# PROFESSIONAL PUBLISHER DTP SYSTEM

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CONTENTS

## A.    OVERVIEW

## 1.    INTRODUCTION

### 1.1    Desktop Publishing

The fascinating field of  desktop publishing attempts to produce
printed  output that  will come  close  in quality  to the  more
traditional  printing processes,  although only  a microcomputer
and  an  attached printer  with  graphics  capability are  used.
As the printer is used in its graphics mode, far more different
fonts can be put on the  Page than by a word-processing program.
Desktop  Publishing  thus  does  not  need  the  more  expensive
resources of conventional printing; while it can also do without
some of  the technical  qualifications required in  the printing
trade, the aesthetic training  acquired by human printers cannot
be entirely forgone.  Depending  on the user's aesthetic talent,
he will nonetheless  be able to produce output  that is pleasing
to the eye after some experience.

The central  object of Desktop  Publishing programs is  the Page

rather than the whole publication,  because it is the individual
Page that is  viewed at a given time.  The  main operations that
can be performed on a Page are:

- global Page design, e.g.  definition of margins, columns etc.;
- entry  of text,  both manually  and by  loading of  previously
  stored  material,  in  any  of several  fonts  of  type  (with
  'highlight' variations  such as bold print,  italics etc.) and
  to any part of the Page;
- the placing of graphics,  both entered manually (free-hand and
  geometric drawings)  and loaded  from a previously  saved file
  (e.g. clip art, photographs, video images) on the Page.

All  these operations  should  be easy  to  perform and,  within
reason, easy  to undo if the  user is dissatisfied with  some of
his work.

A  desktop  publishing system  also  includes  features to  make
itself  comprehensible to  various models  of printer  ('printer
drivers') and to  permit printing in the  several graphics modes
supported by a printer.

Font  editors which  enable  the user  to  supplement the  fonts
provided  with  user-designed  modifications  (or  entirely  new
fonts) are among  the most useful auxiliary  features of desktop
publishing systems.

## 1.2    What You Have Got

The  Professional  Publisher  package,  the  most  comprehensive
desktop  publishing program  ever produced  for the  Sinclair QL
microcomputer, comes  in the  form of one  floppy disk  (3.5" or
5.25") and  this manual.  If your  QL has not been  upgraded for
floppy  disks and  at  least 512K  of  expansion memory,  please
refer to 'Machine requirements' in the Alphabetic Section.

The disk contains:
- the main program, publish_task, with its booter program, boot.
  The use of this program is what most of this manual is about;
- five  files with  SuperBASIC extensions  needed: runtime_exts,
  eye_q_exts, publish1_exts, publish2_exts and mouse_exts; these
  are all loaded automatically by the main booter program;

- four files that hold the  default values of various variables:
  epson_driver,     variable_default,     default_layout     and
  fill_patterns; these are also automatically loaded at start-up
  time
- eleven files containing clip art;  their names and use will be
  found under Clip Art in the Alphabetic Section.
- three auxiliary programs: configure_exe (to change the various
  defaults),  convert_page_exe (to  make  pages  saved  by  the
  earlier and  less powerful Special Desktop  Publisher readable
  by Professional  Publisher), and  convert_font_exe (to  do the
  same to fonts saved under  the earlier program); each with its
  associated  booter which  has  _boot instead of  _exe in  the
  filename.   These programs  are used  separately; explanations
  are given in Chapter 9.
- a  large number  of  fonts of the  conventional  QL size  and
  resolution (the abbreviation QLS will be used for these), with
  filenames ending in _qls;
- numerous  fonts  of  much higher  definition  and  versatility
  (we'll refer to them as HDF), with filenames ending in _hdf.

While the supplied built-in printer driver is excellent, Digital

Precision always believe in providing alternatives. PDQL have modified their printer driver grafiX for us. Refer to section 9.4 for details.

The file updates_doc (to be read with Quill) with information about enhancements to the program added after this manual was printed may be present - if so, please read it.

As supplied, the disk is pretty full. To make room on it, move the auxiliary files somewhere else. The best way to make use of this room is to install LIGHTNING on it - it is as easy as pie to do this, and LIGHTNING will speed up PROFESSIONAL PUBLISHER a good two times fairly across the board. If you already have LIGHTNING, put ALL the modules (text, graphics and maths) onto Professional Publisher.

LIGHTNING SPECIAL EDITION is even better than LIGHTNING! It provides you with eighty QL fonts, most of them completely new.

If you have a THOR, you will need the special THOR version of Professional Publisher - the word THOR will appear on the front of the disk. This manual applies equally to both versions.

## 1.3   Copying the Disk

Of course you realise that before using the package you should make backup copies of the disk for your own protection. You probably know how to do this; if not, you'll find instructions under 'Backing up' in the Alphabetic Section.

We urge you to read the entry under 'Copyright' in that Section; Digital Precision will not hesitate to prosecute copyright violators anywhere. We offer rewards (with anonymity guaranteed) for information on pirates.

## 1.4   How to Use This Manual

The first part of this manual is intended to give you a rapid overview of the features of Professional Publisher, so that you can start using it as rapidly as possible. If anything is unclear or for in-depth information, we refer you to the amply cross-referenced Alphabetic Section, where details on each feature will be found, technical terms explained, and practical tips offered.

## 1.5   Thanks

The program itself was produced by a team led by Andrew Astrand, programmer and innovator supreme. Andrew, who (in his spare time) is reading computer science at one of the country's leading universities, was assisted by his father Cliff.

We thank polymath Dr Helmut Aigner of Vienna who is responsible for 80% of this manual. Mission control and the other 20% (the bludners) were by Freddy Vachha, DP's technical director....
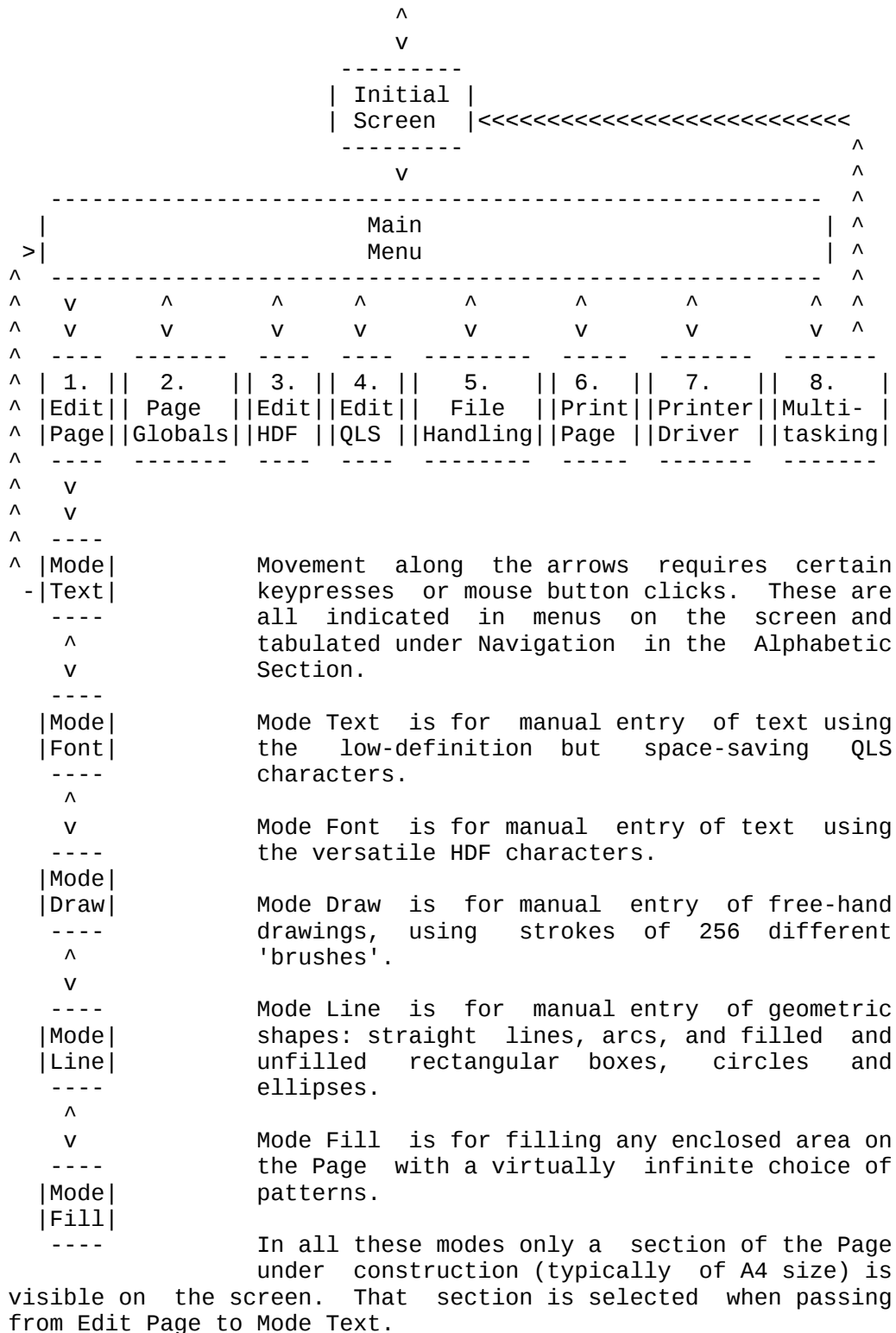
## 2.   The Professional Approach

No single menu could possibly hold all the options available to the user of Professional Publisher. Nor would it make much sense to offer them all at the same time, as you are not likely to place text and graphics on the Page helter-skelter.

We have therefore modularised Professional Publisher in such a

way that  you can select from  among five modes of  manual entry
and seven major  menus (one for automatic entry  from files, the
other six for auxiliary functions).

They are all  accessed, after you have passed  an initial screen
that  facilitates multitasking,  from  a Main  Menu.  A  graphic
representation is given overleaf:

```
                                      ^
                                      v
                                  ---------
                                  | Initial |
                                  | Screen  |<<<<<<<<<<<<<<<<<<<<<<<<<<
                                  ---------                          ^
                                      v                              ^
      ------------------------------------------------------------   ^
      |                          Main                            | ^
    >|                          Menu                            | ^
  ^   ------------------------------------------------------------   ^
  ^   v        ^        ^        ^        ^        ^        ^    ^  ^
  ^   v        v        v        v        v        v        v    v  ^
  ^  ----   -------   ----   ----   --------   -----   -------   -------
  ^  | 1.  ||  2.   || 3. || 4.  ||   5.    || 6.  || 7.    || 8.   |
  ^  |Edit|| Page   ||Edit||Edit||   File   ||Print||Printer||Multi- |
  ^  |Page||Globals ||HDF ||QLS ||Handling ||Page ||Driver ||tasking|
  ^  ----   -------   ----   ----   --------   -----   -------   -------
  ^   v
  ^   v
  ^  ----
  ^ |Mode|          Movement  along  the arrows  requires  certain
  -|Text|           keypresses  or mouse button clicks.  These are
   ----             all  indicated  in  menus  on  the  screen and
    ^               tabulated under Navigation  in  the  Alphabetic
    v               Section.
   ----
  |Mode|            Mode Text  is for  manual entry  of text using
  |Font|            the   low-definition  but   space-saving   QLS
   ----             characters.
    ^
    v               Mode Font  is for manual  entry of text  using
   ----             the versatile HDF characters.
  |Mode|
  |Draw|            Mode Draw  is  for manual  entry  of free-hand
   ----             drawings,  using   strokes  of  256  different
    ^               'brushes'.
    v
   ----             Mode Line  is  for  manual entry  of geometric
  |Mode|            shapes: straight  lines, arcs, and filled  and
  |Line|            unfilled   rectangular  boxes,   circles   and
   ----             ellipses.
    ^
    v               Mode Fill  is for filling any enclosed area on
   ----             the Page  with a virtually  infinite choice of
  |Mode|            patterns.
  |Fill|
   ----             In all these modes only a  section of the Page
                    under  construction (typically  of A4 size) is
visible on  the screen.  That  section is selected  when passing
from Edit Page to Mode Text.
```

In the Main Menu and in most sub-menus a scale model of the Page
(called  the cameo) is  visible.  This is  too  small to  show
details, but it does give an overview of the general Page layout

and of how  Page construction is coming along.  There  is also a
close-up (full-size) view of the currently interesting Page area
on screen whenever necessary.

The 'Page  Globals' sub-menu lets the  user treat the Page  as a
whole:  fix its  size, turn  it  sideways, set  its margins  and
columns, etc.  As there may be two pages in memory concurrently,
this  sub-menu also  permits swapping  of the  currently handled
Page.

