in the RAM screen being made = visible screen.

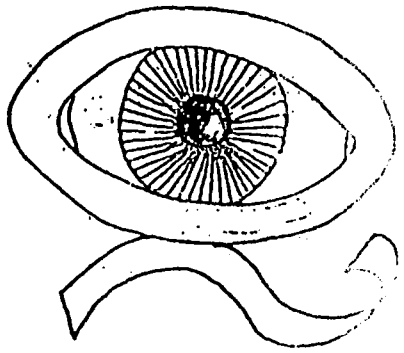
* Moving status window
* Calling a menu
* Zooming in
* Filling
* Pressing CTRL+Y

If you have made an error pressing CTRL+U will restore the RAM picture. Undo must be used with CARE - you may undo more than you intended.

MISCELLANY

* Press keys gingerly.
* Make SAVEs frequently - & verify them (ESC if there's an error). That way you are not let down by media errors.
* You now have the option to return to SuperBASIC.

INDEX



```
+ + + + + + + + + + +
+      DP  HATES      +
+  MICROCARTRIDGES    +
+    PLEASE MAKE A    +
+   BACKUP COPY NOW   +
+ + + + + + + + + + +
```

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> please cut here <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

To: DP REGISTRATION, 222 THE AVENUE, LONDON E4 9SE

Name: _____ Address: _____

_____ Postcode: _____

QL version: ____ Do you want to be put onto our direct mailing list? YES / NO

Please give us your frank, constructive comments & suggestions re:

(a) EYE-Q: _____

_____

(b) Its documentation (we already know you hate red paper): _____

_____

(c) Our advertising: _____

What other DP programs do you own? _____

What DP products would you like information on? _____

What new software would you like us to write? Why? _____

_____

What computer magazines do you read? Always: _____ Sometimes: _____