The 'Edit  fonts'  and  'Edit  QL  sets'  sub-menus  are  for
supplementing the already vast supply  of QLS and HDF fonts that
comes  with  Professional  Publisher.    Users  may  modify  the
supplied  fonts or  design entirely  new ones.   Because of  the
multitude of supplied  fonts, these sub-menus may  not be needed
much by the beginning user.

The 'File handling' sub-menu permits
- the entry of previously saved text and pictures on the Page;
- saving and reloading of unfinished (and finished) Pages;
- auxiliary functions:  obtaining a file directory  from a disk,
  deleting  a file  and  formatting a  medium.  Other  auxiliary
  functions,  such  as  file   copying,  are  available  through
  multitasking.

The 'Print page' sub-menu does what  it says.  It works with the
Page currently in the QL's memory.  A Page that is saved on disk
must first  be loaded  from the  'File handling'  menu. Several
styles of printing (passes, Page orientation, print density) are
supported.

The  'Printer driver'  menu is  for those  whose printer  is not
fully Epson-compatible.  (If it  is,  the  default values  the
program comes  with will ensure perfect  output without changing
any parameters.  Your printer  is probably  Epson-compatible if
its manual states that it is;  it certainly is if graphic output
from the Psion EASEL program, supplied with the QL, through that
program's default printer driver works on it.)  To attune the QL
to any other  9-pin printer, the 'Printer  driver' sub-menu will
ask the  user certain questions he  can answer from  the printer
manual, and then make the necessary software adjustments.

The 'Swap tasks' sub-menu is  the only way, other than resetting
or  switching  off  the  computer,  to  exit  from  Professional
Publisher and  use another  task. At your  option, Professional
Publisher  can  either  be   re-entered  ('multitasking')   or
abandoned.

## 3.    PAGE EDITING

### 3.1   Start-Up

To  get  your Professional  Publisher  program up  and  running,
insert the  disk in floppy drive  1, reset your QL  and press F1
when  the Monitor/TV  question appears  on the  screen. Loading
will take a minute  or more.  To speed up loading,  cut down the
number of  fonts automatically  loaded into RAM  by Professional
Publisher using the configurator (see section 9.1 LATER!).

If you wish to use the  Smiling Mouse to control your input, you
must have it plugged in before switching on the QL.

You  will first  see a  small initial  window at  centre screen,
inviting you to  press Ctrl and C together (do  so, unless there

is a  flashing cursor in the  window) and then Enter.   The Main
Menu, complete with cameo, will now be displayed.

If the  size of the  Page you want to  design is NOT  960 pixels
across by 800 pixels down (a  typical A4 Page held upright), you
must  make  the  necessary  adjustments  (width,  height  and/or
orientation)  immediately  by  moving   to  sub-menu   2  (see
Subsection 5.1);  you cannot  change these parameters  after you
have put something on the Page  and still get a correct printout
(you  can,  however,  return  to  the  original  dimensions  and
orientation).

For  the  purposes  of  this  overview we  shall  assume that  an
upright ('portrait'  rather than  'landscape') Page is  what you
want.  Note  that information  on Page  size and  orientation is
given at the bottom of the screen.

The screen also displays, along the edges of the cameo, the Page
dimensions in  centimetres. (We shall  learn how to  change the
indication to inches in Subsection  5.1).  These are given as an
aid to your planning only; the  printout may or may not come out
in this size  depending on the options you select  when you give
the Print command.

Smiling Mouse owners may  want to press the "2" and  "9" keys to
transfer  control  to  the  mouse  and  then  click  the  Cancel
(left-hand) button to  return to the Main Menu.  If  you do this
without having  a mouse connected,  however, you are  in trouble
(you  can only  re-activate the  keyboard control  by "clicking"
with a mouse - Catch 22)!

We shall now make our first selection from a menu.  We want menu
item 1 (Edit page) and  find this item already highlighted.  All
we have  to do  now is to  confirm that this  is indeed what  we
want.  There are  two ways of doing this from  the keyboard (the
space  bar and  the  Enter key),  and one  from  the mouse  (the
right-hand or Select button).  From now  on we shall take it for
granted  that pressing  the space  bar and  pressing the  Select
button  are equivalent,  as are  pressing Esc  and going  to the
Esc option and pressing Select.

A red  rectangle marked with  two arrowhead cursor  symbols, the
'shuttle', now appears in the top left-hand corner of the cameo.
This represents the top left-hand  section of the Page.  We also
get a  life-size close-up of part  of the shuttle area  in a new
window that opens at screen bottom right. The place of the arrow
at the centre  of the close-up corresponds to  the top left-hand
arrow on the cameo.  Areas shown  in red on the close-up are off
the Page and therefore inaccessible.

If we want  to put our first  efforts on this part  of the Page,
fine; all we have  to do is press the space bar.  If we want to
select another portion, we can  move the shuttle as indicated on
the panel displayed on the  screen.  Under keyboard control, the
four arrow (or cursor) keys move the shuttle by 32 pixels a tap;
in combination  with the  control key,  8 pixels  a tap;  and in
combination with  the shift key, to  the nearest 'guide'  in the
desired direction with each tap.  The guides are imaginary lines
visible on the cameo which help  in putting text and graphics in
the  right  place: margins,  column  delimiters  and  auxiliary
horizontal lines called  column breaks. We shall  learn to place
these wherever we  like in due course; for now  let's accept the
default  ones. As  an exercise,  move  the shuttle  to the  top
right-hand corner of the cameo and press the space bar.

As movement of the mouse roller is not fine enough to effect accurate small movements across the cameo, put the mouse pointer in the screen panel where some options are directly available. Move it by rolling the mouse until the mouse pointer is in the desired arrow (32 pixel or 8 pixel movement in the appropriate direction) , then click Select as often as desired. ESC and select screen area are similarly supported.

## 3.2   Mode Text.

The Main Menu, cameo and close-up now disappear from the screen. Instead we get a large white window that covers most of the screen (this is the area represented by the cameo as we last saw it; we'll call it the Screen with an upper-case S for clarity), two rulers at bottom and right, and a narrow information window at extreme right.

## 3.2.1 Screen layout

All we see on the Screen are the guides and an arrowhead cursor. The rulers have markings which correspond to centimetres. The information window tells us, from top to bottom:

- that we are now in Mode Text (for manual QLS text entry),

- where Screen top left is with respect to Page top left (the Screen X and Y co-ordinates); the white numbers are units of one 'square' (i.e. 8 pixels), the red ones are extra pixels;

- where the cursor is with respect to Page top left (the Page X and Y co-ordinates);

- the current QLS font assignments and style selection. You can select any two fonts (one for the 'regular' characters, the other for foreign characters and special symbols) from a selection of twenty-four to be used for your text. You will want to use different font pairs for regular ('draft') text and for the 'highlights' (bold, italic, superscript, subscript and one other, unnamed highlight). As a default, draft style uses first font B and second font N.

  Somehow you must also tell the program which of the styles is to be in force when you type the next character, and whether this is to be underlined and/or inverted (i.e. have black and white exchanged). The default is draft, non-underlined, non-inverted. You actually get to see a sample of this style (28 typical characters, the last 7 from the second font) in the information window;

- the current settings for ink and paper (default: black ink, white paper).

All of these can be changed by you, but for the moment let's accept the defaults.

## 3.2.2 The function keys

The bottom of the information window tells you what pressing the function keys will do for you. For F1, F2 and F3, this is the same action in all five modes:

- F1 will freeze the co-ordinates in the information window so they won't change when you move the cursor; another tap on F1

will unfreeze them.
- F2 will switch the rulers off and on. A menu will be displayed, giving you the option of controlling either the vertical or the horizontal ruler. As an exercise, let's remove the horizontal ruler. This time the highlight is in the wrong place; this means you have three keyboard options:
  - press the down arrow key; when option 2 is highlighted, press the space bar;
  - as above, but press Enter instead of the space bar;
  - press 2 (the number of the option).

  With the mouse, roll the pointer until option 2 is highlighted, then click Select.

- F3 will lay a grid of 16 pixels mesh width over the Screen to help in accurate cursor placement.

Let's not deal with F4 for the moment, since we're going to use it ultimately to leave Mode Text. F5 will show you a Help window with information on what you can do in the mode you're in. Among other things, pressing Enter will take keyboard users to a sub-mode named Control. This has different features in each mode but is always characterised by a C-shaped cursor. You may wish to change, say, the ink colour repeatedly and see the symbol in the information window turn to white, through various grey stipples and back to black.

Scrolling the Page isn't very exciting while there's nothing on it, but you'll at least see the guides move and the co-ordinates change (unless you've frozen them) while the cursor seems to stay in the same place. You can also scroll any part of the Page towards the rulers (except certain parts of the top left section of the Page) to determine the accurate position of anything that you've put on the Page.

You cannot access the function keys while in Control sub-mode; leave it by pressing Esc.

Mouse users will make these adjustments from the information window itself. Click INK, or PAPER, or a co-ordinate (upwards with Select, downwards with Cancel). There is no Control mode, since Smiling Mice are too ferocious to be controlled!

### 3.2.3 Manual QLS text entry

But all these are secondary matters. By now you'll be impatient to get some text on the Page. All right, here goes. First define a Window into which your text will go. Move the cursor to the intended top left-hand corner and press Space. Then move the cursor to the intended bottom right-hand corner and press Space. The Window will turn green, and an Options menu will be displayed. Select 1 and choose the desired CSIZE from the next menu, after which the window turns red. (If you aren't sure, select Demonstration first.)

You may now select any of several printing styles for the text you are about to enter. If you are satisfied with the default, which is called draft, you can start typing immediately. But if you wish to enter highlighted text, press F4. A menu will permit you to select bold, italic, superscript, subscript or another highlight as the current style ; this will be reflected by the filled square in the information window moving to the selected highlight); there are also options to toggle underlining and inversing (i.e. exchanging black and white).

You may  also assign different  QLS fonts  from the disk  to the
different styles (option 9, which will offer a sub-menu).

Having made your  style selection, you can now  type text, which
will appear in  the currently selected style  (i.e. Draft).  The
usual cursor  movement and  character deletion  functions apply;
you can also use the up  and down arrow keys for vertical cursor
movement, or press F1  to delete a line or F2  to insert a line.
This is one place where even mouse owners must use the keyboard.

Note that  the text  you enter gets  word-wrapped, i.e.,  a word
that will no longer fit on a line will be moved to the next line
in its entirety.

Pressing F4  at this stage will  display a menu  which, together
with  its  associated  sub-menus,  offers  you  another  stab  at
changing the current font assignments.

Return to  the menuless Page  and press  Esc.  You will  now see
another menu, which  you may move to another part  of the Screen
by selecting 7  if you find it  obscures too much of  your text.
Option 1  gives you  an opportunity to  select various  forms of
text justification  ('Both' means  both left  and right)  and to
control  certain  justification  parameters  such  as  the
distribution of  filling space and exceptions  made for indented
lines as  well as the last  line in a paragraph  or Window.  The
selected ink  and/or paper for the  whole Window may  be changed
retroactively  (option 2).   Option  5 takes  you  back to  your
Window for  further editing if  you have spotted a  mistake (all
justifications are thereby cancelled and may have to be redone).
Options 6 and Esc both close  the Window, but 6 removes the text
with it  as well and  should only be  chosen if you  have really
changed your mind.

Esc is the normal  exit when you have finished your  work in the
Window: the part of the screen  that was your Window will return
to  paper  colour (white  unless  you  changed paper  colour  or
inversed  the Window)  and  you will  be  re-presented with  the
window outline, with a cursor  at the realised bottom right-hand
corner of the window. There are now four choices available.

If you now press  Space the Window will go red  (except where it
overlaps bits that were black, where it will show green) and you
will be presented with the Options menu once again - you can now
enter new text into  the same window area. You will  NOT be able
to edit what was previously entered  - it will be cleared if you
choose options 1 or 2.  Refer  to section 3.2.4 for more details
of what can be accomplished from the Options menu.

If before  pressing Space you use  the cursor keys, you  will be
able to resize the window.

A third choice is to press Enter.  The cursor turns into a C for
Control mode  - you can now  scroll the whole Screen  so you are
looking at  a different portion of  the page. Pressing  Esc here
will return you to the  "cursor in the bottom right-hand corner"
situation.

The final choice is to press Esc again. This will be interpreted
as a clear desire  to leave the text entry system,  and a cursor
will appear at the position  occupied by top left-hand corner of
the window. The entered text is now part of your page.

**3.2.4 What else to do with a Window**

You may  now start another Window.   If it  overlaps an existing
Window  and  you  select  the 'Enter  text'  option  again,  the
overlapping portion  will be  cleared.  Rather than  enter text,
you  can avail  yourself of  some other  options offered  by the
Window-open menu.  You may clear the Window (option 2), exchange
black and  white in  it (4),  or mirror  it horizontally  (5) or
vertically (6).   7 will give you  a chance to scroll  it (using
the cursor  keys, and without wraparound),  and 8 will  draw the
outline of the  Window (a 'box') in the current  ink colour onto
the Page.

If you want to scroll (say up)  a window with the mouse, put the
mouse cursor  above the  window and press  Select. To  scroll it
right, do a Select  with the cursor on the right,  etc. When you
finish, press Cancel - if the  cursor was inside the window, you
will  keep the  contents, if  the  cursor was  outside you  will
abandon them.

Option 3 is  the first half of a cut-and-paste  routine.  Try it
by opening  a Window wholly  or partly  over text in  an already
closed  Window.  Select  3.  No  effect  will be  seen, but  the
contents of  the new Window will  have been copied  into scratch
memory.  Press Esc.

We now come to the deferred description of the effects of the F4
key.   Option 1  in  the  menu now  displayed  is  the one  that
interests us.  Move  the cursor to an empty area  on the Screen;
this will  be the top left  corner of the paste.   You must make
sure that  there is room enough  on the Screen to  the right and
downwards (do  not worry  about  the  information panel,  we'll
automatically move it out of the  way if needed), else the paste
will not be made and you will hear a bleep.  Select 1.  Move the
cursor  elsewhere and  select 1  again.  You  can make  multiple
(even overlapping)  copies this  way.  The  cut area  in scratch
memory will remain intact  until the next cut is made  or the QL
is reset.

Options 2 and 3 of the F4 menu allow you to reassign and display
the QLS's, while Esc will take you back to Mode Text.

In each  F4 menu, there are  also navigation options  which will
move you to another  mode or to the main menu.

**3.3    Mode Font**

In Mode Font  we can also enter  text, but this time  we use the
high-definition fonts.   These are  composed of  characters that
may be from 8x8  to 48x48 pixels in size and  can thus show much
finer detail.  The definable character range is 32-191, which is
great for special symbols and foreign character sets.

The centre of  the information window now shows  the code letter
of  the  currently selected  HDF  (default  B). The  information
window also shows the current  settings of various highlight and
distortion  parameters,  as  well  as the  ink  colour  and  the
horizontal net offset (Space)  and the inclusive vertical offset
(Linefeed)  between characters,  both measured  in pixels.    The
defaults are  no highlights or  distortions, OR mode  (i.e. text
written over existing  ink will just be  superimposed), 3 pixels
between two characters, 20 pixels  between the base-lines of two
successive lines.

**3.3.1 Manual HDF text entry**

Let's put a few  characters on the Page.  Mode Font  is the only
one to  have a  Type sub-mode;  you reach  it by  pressing Space
after moving the cursor to where you wish your left margin to be
(no formal  Window will  be defined in  this mode).   The cursor
will turn to a T-shape, and you may start typing.

If you type beyond the right-hand edge of the Screen, the Screen
will automatically scroll until the edge of the Page is reached;
if you have  selected a section of the Page  near the right-hand
edge when entering  Mode Text, scrolling can  therefore not take
place.  Nothing will stop you from overwriting a margin.

Pressing the  Enter key  will take  you to  the next  line, just
below the first character  you typed. Automatic upward scrolling
of the  Screen will  occur if  a new line  takes you  beyond the
lower edge of the Screen, unless  the bottom edge of the Page is
reached.

The  Type sub-mode,  too, precludes  use of  the function  keys.
Press Esc to return from it.  You may now wish to change some of
the parameters shown in the information window.

### 3.3.2 Ringing the changes

Keyboard users  have two options: enter  Control sub-mode (press
Enter) and press the initials as given in the information window
(press  F5  for  further  help),  or  press  F4  and  make  menu
selections.   Mouse users  click  the desired  parameter in  the
information window.   Some of  the options  lead to  a space-bar
toggle,  others  to a  space-bar  cycle,  still others  go  into
sub-menus.

Selection of  the current font is  aided by a window  that shows
you  what each  font  is  like. Note  that  HDF  A is  composed
entirely of  graphic patterns rather than  the usual characters.
The  bold and  italic styles  are modifications  of the  current
font,  not a  different one  altogether,  as for  the QLS.   For
italics you can select from  16 leftward and 16 rightward slants
(see how  the sample  exclamation mark changes  shape as  you go
through the steps).

Rotation is an option unavailable for font B, because it is only
permitted  on 'square'  fonts (i.e.  if  width  and height  are
equal); where permitted, characters can be turned on either side
or stood on their heads.  Underlining may be black, grey or off.

Inversing an HDF is a complex function: you may choose to invert
any  of  8 horizontal  strips  that  make  up a  character,  any
combination, or the entire character!

The  magnification feature  permits you  to use  an HDF  several
times  its  original  size;  the  magnification  factor  may  be
different  in  the  horizontal  and  vertical  directions.   The
merging feature lets  you use some other  (fixed) character from
the  same or  another font  (font A  comes in  handy here)  as a
background on  which all  characters are  written.  You  will be
prompted  to select  first the  font and  then the  character to
serve as  a background, to  decide on  the merge mode  (AND, OR,
XOR) and to enable or disable the merging.

Whenever you have made a change, return to the Type sub-mode and
type until another parameter change is necessary.

Note that cursor movement is by one pixel only; similarly character deletion will remove only one pixel column in the current font height.  This is because the characters of an HDF are usually of different width so as to permit proportional spacing; and italicising makes for further variation in width.

You will by now need no coaching  to move to the next mode, Mode Draw.  If you do, look up Navigation in the Alphabetic Section.

**3.4    Mode Draw**

This is where you do your freehand drawing.  With 128 brushes at your disposal, nothing much can stand between you and the Tate.

The centre of  the information window shows you a  palette of 64 brushes, with the  current one  repeated on  top.  The  current merge option  (OR) is highlighted.  Besides the usual  AND, OR, XOR (which you  will find  explained  in the  QL User  Manual's Keywords section and in the  Alphabetic section of this manual), there is a fourth option, OVER (i.e. overpainting).

The  cursor is  red  and  in the  shape  of  the current  brush. Whenever you press the space bar, a 'footprint' of the cursor in the current  ink will be  left on the  Page.  You can  undo your work by pressing U when  in Control sub-mode (or clicking Cancel on the mouse).  This will restore everything since the last mode change, cursor-key operation or  Screen scrolling; a second undo operation will restore the state before the first undo.

Leaving a trail is one area  where a mouse makes life easier: to do it  best from  the keyboard,  hold SPACE  down and  press the cursor key.

From the Control sub-mode (or from the information window if you have a  mouse) you can switch  brushes (they  will cycle through the  palette), change  merge modes  or palettes  or inverse  all brushes (so that  you  have  an effective  4  palettes at  your disposal).  To swap  brushes  with the  mouse, use  the  S or  I feature at the base of all the paintbrush sets.

There is a special feature for mouse control in Mode Draw: it is called  Characteristics  and  available via  F1.  Changing  the parameter from  0 to  1, 3 or  7 will affect  the way  the mouse controls  the brush  so  as to  prevent  undesirable merging  of stippled brushes.

Note that stunning effects can be obtained  by  going  over  the same area with two different brushes in succession, depending on the merge  modes. If it is  too late for the  undo function, you can sometimes erase  unwanted artwork by using the  same brush a second time in XOR mode.

Now that  we've left our  mark on the  Page, let's move  to Mode Line.

**3.5    Mode Line**

This is where the engineers come into their own.  Line segments, arcs, rectangular boxes, circles and ellipses can be drawn here, the last three optionally filled in the ink colour.

The centre of the information  window of Mode Line just contains a kind of menu for mouse  owners, listing the shapes that can be drawn and giving a fill parameter  and an undo function, as well

as the usual options for ink and paper.

When you  first enter this mode,  the selected shape is  a line,
and a  suggested line is  shown in green  on the Screen.   It is
highly unlikely that you can use  it as it is; therefore you can
drag one end all over the Screen with the cursor, then place the
cursor  on  the other  end  by  typing X,  and  drag  it to  its
destination.  On  the mouse, Cancel replaces  X.  When satisfied
with the  placement of the line,  press the space bar.   You can
start on the next line immediately.

To draw a  different shape, say a  box or a circle,  go into the
Control sub-mode (the Cancel button on  the mouse has a state in
its cycle  that will  enable the C-shaped  cursor) and  type the
initial of the  desired shape (or move the mouse  pointer to the
appropriate line  in the  information window and  click Select).
The two points between which the cursor can be toggled will then
constitute  the diagonal  of the  box (as  box sides  are always
parallel to the screen edges, this is unequivocal) or the radius
of the circle. This auxiliary line will  also be shown  but will
not go onto the Page when the shape is finalised.

Boxes whose  sides are not parallel  to the edges of  the screen
will have to be constructed from lines.

Arcs  and ellipses  cannot be  uniquely determined  by a  single
line.  The  line will  constitute the  chord of  the arc  or the
semi-major axis of the ellipse  (something akin to the radius of
a circle)  and will again not  show on the final  Page.  But the
angle  of the  arc  and  the eccentricity  of  the ellipse  need
separate adjustment.   Press Enter and use  the + and -  keys to
adjust; or  Press the  Cancel button  on the  mouse until  the C
cursor shows, move it into the information window and click + or
- as the case warrants.  Note  that you cannot go beyond certain
reasonable values  of angle or eccentricity,  particularly since
the QDOS arc routine has a bug for extreme values.

The fill  toggle and the undo  function are also  available when
the  C cursor  is  active.   F4 in  Mode  Line  only serves  for
navigation.

## 3.6   Mode Fill

This is  the last of the  graphic modes.  It allows  you to fill
any  white area  enclosed entirely  by black  or any  black area
enclosed  entirely  in  white  with  any  pattern  composed  of
repetitions of  an  HDF character.   The area  filled may  be as
small as the loop in a "6" or as large as the entire Screen (but
not beyond).

The centre of  the information window again  shows the available
options:  change  font,  change character,  exchange  black  and
white,  and  undo.  They  are  all  available from  the  Command
sub-mode,  or from  the  information window  itself under  mouse
control.  The information window is  completed by a window large
enough to give an idea of the effect of the fill texture.

The default  HDF, not surprisingly, is  font A with  its various
textures, but you can switch to  a regular font and use, say, an
ampersand in an extravagant style as a fill pattern.

To perform the actual fill operation, exit from Control sub-mode
by pressing  Esc (not required  if you  have a mouse),  move the
cursor inside  the desired  area and press  the space  bar.  The

operation will be performed in two passes: the area first slowly changes to green and then rapidly to the desired pattern. Filling may be aborted midway by pressing the Capslock key; or it may be reversed by pressing U in Control sub-mode (or clicking Undo).

When you have done all of your manual editing of the Page, it is time to navigate back to the Main Menu. It is actually wise to do so from time to time during your manual editing efforts, to cast a glance at the cameo and see whether the overall Page structure is what you'd planned it to be.

## 4.   LOADING AND SAVING

Both text and pictures may be put on the Page not only manually but also by loading from a previously saved file. Together with options for saving and reloading a complete Page, as well as several auxiliary file operations, these functions are available from sub-menu 5 of the Main Menu. We shall follow the same order of presentation as for manual entry and treat the functions that correspond to Mode Text, Mode Font and the graphic modes first.

## 4.1   Loading Text

This is the best way of getting text onto a page.

Text that is loaded onto a Professional Publisher Page must of course have been previously saved - saved Professional Publisher pages comprise dots (pixels) and not characters, from which text is not retrievable as a character stream except by AI techniques which you will have to discover yourself! This may have been done by means of the QUILL text-processing system that came with your QL, either with the Save command (which produces a file whose name ends in _doc) or with the Print command (which produces a file whose name ends in _lis). On the other hand your file may have been produced with the aid of Digital Precision's The Editor or with some other program that produces an ASCII file (the program's manual will say whether it does) or indeed from a SuperBASIC program. All of these can be read by Professional Publisher.

At this stage it is worthwhile stating that, memory permitting, the ideal environment for Professional Publisher is to work alongside with Digital Precision's THE EDITOR SPECIAL EDITION. Do your initial text work in EDITOR, save the file (to ramdisk if you wish) and then load in the file with Professional Publisher. To multitask EDITOR with the publisher is easy: boot up publisher, choose option 8 and then 1 from the main menu, press CTRL + C, and type in EXEC device_EDT_BIN where device is the location of the editor disk. Then CTRL + C will toggle between the BASIC, publisher and EDITOR.

By way of contrast to manual text entry, which is mainly recommended for short texts, reading from a file offers the following extra features:

- You may define several Windows, which will be filled in the order in which you defined them.
- You may distort the Windows so that the area you wish to reserve for text will neither overlap an area destined for graphics nor leave unwanted white space. The same feature is also useful for dropcaps.
- Instead of defining any Windows, you may simply fill the whole

Page with text or distribute your text over two to nine columns of equal width and equal spacing.
- Since much the same principles apply to the loading of QLS and HDF text, it is possible to have justified margins even with the proportionally spaced HDF characters with kerning down to pixel resolution.

## 4.1.1 Where will you put it?

All right, let's see how it is done. From the Main Menu you select first 5 and then 4. Your first choice will be where the text is to go.

You may use previously defined Windows, either saved (option 2) or the ones last used in the current session (option 4); or you may use the columns shown on both the cameo and the Page by the vertical column lines, within the limits of the horizontal margin lines (option 3). Subsection 5.2 of this Chapter will tell you how to redefine the columns, including a non-column, whole-Page option. Note that the horizontal column guides will have no influence on the loading area; each column will be understood to be bounded by the top and bottom margin only.

A general note: At various points within Professional Publisher you are asked for a filename. If there is no Escape option indicated, but you want to escape from the option, the trick is to delete (using Ctrl and the left cursor key, as usual) all the characters in the default filename presented and then press Enter.

In many cases, however, you will wish to take option 1, i.e. the definition of a new set of Windows. You will now be working in the cameo, and again you will have the help of a close-up for fine manoeuvring. The panel displayed on the screen tells you that you are defining Window no. 1; you do this as for a manual-entry Window by moving the cursor and pressing the space bar to define opposite corners. Once a Window has been defined, you are invited to define another one by pressing the space bar a third time and going through the motions again. Your Windows may overlap, but text loaded into the later Window will blank out any text in the earlier one. When you have defined your last Window, press Esc. This will take you to a new menu.

Before continuing (option 1), you may decide to save your Windows on disk for re-use. If you take the save option, you are prompted for a filename in the usual way, and if you have forgotten to switch your disk to the unprotected state, an error message will invite you to do so. Reloading, as you will remember, requires the selection sequence 5, 4, 2 from the Main Menu.

There is also another, more interesting option called 'Wraparound windows', which enables you to distort the vertical sides of any Window into a polygon of up to 33 lines, so that corners may be cut and recesses provided for graphics, dropcaps, or simply creative Window shapes. Select 2, and the left-hand edge of your Window No. 1 will be highlighted by square end points filled in red. You may now move the cursor to any point on the cameo within the latitudes defined by the Window's top and bottom edges and press the space bar. A new point will be marked there, and the edge will be distorted to include that point. You may go on to define up to 32 such points, which will yield quite a complicated Window boundary. If not satisfied, you can successively undo your work by pressing Esc. The Enter

key, on the other hand, terminates  work on the current edge for
the moment and takes you to  the right-hand edge of Window no. 1
(and  then  successively through  the  edges  of all  the  other
Windows). Pressing  the Enter  key when you  are working  on the
right-hand edge of your last  Window will trigger a prompt which
permits  you either  to start  all over  (if you  feel you  have
further corrections  to make, option  1) or to  declare yourself
satisfied (option 2).

The  main point  of Wraparound  windows is  to pour  text around
existing  "things" on  the  page - titles,  other text  (either
created in Mode  Text, Mode Font or loaded  from file), pictures
(created in  Modes Draw, Line and  Fill, or perhaps  loaded from
file as described in section 4.2) or whatever.

Note  that there  are really  no  restrictions on  the shape  of
Wraparound  windows -  you could  make them  circular if  you so
wished (to be pedantically  accurate, not circular but 66-sided,
convex, regular polygonal, which  is a damned good approximation
to circular!), and they can be re-entrant (i.e., non-polygonal).

It is  a good idea  to create  a number of  different Wraparound
windows, with  a range of  sizes and  shapes, and save  them (as
described earlier) both individually and in useful combinations.
This  will give  you convenient  shapes to  "pour" text  into at
later stages.

### 4.1.2 Where will you take it from?

The Continue option (1) will  now take you to a  menu which asks
you the name of your text file and its type.  Select 1, edit the
filename  and press  Enter.  The  default for  the file  type is
ASCII;  if you  wish to  change it,  select 2  to cycle  through
QUILL_LIS and QUILL_DOC; the default  itself can be changed with
the Configurator program (see  Subsection 9.1). When the correct
filename and file type are visible on screen, select 3.

### 4.1.3 Text format

The next menu is among the  most versatile in the whole program,
which is saying a great deal.  As a default it suggests that you
wish to load QLS ('STANDARD')  text to CSIZE 0,0 , ignoring both
linefeeds and  highlights, with  word-wrap and  justification of
both  margins on.  If that  happens to  be what  you want,  just
select 1.  But you have plenty of other options.

Option 6 toggles between QLS and HDF characters; this is perhaps
the most important  decision you have to make  at this juncture.
Next there  is Configuration  (option 2), which  decides whether
words overflowing  a line are to  be broken.  The cycle  is WORD
WRAP (never),  HYPHENATE (sometimes) and OFF  (always).  In case
you select  HYPHENATE, you'd  better follow  up by  selecting 0,
whereupon  a  sub-menu  will  ask  you  the  minimum  number  of
characters that must be left in the first and in the second part
of a broken word (we at  Digital Precision of course never break
ours).  The default is 3, and values from 1 to 8 are accepted.

Linefeeds  may  be  included  or  ignored  (option  3 acts  as  a
toggle).  If you  decide to  ignore the  linefeeds in  the text
file, a space will be put wherever the original has a new line.

Highlights such  as underlining, bold print,  subscripts and the
like may also be included or  ignored (option 4).  If you opt to
include them,  the program  will do all  that's necessary  for a

QUILL file.  In the case of  an ASCII file, however, there is no
standard rule  that says  which control  characters in  the file
correspond  to   which type   of  highlight.   Changing  these
definitions and  also the  assignment of  specific fonts  to the
different types of highlight is what option 7 is all about.

The sub-menu you are shown on selecting this option is different
for QLS  and HDF  text.  In the  case of QLS  you are  shown the
currently assigned control character and (except for underlining
and  inversing)  the  two  fonts (for  'regular'  and  'special'
characters; remember?) that will be  used to represent them.  On
selecting  any  number  you  will  be   asked  to  enter  a  key
combination (one of the keys pressed must be Ctrl) that is to be
the new control character for  that highlight, and if applicable
you will also get the choice of first and second fonts as in the
manual-entry  mode.

In HDF the menu items are not numbered.  When you select a line,
that line  blanks and you have  to enter in succession  the code
letter of the font for that highlight, y/n decisions on boldness
and italics (yes and no will  be represented on screen by filled
and unfilled  circles respectively), the amount  of linefeed and
inter-character  space,  both  in  pixels (defaults  20  and  1
respectively), and the merge parameter (default off).  If any of
these terms  seem unclear, check in  A 3.3 or in  the Alphabetic
Section.   Esc  terminates your   interlude with  the fonts  and
control characters.

Option 9  of the  big menu (Character  size) also  has different
effects depending  on whether  QLS or HDF  has been  selected in
option  6.   For  QLS  loading, you  are  asked  the  two  CSIZE
parameters  in turn (width  can  be from  0  to  3 for  regular
characters,   corresponding   to  6,   8,   12   and  16   pixels
respectively, and  1 only for extended-width  characters; height
can be  0 (10 pixels)  or 1  (20 pixels).  You  are subsequently
asked the height of the linefeed (default 10 or 20, depending on
your choice of  second CSIZE parameter; values from 0  to 99 are
accepted).   With an  HDF selection  you are  asked the  desired
magnification of the  basic font size in the X  and Y direction;
linefeed has already been taken care of under option 7.

Finally there is the question  of justification, which of course
only arises  (except for the  last line  of a paragraph)  if you
have selected  either word wrap  or hyphenation under  option 2.
Option 5 gives you the choice of cycling through the sub-options
already known  from manual-entry  mode: Both (both  edges), off,
left, right and centre, while option 8 lets you tell the program
under which  circumstances justification  should be  ignored and
how the extra  empty pixel rows required  for full justification
should be distributed (i.e. how  many per cent between words and
how many between characters).

## 4.1.4 Starting from mid-file

With  all parameters  set, we  are again  ready to  move on  and
select option 1 in the big menu.  The first 64 characters of the
file will appear at the bottom  of the screen.  But who says you
want  to start  the first  Window on  your Page  with the  first
character of  your text? A lot  may have gone onto  a previously
prepared Page  that may even have  been printed already;  so you
must  have the  option of  starting the  filling  of Windows  or
columns with any character in your file. This is why you are now
offered an opportunity to move about in the text until the first
character in the  bottom window is the first  character you want

to load.  When this has been  achieved, press Esc.  You  will be
rewarded  with the  message 'Please  wait', and  the columns  or
Windows  in  the  cameo  will start  to  fill  with  red  lines,
indicating the progress  of the loading.  Note  that the columns
or Windows will  be cleared before loading; thus  nothing of the
previous contents will be left even if the new text is shorter.

You can stop the  loading at any time by pressing  Esc. An 'Are
you sure?'  message will  be displayed, and  you can  resume the
loading by entering N or abort it by entering Y.

If you want to make a detailed check about the appearance of the
loaded  text, navigate  to one  of the  manual-entry modes.   If
you  are not  satisfied with  the appearance  of the  text (e.g.
there  are no  linefeeds, some  lines start  with 'inexplicable'
spaces, characters appear too  spaced-out, word-breaks occur too
close to the ends, or you  don't want hyphenation after all), go
back to the Main Menu, and reselect 5 and 4.

Then make  the appropriate  changes in  configuration (including
hyphenate parameters),  linefeeds, highlights  and justification
(including parameters) before reselecting '1. Put text on page.'

If  your  text  still  looks  weird,  do  not blame  Professional
Publisher! Instead, master this option by experimenting.

## 4.2    Loading Pictures

### 4.2.1 Where does the picture come from?

Like  text, a  picture to  be loaded  must previously  have been
saved. (But you can copy a picture  from one part of the Page to
another as well, and because this is so similar to loading, both
the program and the manual treat it as a kind of loading).

A  picture saved  on file  has either  been produced  by Digital
Precision's top-of-the-range graphics program, EYE-Q, or in some
other way  (which includes  a SuperBASIC  program that  uses the
SBYTES command  - something like SBYTES  filename, 131072, 32768
as the  screen starts at address  131072 and has  length 32768).
Professional Publisher can deal with either if you tell it which
to expect.   If you give the  wrong type, you'll get  garbage on
the screen,  in which  case just  have another  go. By  the way,
EYE-Q files must  not be of the monochrome  type (compression is
fine); but  you can always reload  a compressed file  into EYE-Q
and re-save  it without compression.  By  the way, all  the clip
art that comes with Professional Publisher is of the EYE-Q type.

When using WCOPY on your system be careful with compressed EYE-Q
files. Some  WCOPY versions  write to areas  in the  file header
where  EYE-Q squirrels  away  information! Experiment with  the
supplied  clip-art files  -  if they  reload  perfectly after  a
WCOPY, the alarm is off.

Easel  screens  can be  output  as  _pic  files, which  are  the
equivalent of SBYTES'd screens.

The 'Load picture' function is started by the selection sequence
2, 5, 3 from the main menu.  Professional Publisher will ask you
the source of the picture; if SBYTES (the default) or EYE-Q, you
will be  prompted for a  filename; if  from the Page,  the cameo
will be shown, giving you a chance to select opposite corners of
the picture with the usual presses of the space bar.

The selected picture will  now be put on the screen -  in 8 or 4
colours or in black-and-white, depending on the source -, but it
is in scratch memory  only.  It will only be placed  on the Page
through a cut-and-paste operation much like the one described in
Subsection 3.2.4 (the  paste part is actually  the one described
there).   But before  you define  a cut  on the  loaded picture,
you'll  be given  the opportunity  to modify  and distort  it in
several ways.

## 4.2.2 Pictorial tricks

If you press Esc, a menu headed 'Tricks' will be displayed.  You
may use any, all or none on your picture.

Option  1 (Texture)  should be  selected for  a colour  picture;
but you may wish  to recolour it first by using  option 7 below.
Press 4 if it is in 4 colours,  or 8 if it is in 8.  The picture
will convert to black-and-white,  but with a suitable grey-scale
conversion  as in  a photograph.   If  you neglect  to use  this
trick, only true black and white will be printed.

Options  2 (Invert)  and  3  (Reflect) are  well  known by  now.
Options 4 (Symmetry) and 5 (Magnify)  ask you to  designate the
horizontal or vertical picture half  that will be used to either
be mirrored in the  other half as in a playing  card or blown up
to fill  the area  of the  whole picture.   Option 6  produces a
forty-five degree slant of all vertical lines in the picture (to
right or left at your option); pixels that are thereby moved off
the screen reappear on the other side.  Option 7 (Recolour) is a
de-luxe version  of inversing; you  may not only  exchange black
and white  but (if  you still  have a  colour picture)  turn all
pixels of a  given primary colour into any other  (or leave them
unchanged). The space bar cycles through the 'to' colours in the
selected line.  Reduce does what it says - you may select either
horizontal  or vertical  compaction  to 7/8  the previous  size.
Option  9  (Scroll)  permits  both  8-pixel  and  single-pixel
scrolling (use the  cursor keys  alone or  in combination  with
Ctrl; alternatively click  the desired  arrow with  the mouse);
press Esc when done.

## 4.2.3 Cut and paste

If you  have made some blunder  in using the tricks,  all is not
lost; simply return to the Files  menu by selecting 0 and reload
the  picture. If  you are  satisfied, though  (and this  may be
the case  without your  even selecting  the tricks  menu), press
Esc.  You will now have to decide  on the area of the picture to
select for cutting.  If your picture fills the whole screen with
its width of 512 pixels, the cut must not encompass the whole of
it, because there  will be no way  to paste it on  a Screen only
400 pixels  wide.  (If this happens  to be your  heart's desire,
load the picture twice and do separate cut-and-paste operations.

Define opposite corners of the cut in the usual way (two presses
of the space  bar or clicks of the Select  button).  The picture
will  disappear from  the screen,  but  the  cut will  remain in
scratch memory (destroying, however, any  cut made in Mode Text,
because this uses the same  scratch memory).  Now for the second
part of the operation: navigate to Mode Text, press F4, move the
cursor to the intended top left corner of the paste and press 1,
in  exactly the  same way  as  for a  cut Window.   Again it  is
thoroughly feasible to paste several copies of the same cut.

## 4.3   Saving and Loading Pages

The Page saving and loading functions are accessed from the Main Menu by the selection sequences 5, 1 and 5, 2 respectively.

When saving a Page, you are first asked whether you wish to save the whole Page or only a section thereof; in the latter case you are prompted to define the section on the cameo in the usual way. You are then asked for a filename; we recommend one that ends in _scr or _pic. If there is already a file of that name, you are sensibly asked whether you wish to overwrite it; if not, you are prompted for a new filename.

Loading the Page works in reverse (surprise!). You must first give a filename; Professional Publisher will realise whether it is a complete Page and load it without further ado if it is; otherwise you will be prompted to move a shuttle of the correct size across the cameo to determine where on the Page the loaded section should go; press space/Select to finalise.

If you wish to load a Page that was saved under the previous version, Special Desktop Publisher, you must first convert it for use by Professional Publisher - refer to Subsection 9.2.

We shall now provide a description of the Professional Publisher page (or page fragment) file format - useful if you want to tinker or to write your own dedicated printer driver. If you have better things to do with your time, skip this section.

The first 18 bytes of the file are a header. They are:

DTP3PAGEaabbccdd??

where:

DTP3PAGE = 8 byte invariant identifier

?? = contents do not matter - we set both bytes to ASCII(0)

aa = Width (horizontal measure) of saved portion, in pixels

bb = Height (vertical measure) of saved portion, in pixels

cc = Offset of left edge of saved portion from left hand edge of
     page, in pixels

dd = Offset of top edge of saved portion from top edge of page,
     in pixels

aa, bb, cc and dd are word values, with the less significant byte first. For example, if the default A4 page was being saved in toto, aa would be 960, bb would be 800 and both cc and dd would be 0. Correspondingly, the sequence of ASCII values of the first 18 bytes would be:

68, 84, 80, 51, 80, 65, 71, 69, 3, 192, 3, 32, 0, 0, 0, 0, 0, 0

since 3*256+192 = 960 and 3*256+32 = 800.

After the 18 byte header, the screen data is stored in successive horizontal strips each of one pixel "height", strip by strip. Within each strip in turn the pixels are recorded going from left to right. Each white pixel is represented by a set bit (i.e., 1) and each black pixel by an unset bit (i.e., 0). So if your page comprises a lot of white space, you will see

lots of bytes with value 255 (128+64+32+16+8+4+2+1).

Note that going from left to right in a byte, the most
most significant bit (x128) is first and the least significant
bit (x1) comes last.

If the width (horizontal measure) is not an exact multiple of 8
pixels, it will be padded out with white space (i.e. 1 bits) to
the next higher multiple of 8 pixels. This is because we want to
make life simple for those writing printer drivers for
Professional Publisher files - each horizontal strip will be
represented by an integral number of bytes.

The length of a Professional Publisher file will hence be:

18 + bb * INT(aa / 8 + .9) bytes

as INT(aa / 8 + .9) is the number of whole bytes required to
accommodate aa bits. The file would comprise, after the 18 byte
header, bb sets of INT(aa / 8 + .9) bytes, with no separators.

For a saved page of default dimensions, this works out to:

18 + 800 * INT(960 / 8 + .9) = 18 + 800 * INT(120.9) = 18 + 800
* 120 = 96018 bytes.

## 4.4    Auxiliary File Functions

There are some SuperBASIC file operations that would be useful
occasionally when working with Professional Publisher. All of
them can be accessed from the Main Menu by the selection
sequence 8, 1, followed by Ctrl+C; pressing Ctrl+C again will
cycle through any other tasks running and ultimately return to
Professional Publisher's initial screen.

Some of the more useful file functions, are, however, also
available from within the program to make life easier for you.

### 4.4.1 Directory

The Directory function is accessed from the Main Menu by the
selection sequence 5, 5. If you enter a device name, such as
flp1_, you will get a full directory of that device. If,
however, you add anything after the underscore, this will be
taken as a 'wildcard', i.e. the listing will be of all filenames
containing that string. If, say, your selection is flp1_qls,
the listing will give all the QLS font files whose name end in
_qls but also a file called EQLS42 (the wildcard is case-blind).

The listing will stop after a Window is filled; you may abandon
it by pressing Esc or continue by pressing any other key. Esc
is also de rigueur after the last item has been listed.

### 4.4.2 Delete

This is an extremely simple function. You select it with the
sequence 5, 6 from the Main Menu and supply the name of the file
you wish to delete. If it wasn't there in the first place,
Professional Publisher (politeness being a trait of
professionals if not of SuperBASIC) will tell you so.

### 4.4.3 Format

Again an easy one. The sequence from the Main Menu is 5, 8.

Because of the dire consequences of an unwanted erasure of a
whole medium, you get a warning message, and the formatting is
only executed if you confirm your intention. You get two sector
messages in succession: on a floppy disk, the first should read
1440/1440 sectors, the second 1434/1440 sectors, because the
mapping and directory files, each taking the three-sector
minimum, will by then be inscribed on the disk.

**5.      PAGE GLOBALS**

There are several operations which affect the whole Page, so
that neither manual editing of a given section nor loading text
into a sub-area of the Page, seems an appropriate part of the
program to look for them. This is where the Page Globals
sub-menu, which is reached from the Main Menu by selecting 2, is
useful.

**5.1    Number of Pages, Orientation, Dimensions**

For one thing, you may have two Pages in working memory at the
same time; so there must be a means to move from Page 1, which
is the start-up default, to Page 2 and back again. Option 1 of
the Page Globals sub-menu will do the trick, and the new
Page number will be displayed in the bottom strip. If it isn't,
you haven't got enough memory left to hold two Pages at the
current dimensions.

You may also wish to change the orientation of the current Page
(the other Page won't be affected) from the start-up default,
Portrait, to Landscape (sideways) or back again. This is done
by selecting option 2 of the Page Globals sub-menu. The new
orientation will be displayed in the bottom strip but not on the
cameo; rather, the cameo in Landscape orientation should be
viewed with your monitor stood on its right side (in your
imagination, we hope), since the right-hand edge of the cameo
will correspond to the bottom edge of the Page. A few taps on
the cursor keys will verify this.

Remember that any change of orientation must be performed on an
empty Page, or you will not be able to get a useful printout.

A similar caution applies to a change of Page size (which will
affect both Pages) in pixels. Select 5 and then 1 from the Page
Globals menu; when prompted, enter the desired width, then the
height. Width values from 480 to 1920 and height values from
400 to 1600 will be accepted but only the part of your entry
that is divisible by 80 will be executed. Again the change will
be reflected in the bottom strip; the cameo will also change
size, but for the larger Page sizes its scale may be halved so
that it will fit on the screen without obscuring the Main Menu.
The defaults are 960 pixels width and 800 pixels height; they
may be changed with the Configurator program, as may the working
memory set aside for holding the Pages (see Subsection 9.1).
You will get an error message if available memory isn't
sufficient for even a single Page of the selected dimensions.
The maximum of 1920x1600 is achievable on a TRUMPCARD QL,
provided you have reconfigured the supplied version to allocate
384,000 bytes for the page.

It is also possible to change the Page size in units by
selecting 5 and then 2 from the Page Globals menu. As this is
for convenience in layout only and not reflected in the actual
size of the printout, it is permissible even with something
already on the Page. The size indications along the cameo will

change, as will the layout guides, since this depends on the ratio between the distance from the edges of the Page and the Page size. You will be prompted for two values in cm or inches, whichever is the current unit. Up to 5 characters with values from 1 to 999 can be entered.

While we're at it, we may want to change the units from the default cm to inches or back again. The selection sequence from the Page Globals menu is 2, 8, 6.

## 5.2 Layout Guides and Cameo Grid

We next come to a series of commands affecting the layout guides, i.e. margins (selection sequence 2, 8, 1), columns (2, 8, 2) and column breaks (2, 8, 3). All of these sub-menus prompt you for values in the current units and offer defaults: all four margins 1 cm off the respective edges; 4 columns with a gutter (column gap) width of .4 cm; 3 column breaks at 7.4, 14.8 and 22.2 cm from the top. Generally up to 6 characters can be entered, and values that will not leave at least 1 cm per column and a non-zero column height will not be accepted. Another unacceptable value is 1 column; if you wish a Page not divided into columns, enter 0. All of these commands will of course change the respective lines on the cameo and on the Page. You may, however, also make these lines disappear by selecting 2, 8, 5, 3 from the Page Globals menu, and to reappear again (2, 8, 5, 1).

All current guides may be saved for re-use on a later Page (selection sequence 2, 8, 7); for reloading select 2, 8, 8. You must enter a filename in either case; an error message will be displayed if the file you try to load doesn't contain guides.

The final Page Globals values are the horizontal and vertical mesh width of the auxiliary grid that can be superimposed on the cameo: the selection sequence is 2, 8, 4, 1 for the horizontal gap and 2, 8, 4, 2 for the vertical. The defaults are one-sixth the Page width and one-eighth the Page height; the accepted minima are one-eighth and one-tenth respectively. This grid can only be shown when the guides are switched off; the selection sequence 2, 8, 5, 2 will do both.

## 6. EDITORS

Professional Publisher includes a veritable treasure-house of fonts, both QLS and HDF, for your use. Many users will find the selection more than sufficient for their purposes; but we certainly do not wish to stop creative people from designing and using their own fonts. That is why the package also includes two editor routines for the design of the two types of font.

## 6.1 The QLS Editor

### 6.1.1 Code letter assignment

The QLS Editor is accessed by selecting 4 from the Main Menu. You will first be shown a menu consisting of the 12 code letters A to L, each one followed by the first 17 characters of the font assigned to it. Pressing the right arrow key will toggle to another selection of twelve fonts labelled M to X. If there is a letter that has no current font assignment (this is not the case at start-up), the letter in question will be followed by a blank line. Fonts A, B, C and M are needed by the program and can therefore not be selected for editing, deletion or

overwriting by loading.

You must now select the code  letter to which you wish to assign
your new font.   If you wish to start your  design from scratch,
select a letter that is followed by a blank line, or if there is
none, decide on  one which you wish to remove.   (You can always
reload it  from file later).  But  you may also select  the code
letter of an  existing font which you wish to  modify.  You will
be  shown a  new menu  which includes  an option  to remove  the
current  font (select  6).  This  may also  be taken  to reclaim
working memory.  It takes you back to the Main Menu; for further
editing reselect 4 and the code letter of your choice.

A new window will open at  the bottom of the screen, showing the
current appearance  of the character  set you selected  in black
(two  lines; nothing  for an  empty set)  and the  corresponding
characters  of the  standard set  in red  above them,  giving an
indication   of   the   keypresses   required   to  produce  the
corresponding  black character.  (For  the compound  keypresses
required  for  foreign  and   special  characters,  consult  the
Concepts Section of the QL User Guide (entry 'ASCII code').

If you are designing a new set, you may wish to make it either a
first set  ('regular' characters, ASCII 31  to 127) or  a second
set (foreign and special characters,  ASCII 128 to 191).  Select
option  4 and  then  the  desired range.   Your  choice will  be
reflected in the red characters in the bottom window, which will
start with a checkerboard pattern for  a first font and with the
umlauted 'a' for a second font.

## 6.1.2 Editing

To start editing, select 1.  The  bottom window will now sport a
green bar cursor above the first character, the top left part of
the screen will show an  enlarged pixel grid with that character
magnified, and  a menu  will be displayed  at screen  top right.
Let's assume you wish to  design or redesign the first character
in the font.   The cursor in the  top part of the  screen may be
moved between the grid (where it  will show as a square) and the
menu (where it  will show as a highlight bar).   Move the cursor
about in the grid and use the space  bar to turn a square to ink
colour and Esc to  turn it to paper colour.  The  grid itself is
colour-coded to warn you that  only the six leftmost columns may
have pixels set to  ink colour if the font is to be  used in all
CSIZEs; otherwise  only CSIZES  1/0 and  1/1 will  be supported.
(Do leave the  first column blank as well for  spacing; in other
words, use columns 2 to 6, or 2 to 8.)

Some global changes to a character  are possible if you move the
cursor  to the  menu.  You  may clear  the whole  grid to  paper
colour (select 4), exchange  ink- and paper-coloured pixels (5),
mirror the grid vertically (6) or horizontally (7).

All changes are first made to scratch memory only; they won't be
taken over into working memory until  you move the cursor to the
menu and select 1 (store character).

You may  now wish to edit  a new character. Move  the cursor to
the menu and select 2.  Caution: If you do this  (or select Esc
to  finish editing)  without having  selected 1  beforehand, any
changes made to the previous  character will be lost.  The green
cursor in the bottom window will now be enabled and may be moved
to  the desired  character. Press  the space  bar, and  the new
character will appear in the grid, ready for editing.

If you wish to  save yourself some work by designing,  say, an F
by  removing  pixels  from  an already  defined  E,  proceed  as
follows.  Select F as your new character as above, then move the
cursor into the menu and select  3.  You will be prompted to use
the  bottom  (green)  cursor   again  to  choose  your  template
character and confirm your decision by pressing the space bar.

### 6.1.3 Saving and loading

When  your  editing  is  done,  press  Esc  to  return  to  the
intermediate  menu.   You  will   probably  want  to  save  your
character set now, as it is most unlikely that the fruit of your
labours is to be used in the current session only.  Select 2 and
enter the  filename of your choice  when prompted (we  suggest a
name ending in _qls).

When you want to load a saved  set, select 4 and the code letter
of  your choice  from the  Main Menu  as above,  followed by  3.
Enter the  desired filename when  prompted; you'll get  an error
message if the file doesn't contain a QLS.

Option 6  (not Esc by way  of exception) will return  you to the
Main Menu.

### 6.2   The HDF Editor

### 6.2.1 Code Letter Assignment

The HDF Editor is accessed by selecting 3 from the Main Menu.  A
thin vertical  strip at centre screen  will show a  selection of
characters from the current font  (default: font B), with arrows
indicating  that  the  topmost  character is  considered  to  be
current.  If no font is assigned to the current code letter, the
vertical  strip  will  be  empty.  Font  A,  which  consists  of
textures needed  in Mode Fill,  cannot be selected  for editing,
deletion or overwriting by loading.

Select the code letter of your choice with the horizontal cursor
keys.   You may  wish to  select an  empty font  if you  want to
design your  new font from  scratch or  load a stored  font into
that slot.  Confirm your selection by pressing Esc.  A five-item
menu will now appear, with item  4 reading 'Remove font' in case
of a  previously defined  font, or  'Create font'  in case  of a
previously empty  font.  In addition, a  strip at the  bottom of
the screen gives the code letter, dimensions and RAM requirement
of the current font (default: font B, 16x24 pixels, 5136 bytes).

If you wish to create a new font in a previously empty slot, you
must select  4 and decide on  the grid dimensions.  You  will be
prompted to enter the  width and height in pixels (from  8 to 48
in steps of 8, or 0 to  cancel your decision).  Note that if you
wish to avail  yourself of the rotation  feature (see Subsection
3.3.2), grid width and height of the font must be the same.

In  case of  an  existing font,  option 4  will  remove it  from
working RAM, freeing  the associated working RAM,  and return to
the Main Menu. When asked for a name under which your new HDF is
to be saved, we recommend you use one ending in _hdf.

### 6.2.2 Editing

The principles of HDF character editing are much the same as for
QLS characters.  All HDF fonts are defined for ASCII codes 32 to

191 (though you need not go as far as 191!); there is therefore no choice between a first and a second font. Neither is there a CSIZE; the magnification that takes its place is decided not in the Editor but during the preparation of text entry. What can be done, however, is to cut the effective width of a character to achieve proportionality, and to define the base-line where the underline character will be printed. This can obviously also be used as a height reference for characters with 'descenders' (g, j etc.). If you select A, the cursor will move the horizontal and the vertical red line that represent the right edge and the base-line of a character respectively. The space bar is again used to finalise your choice. For natural proportionality between, say, 'W' and '!' it is recommended that the leftmost column of the grid include at least one pixel in ink colour and that the vertical red line be placed to the right of the rightmost non-blank column.

Many editing options are similar to those for QLS fonts. Option 1 will store a character (necessary to copy your changes from scratch to working memory), option 4 will select a new character (the up and down cursor keys will scroll the centre strip; press space when the character of your choice is topmost); option 3 then permits the loading of a template for changing (follow the same instructions again). Option 5 clears the grid to paper colour; option 6 exchanges ink- and paper-coloured pixels. Option 7 mirrors the grid horizontally, option 8 vertically.

There are also a few extra options. You can remove the current character completely from the font (option 2); this frees the working memory it occupied. If a removed character is later encountered during text entry, the only effect will be that the cursor moves one pixel row to the right, thus creating an extra inter-character space. You may scroll the grid (option 9, then use the cursor keys and Esc to finalise); white space without grid lines will scroll in from the opposite end. If you have a mouse, select the scroll character option - then if you want to scroll right, move the cursor to the right hand column of the grid and keep tappping Select, etc. Finally option 0 will permit you to fill all pixels within an ink-enclosed area of paper colour by moving the cursor there and pressing the space bar.

### 6.2.3 Saving and loading

Saving (option 2 in the intermediate menu) and loading (option 3) work in much the same way as for the QLS fonts. We suggest filenames ending in _font for the HDFs.

If you wish to load a font designed under the previous version of the program (Special Desktop Publisher), it must first be converted by an auxiliary program to make it readable by Professional Publisher. See Subsection 9.3.

A few words on the format of HDF files is in place. The size of a _hdf file defining n characters of height h pixels and width w pixels is given by 16 + 512 + n*h*w/8.

The first 16 bytes comprise 4 long words (more significant bytes first, 4 bytes per long word). The first long word gives the length of the file in bytes. The second one is the number of bytes taken to store each character (h*w/8). The third one is the character width in bytes (h/8) and the last is the character height in pixels. Note that no information on the character codes for the contents is needed. This is because:

(1) All hdf fonts start with chr$(32)

(2)  The number  of  characters in  the font  is  the result  of
subtracting from  the first long word  the number 528,  and then
dividing by the contents of the second long word.

The next 512 bytes should be  viewed as 256 pairs.  Each pair of
bytes gives  width +  base-line position  for each  character in
turn, from chr$(0)  to chr$(255).  The first  byte in  each pair
gives  the  position  of   the  vertical  proportionality  line,
measured in pixels from the  left-most position. The second byte
gives the position of the  base-line measured in pixels from the
bottom  of the  grid.  Byte values  for  characters outside  the
supplied range in the actual font file are irrelevant.

The rest of the file is devoted to bit data on each character in
turn.  Within each  character, it  starts  at the  top left  and
moving from  left to right  until the end  of the grid  and then
down one pixel line and again from left to right and so on until
the bottom right of the grid is reached.

## 7.    PRINTING

### 7.1    Requirements

As Professional  Publisher handles more fonts  than are resident
in  any  printer, in   addition  to  single-pixel  kerning  and
graphics,  a daisywheel  printer will  be unsuitable  for output
from this program.   Your task is easiest if your  printer is an
Epson-compatible 9-pin type (if it will correctly print from the
EASEL business  graphics program through that  program's default
printer driver, it is).  In that case, you need only ensure that
your  printer is  connected to  the  QL (typically  by the  port
labelled ser1)  and switched on.  An  attempt to output  data an
unconnected 'ser' device is likely to crash the QL!

### 7.2    Putting the Epson Through Its Paces

All set? Select 6  from the main menu.  You will  first be asked
the number of passes you wish  the printer to make in outputting
the current Page.  Values from 1  to 5 may be selected, with the
higher values taking  longer but permitting to  squeeze the last
drops of ink out of a geriatric printer ribbon.

Next comes the  choice of orientation: print it  as the portrait
or landscape  it was designed as,  or turn it on  its side.  Two
menus  follow that  allow you  to halve  or double  the standard
width  and height  of the  printout  as defined  in the  printer
manual.   'Fingerprint' hardcopy   that   is  condensed   both
horizontally and   vertically is   thus  supported.   On  the
'vertical' menu  there is a fourth  option called 'Interpolate':
it will  insert a  suitably computed  pixel row between  any two
'regular' rows.

In all sub-menus  you are offered the option of  pressing Esc if
you have  changed your mind about  printing. But if  you select
one of  the numbered  options on  the 'vertical'  menu, printing
will at  last start.   The cameo  will go red  in step  with the
printing process and  white again when finished.   You may abort
printing by pressing  Esc, but this will  not affect information
that has already been stored in the buffer of your printer.

### 7.3    Changing the Printer Driver

### 7.3.1 The rationale

The straight-in landing of Subsection 7.3 may not be suitable in
your case.  Your printer may  not be Epson-compatible; it may be
set to create  automatic linefeeds or connected to  a port other
than ser1; you may wish to  'print' to a file for later transfer
to a printer (perhaps the printer noise would wake cat/wife); or
your first trial printout may not have worked out.

In all of these cases Professional Publisher will let you change
its   built-in   printer   driver routine   as   warranted   by
circumstances.  Select 7  from the Main Menu and  go through all
options of  the 'Drivers'  menu from  3 to 7.   You may  need to
consult your  printer manual if you  aren't sure of some  of the
answers to the questions you'll be asked.

### 7.3.2 The parameters

Option 3 requires  you to enter Y if  your printer automatically
creates  a  'return'  to  the   left  margin  after  a  linefeed
character; N  if the printer  expects both 'characters'  to come
from the computer.

Option 4  asks you  for the characters  your printer  expects as
commands for certain amounts of paper feed.  Select each line in
turn and  enter the sequence of  ASCII characters given  in your
printer  manual,  unless  the  defaults  offered  happen  to  be
correct.  Use  '27' for ESC, press  Enter once after  each value
(there may be up  to five) and twice when that  code sequence is
finished.  To indicate  that a 1/9-inch paper  feed requires the
code sequence  'Esc 51 20' you  would thus select the  1/9" line
with the  space bar  or Select  button and  type: 27  (Enter) 51
(Enter) 20 (Enter) (Enter).  Of course only values from 0 to 255
will make sense.

Option 5 is very similar with its questions about single, double
and quadruple graphics  density, but each line  needs the number
of  pixels  characteristic  of  the  indicated  density  first,
followed by  character codes as above.   Pixel values from  0 to
9999 are accepted.

Option  6 lets  you change  the default  baud rate  your printer
expects from the  default of 9600.  Again values from  0 to 9999
will  be  accepted, but  as  the  QL  only supports  baud  rates
computed  by  successive  halving  of  9600,  the  program  will
automatically correct a non-supported value to the closest legal
value.

Option 7 lets you substitute the port of your choice (ser2, par,
flp1_temp or whatever) for the default ser1.

When you have modified the  printer driver to your requirements,
you can start printing.

### 7.3.3 Saving and loading

Redefining the  default printer driver during  each Professional
Publisher session would be  tedious indeed.  Fortunately you can
save your modified printer driver to a file with option 1 on the
'Drivers' menu and re-load it on a later occasion with option 2.
As  usual, you'll  get  an error  message  if  the  file you  are
attempting to load does not contain a printer driver.

Your printer driver will even  load automatically if you save it
under  the name  epson_driver, overwriting  the default  printer
driver on  your  Professional  Publisher  disk.  You  can always
restore the old one by recopying from the master disk.  (You did
make a copy, didn't you?)

Yet another  way is  to tell  the program  to load  your printer
driver rather  than epson_driver on start_up.   The Configurator
program (see Subsection 9.2) will do just that.

## 7.4   High-Resolution Printers

The built-in driver copes best with 8 and 9. 24 pin printers and
dot-matrix compatible laser printers  are also supported: better
quality will be obtained from grafiX.

If  you want  laser-printer  output but  lack  a laser  printer,
please  refer to  the entry  'Laser Printer'  in the  Alphabetic
Section.

## 8.    PROGRAM CONTROL

## 8.1   Mouse v. Keyboard

To switch from keyboard control  to mouse control or back again,
select 2 and then  9 from the Main Menu.  Don't  do it when your
mouse is not connected, or you'll be in trouble.

## 8.2   Multitasking

To leave  Professional Publisher temporarily  - say, to  do some
some  computations or  copying  operations in  SuperBASIC or  to
edit/save text in Digital Precision's Editor - select 8 and then
1 from the Main Menu.  This will take you to the initial screen,
which a  series of  Ctrl+C keypresses  will get  you out  of and
(your work done) back into.

## 8.3   Quitting

To quit Professional Publisher irrevocably,  select 8 and then 2
from the  Main Menu.  You will  receive a warning message  and a
chance for  second thoughts.  N will  take you back to  the Main
Menu to let you perform the 'save' you may have forgotten; but Y
will remove the Publisher task  from the QL's memory and deposit
you in SuperBASIC (or perhaps  some other task that is currently
loaded).

On some QL systems, SuperBASIC  may not be re-awakenable after a
a Quit. If  you have such a system, use  the multitasking option
(as described  in section 8.2) instead  of Quit, and  either use
the TURBO toolkit command  REMOVE_TASK 1,0,0 or the SuperToolkit
command RJOB  1,0,0 (depending on  which you have  available) to
remove the Professional Publisher task (which we have assumed is
the first  task invoked on  the QL -  if not, use  LIST_TASKS or
JOBS to  list them). Professional  Publisher will still  wish to
"own" the drive it booted from - sorry!

## 9.    Auxiliary Programs

All  the  following programs have  a  support function  for
Professional  Publisher.  To  use  them, save  whatever in  your
current program  seems worth  saving, withdraw  the Professional
Publisher disk,  reset your QL and  press F1 at  the appropriate
time.  Reinsert  the disk and  LRUN the boot  program associated

with the desired function.  When done, reset the QL again.

## 9.1    Configurator

This program  lets you  change  the start-up  defaults  of
Professional Publisher  semi-permanently, i.e. until  you decide
to run the Configurator again.

The  boot  program  is  called  configure_boot.   The  menu  and
sub-menu options are:

1. Page variables
   1. Page memory (original default 192000 bytes)
   2. Page width (960 pixels)
   3. Page height (800 pixels)
   4. Quit
2. Default fonts
   1. Font memory (65000 bytes)
   2. High definition fonts (see Note 1)
   3. QL fonts (see Note 1)
   4. Quit
3. Text parameters
   A. Hyphenation:     minimum left (3)
   B.                  minimum right (3)
   C. Justification:   Required length (0 %)
   D.                  Last line (No)
   E.                  Paragraphs (No)
   F.                  Indents (< 2)
   G.                  Justification (Both)
   H.                  Between letters (40 %)
   I. Text load:       Linefeeds? (No)
   J.                  Highlights? (Yes)
   K.                  Configuration (Hyphenation)
   L.                  File type (ASCII)
   M.                  Font type (Standard)
   N. Control codes (sub-menu)
   O. Standard highlights (sub-menu)
   P. High definition highlights (sub-menu)
   Q. Quit
4. Miscellaneous
   1. Default file name (flp1_)
   2. Mouse present (Yes)
   3. Default control (Keyboard) (see Note 2)
   4. Horizontal ruler (Yes)
   5. Vertical ruler (Yes)
   6. Default printer driver (epson_driver) (see Note 3)
   7. Default layout (default_layout) (see Note 3)
   8. Quit
5. Load old defaults (see Note 4)
6. Configure disk (see Note 5)

Notes: 1. Assign a filename  to any or all letters from  A to X,
          or quit by  pressing Z.  HDF A  and QLS A, B,  C and M
          cannot be reassigned other filenames.
       2. This toggles to Mouse.
       3. Enter the desired filename.
       4. If you wish to undo  your changes and restart from the
          original  values, select  5  (before  selecting 6,  of
          course).
       5. This  finalises your  selections and  reconfigures the
          default files.

## 9.2    Page Converter

This program makes Pages saved from the old program version, Special Desktop Publisher, readable by Professional Publisher. The name of the boot program is convert_page_boot.

You will be asked the width of the original page in pixels, the name of the original file and the new name for the PP-readable file. Everything else is automatic. This is not a user-friendly program, so make sure you get the names right!

## 9.3    Font Converter

This program makes HDFs saved from the old program version, Special Desktop Publisher, readable by Professional Publisher. The name of the boot program is convert_font_boot.

You will be asked the height of the original font in pixels (normally 16, but 24 if some characters have been defined with descenders), the two filenames that make up the old font (normally ending in _fnt for the pixel configurations and in _wdt for the character widths and descenders) and the new name for the (single) PP-readable file (we suggest that it should end in _font). Everything else is automatic. Get the names right!

## 9.4    grafiX

### 9.4.1 Purpose

The program, which is available to Professional Publisher owners on disk for ten pounds direct from Digital Precision allows a graphic Image file (e.g. a Professional Publisher file of any size, or a Desktop Publisher/DTP Special Edition/Page Designer 2 file or a 'set' of Front Page files, or a QL Screen Dump of any size) to be printed to any dot matrix printer, including 24-pin printers and dot-matrix compatible laser printers.

The resulting printout may be scaled up or down in either dimension (or left unscaled) and rotated through 90 degrees, or left with its original orientation.

The program requires a memory expansion - its operational size is about 150k depending on the size of the file to be printed - and it uses the same Toolkit as Desktop Publisher; namely the TURBO Toolkit.

All support relating to the use of grafiX should be obtained direct from PDQL, Unit 1, Heaton House, Camden St, Birmingham B1 3BZ (telephone: 021 200 2313) and not from Digital Precision.

### 9.4.2 Preparation

Before the program may be run, your printer's characteristics must have been entered on to the printer customisation file, the supplied version of which is called 'driver_dat'.

Most commonly available printers are already defined on this file, but if yours is not, the method for entering the required details is described at the end of this Subsection. PDQL would be interested in hearing from people who find they have to update or add to the file, so that the distributed version of the file can be amended for the benefit of others.

Also, before the program is started, the TURBO Toolkit extensions should be available in QL memory: users of Professional Publisher will already have this available (it is

in the file 'runtime_exts' and is automatically invoked in
Professional Publisher's boot-up procedure).  For use outside of
the Professional Publisher environment, first invoke the
supplied extensions using:

_ADDR=RESPR(7168):LBYTES FLP1_runtime_exts,_ADDR:CALL _ADDR:NEW

### 9.4.3 Start-up

The program is started in the usual way - using EXEC, EX,
EXECUTE or whatever method you use for an "executable"
multitasking program.
Hence the start-up command to be entered from
SuperBASIC to invoke the program would be, say,

EXEC FLP1_grafiX_BIN

Use CTRL+C (hold CTRL down, tap the C key) to switch control
between grafiX and other tasks.

Professional Publisher owners can incorporate the start-up
command for grafiX in the 'boot' program for Professional
Publisher, provided there is sufficient memory to hold both
programs simultaneously.  Do this by adding a line immediately
after the EXEC publish_task line (but before the NEW statement!)
which EXECs the appropriate version of grafiX. If you are unsure
of how to do this, don't: invoke grafiX by going to SuperBASIC
from within Professional Publisher (Switch tasks - option 8 on
the main menu) and, from BASIC, type in the above-mentioned EXEC
command.

Do NOT take out the Prfessional Publisher disk from the boot-up
drive or else you will get a "files still open" error message.
grafiX_bin should either be on the same disk as Professional
Publisher (move the fonts onto a second disk to make space -
move fonts not specified as being ones that are needed at
boot-up - see section 9.1) or be loaded from another drive.

Note for Taskmaster users: The program MUST NOT be loaded with
the "shared code" option.

Note for QRAM users: The program MUST NOT be "hotkeyed".  Select
it from the 'Files' menu.

When the program has started, the screen is cleared, headings
are displayed and the first 'prompt' of the start-up dialogue
appears.

The program needs the user to supply some details about three
things:

                the input Image file
                the printer to be used
                the scaling to be used

### 9.4.4 The input file

The first few questions are about the Image file:

                the name of the file to be printed,
                the origin of the file,
                various details depending on the file's origin
                whether 90-degree rotation is required
                whether ink and paper are to be reversed

*       'Enter device and name of file: '

                Sample Responses:  flp2_page_one_v4
                                   ram1_schematic

                The  program expects  the device/file  name to  be at
                least 6  characters long.  Otherwise, it  squeaks and
                repeats the question.

*       'File Source (DTP, PD2, FP, Scr, Again): '

                Sample responses:  D - for Desktop Publisher
                                   R - for Professional Publisher
                                   P - to indicate Page Designer 2
                                   F - to indicate Gap's Front Page
                                   S - to indicate a QL screen dump
                                   A - to respecify the file name

        Some  supplementary questions  may  be asked,  depending on  the
        source of the file - see notes at end of section.

        After  the questions,  the image  dimensions are  displayed, for
        example: 'DTP page width:  ' wwww ' Height: ' hhhh  ' where wwww
        and hhhh are the selected (or default) sizes.

*       'Rotate thru 90' (n/y): '

        Depending on your  output requirements, it may  be convenient to
        swap the "x" and "y" axes of the image.

*       'Invert black and white (y/n): '

        In its screen  image file, PP uses 'white' as  "ink" and 'black'
        as "paper".  This  will usually result in  tremendous amounts of
        ink at  print time, since it  is likely that most  of your image
        will be white.  If you reply 'y' (the default) to this question,
        black in  your screen image will  be treated as 'ink'  and white
        will be treated as 'paper'.

**9.4.5 Supplementary questions**

*       Desktop Publisher

                the PP page size used,
                whether the page is 'vertical' or 'sideways'
                                        (PP terminology)

>>      'DTP page width (960,480,800,1280): '

                Sample Responses:  ENTER - defaults to 960
                                   1280

                If you have taken special action in PP  to adjust the
                Page size, then the revised size should be declared -
                otherwise just press ENTER

>>      'DTP page height (800,400): '

                Sample Responses:  ENTER - defaults to 800

                See above.

>>      'Is DTP page vertical or sideways (v/s): '

The default response - if you just press ENTER - is 'v'.  In the
same way as the Page size,  you will have selected 'sideways' as
non-standard orientation when creating the Page in PP.

*       Page Designer 2

No  additional questions.   Image dimensions  are determined  by
examining  the  file. A  'compressed'  file  image may  not  be
processed: the program will squeak and reject the file.

*       Front Page

No  additional questions.   Image dimensions  are fixed.   It is
expected that 4 files will  be available on the indicated device
and that the  name entered is the "root" name.   For example, if
the response to  the filename prompt was  "flp2_draft", then the
files    "flp2_draft1",     "flp2_draft2",    "flp2_draft3"    and
"flp2_draft4" will be expected to be present.

*       Screen Dump

The usual width of a screen  dump is 512 pixels.  If appropriate
action has been taken, the dump width may be less.  This will be
known  to  the  creator  of  the  file  (you ?).   The  following
question has a default response of 512.

                'Dump width ( <= 512 ): '

The image depth is computed from the file size.

**9.4.6 The printer**

The program will output to any suitable device.  This may be the
more obvious printer ports  - ser1, ser2, par - or  maybe a file
on disk or RAM disk etc.   Some images which involve scaling and
inversion and so forth may take up to 10 minutes to process, and
if several  copies are required, it  may be quicker to  send the
output to  a file and  subsequently copy  the file to  the print
device as many times as is required.

*       'Enter print device (default "ser1"): '

                Sample Responses:  ENTER - default ser1
                                   flp2_grafdump

*       'Passes: '

                Sample Responses:  ENTER - default 1 pass
                                   2 - two passes

Each 'pass' of the print head may be repeated, if necessary with
a suitable vertical offset - assuming the appropriate parameters
have been defined for the printer  to be used.  On printers with
low vertical  resolution, this  technique may  result in  a more
'solid' image.

Whether or not  printing is actually going to take  place, it is
necessary for  the program  to know which  type of  printer will
ultimately be used.  The printer  must be fully described to the
program,  and the  details are  required to  be on  the 'driver'
file.

*       'Driver filename (default "driver_dat"): '

      The format of the parameters on  the driver file is described at
      the end of this Subsection.

      For  each set  of parameters  on  the driver  file, the  program
      displays the printer  name and an associated 'ID  number' from 1
      upwards; when all names have  been listed, the following message
      is displayed:

*      'Enter id number of required printer type: '

      If the name of the printer that you want is on view, then key in
      the ID number.  If  it is not, then just press  ENTER.  If there
      are more names on file,  these will then be displayed, otherwise
      the program will HALT with the message:

      'Update  Graphics  Driver  file  with  required  parameters  and
      restart'

      When  the required  printer has  been identified,  the selection
      dialogue is cleared from the screen and replaced by the message:

       'Selected printer: ' printer_name

## 9.4.7 Scaling

      The program is already aware of the dimensions and 'dot density'
      of the  QL screen; so  it knows what it  takes to make  a circle
      look like a circle on the QL.

      Having been told what  printer is in use, it also  knows what it
      takes to make a  circle look like a circle on  that printer.  So
      the program does the necessary  calculations to work out in what
      way  the  incoming data  has  to  be transformed  (rescaled)  to
      preserve the "aspect  ratio" so that the image on  screen can be
      reproduced on paper.

      The results of these calculations are displayed as follows:

                                          Preserving aspect ratio
The resulting print image will be as follows:     Width      Height
                                  (inches):    wwww       hhhh
     The scaling factors are (input : output):  Horiz.    Vertical
                                      a:b        c:d

      The program  has worked  out what is  the minimum  adjustment to
      preserve the aspect ratio, and  also at that adjustment what the
      image size on the paper will be.  One of a:b or c:d will be 1:1,
      so  this  tells you  what  the  vertical/horizontal scale  ratio
      should be to preserve the aspect ratio.  If the program computes
      a horizontal scaling that will result in a line longer than your
      printer can handle, the program  will squeak and scale down both
      figures accordingly.

      The scaling factors might be displayed as:

              1:1.032      1:1

      This means  that for every input  pixel on a 'row',  the program
      must generate 1.032  pixels, or more properly,  the program will
      "invent" 32 pixels in the print  output for every 1000 pixels in

the image  file row of pixels.   No vertical adjustment  will be
made.   Another case:

                1:1             1.022:1

This would mean that each 'row' would be left unscaled, but that
out of every 1022 input rows, only 1000 would get printed.

You are then provided with  the chance to override these figures
- if  for example the printed  image will be too  small, you may
want  to scale  up the  image, or  you may  be prepared  for the
aspect ratio to be changed or whatever.

'Do you want to change the scaling (n/r/y): '

If the response is 'r', the  program will restart the dialogue -
perhaps  you wish  to  use a  different  printer resolution,  or
decide  that  the  image  would  "fit"  better  if  rotated,  or
whatever.

Only if you reply 'y' will the next question appear:

*       'Enter scaling as numbers (horiz, vert): '

                Sample Responses:  1.33 (ENTER) 1.777 (ENTER)
                                   1 (ENTER)    .978 (ENTER)

The numbers  you are  required to enter  are the  OUTPUT scaling
numbers, so you can assume that  you are entering 'x' and 'y' in
the implied: 1:x 1:y

If you want to increase the image in size, your number should be
greater  than 1.   If  you  want to  reduce in  size, the  number
should be less than 1.  If  you change the horizontal scale, the
program will  check that the number  of pixels implied  does not
exceed  the maximum  width of  your  printer. If  it does,  the
program will squeak and ask for the numbers again.

After the new scaling has been entered and accepted, the program
redisplays the scaling 'panel' showing the revised stats:

                                                   Manually scaled
    The resulting print image will be as follows:  Width     Height
                                     (inches):   wwww       hhhh
        The scaling factors are (input : output):  Horiz.  Vertical
                                                   a:b        c:d

### 9.4.8 Interpolation (anti-aliasing)

If either of  the scaling figures is  in excess of 1  - i.e. the
image is to  be scaled up vertically or horizontally,  or both -
the program will ask if interpolation is required.

What this means is that if  the program "invents" pixels or rows
and  if these  are left  as "paper",  the resulting  image could
become sparse.   With interpolation  switched 'on',  the program
will have a look at the context of the invented pixel or row and
decide whether ink or paper  is more appropriate to preserve the
image.

*       'Do you want horiz.  interpolation (n/y): '
*       'Do you want vert.   interpolation (n/y): '

Note also  that if  vertical scale  reduction is in  effect, the

program attempts to preserve image integrity. Pixel rows that
are to be 'discarded' are examined, and structurally significant
information is extracted before the row is discarded. This data
is incorporated on the next row to be printed.

## 9.4.9 Execution

That finishes the dialogue. The program goes on to load the
whole of the Image file (it has to have it all if sideways
images are to be processed). If insufficient memory is
available, the program will HALT, displaying the message "Out of
memory".

Processing then commences. Factors that influence the process
time are - in decreasing significance:

> (a) Sideways orientation of input file
> (b) Horizontal scaling up
> (c) Width of a pixel row (longer row = longer time)
> (d) Vertical scaling up
> (e) Horizontal interpolation
> (f) Vertical interpolation
> (g) Inversion of ink and paper

A file that scores badly on all of these points may take up to
10 minutes to print on grafiX_bin.

During printing the program scans the keyboard, and if any
keypress is detected, it will ask if the print is to be aborted:

> 'Terminate now (n/y): '

If the response is 'n', printing continues. If the response is
'y', printing of the image ceases, and the end-of-print stats
are written to the printer.

After the current image file has been processed, the program
asks:

> 'Another image (y/n): '

If the response is 'n', the program terminates; else the
dialogue is restarted. You will be given the option of re-using
values already entered - this greatly cuts the number of
keypresses required when you are outputting a number of pages.

## 9.4.10 Printer-driver file

The structure of the printer-driver file has been deliberately
designed for ease of editing. You should, if the need arises,
be able to adjust or add to the file without difficulty.

For the purposes of this program , there are at least 12 items
of information required to describe each printer. You WILL need
your printer manual, but not much else.

The file can most easily be edited using Digital Precision's
Editor program, Metacomco's ED (or similar ASCII editors like
Arcturus, Spy or Talent's or Computer One's), or perhaps
importing the file into Quill and writing the updated file using
the Print command (NOT Save) of Quill - with headers, footers,
paging set off, and without supplying a "printer_dat" file to
Quill.

Each line  of the file  MUST begin with  semicolon - if  it does
not, then the program won't see  the line. (So, if you want, you
can put  comments in the file.)  At least 13 lines  are required
for  each printer  (or printer  mode).   The first  line is  the
printer name,  followed by the remaining  parameter lines.  Each
parameter is distinguished by a 4-character identifier.

(Parameters marked ** are  mandatory only if multi-pass printing
is to be used. )

        Name, Identifying name of printer
        GPRE, Preamble for graphics - e.g. set linefeed height
        GPOS, Postamble after graphics - e.g. reset lf height
        GEOL, End of line code - single pass printing
        GFST, End of line code - first pass of print   **
        GLST, End of line code - last pass of print    **
        GINT, End of line code - intermediate print passes **
        GPFX, Graphics line prefix
        GCTL, Length of graphics string controller (chars)
        GCTT, Type of controller
                    0 = characters
                    1 = binary; m.s. byte first
                    2 = binary; m.s. byte last
                    3 = no controller
        GHZD, Horiz. dots per inch
        GVTD, Vert. dots per inch
        GHZM, Max. Horiz dots per line
        GFBH, First bit of byte is High pin(1) or Low pin(0)
        GPIN, Number of pins in print head
        GSPD, Transmission speed (BAUD)
             (remaining parameters are optional, depending on your printer)
        PEL,  End of line code for text (if other than CR, LF)
        GFIR, The number of pins that actually fire
        GFIL, A character not allowed in a graphic stream
        GESC, The sequence to be used to replace GFIL

Some  of the  information required  for the  parameters contains
some  strange characters,  as  you will  see  from your  printer
manual.

Rather  than  have  you  searching around  for  some  weird  key
combinations on  the QL,  we have set  up string  conventions so
that information in your printer  manual may be entered directly
into the driver file.

## 9.4.11 Parameter strings

Characters in  parameter strings  may be  expressed either  as a
letter or as a sequence of  letters - which will be used exactly
as they appear (e.g. UPPER CASE or lower case) - or as a decimal
number representing the ASCII code for the (single) character to
be used.

Combinations  of letters  and  decimal numbers  are allowed.   A
comma must be  used as a separator.  Leading spaces  in front of
each element of  the string are ignored.  A  decimal number must
be prefixed by .   If the  character is required  as a letter,
it must occur as .  Neither  a comma nor a semicolon character
may used in a  string of letters.  If either is  needed, use 44
or 59  respectively instead.  Equally,  a string may  not BEGIN
with a space - use 32 if the requirement arises.

So, for example, to set up a string as the Graphics preamble
        ESC "E" ESC "T14" ESC ";" ESC " AB,"

```
the parameter line would look like:
      ;GPRE, 27, E, 27, T14, 27, 59, 27, 32, AB, 44

An example parameter set:

      ;Name,CITOH M7500 - Double Density
      ;GPRE,27,E,27,T16, 13
      . select 12 cpi; set lf to 16/144 of an inch
      ;GPOS,27, A, 13
      . reset to 6 lines per inch, return print head
      ;GEOL,10,13
      . LF CR
      ;GPFX,27,S
      . ESC S in front of each graphics line (double den.)
      ;GCTL,4
      . 4 byte string controller
      ;GCTT,0
      . controller is ASCII characters
      ;GHZD,120
      . printing at 120 horiz. dots per inch
      ;GVTD, 72
      . printing at 72 vert. dots per inch
      ;GHZM,960
      . platen width 8 inches => 960 dots max
      ;GFBH,0
      . leading bit of graphics byte is low pin, not high pin
      ;GPIN,8
      . 8 pins fired in print head
      ;GSPD,4800
      . baud rate 4800

Another parameter set - it is Epson standard:

      ;Name, Star NL10 - Double Den
      ;GPRE, 27, A, 8, 13
      .   set linefeed at 8/72", do carriage return
      ;GPOS, 27, 2, 13
      .   set linefeed at 1/6", do carriage return
      ;GEOL, 13, 10
      .   end-of-line code is CR, LF - single-pass printing
      ;GFST, 13, 27, J, 1
      .   set CR and 1/216" linefeed after 1st pass
      ;GLST, 13, 27, J, 23
      .   set CR and 23/216" linefeed after last pass
      ;GINT, 13
      .   set CR and no linefeed on intermediate passes
      ;GPFX, 27, L
      .   double-density prefix is ESC, L
      ;GCTL, 2
      .   controller length is 2 bytes
      ;GCTT, 2
      .   controller type is binary with m.s. byte 2nd
      ;GHZD, 120
      .   double density ==>  120 dpi
      ;GVTD, 72
      .   8 pins per 8/72" ==> 72 dots per inch vertical
      ;GHZM, 960
      .   platen width 8", times 120 dpi
      ;GFBH, 1
      .   first bit of byte maps to 'top' pin in print head
      ;GPIN, 8
      .   8 usable pins in print head
      ;GOFF, 0
      .   Byte offset not relevant
```

```
        ;GSPD, 9600
        .  Standard baud rate

    Another parameter set - quite tricky

    This printer sets "graphics mode".  Within that mode all data is
    considered to be  graphic output, unless preceded  by ETX (ASCII
    3)

        ;Name, IDS 480 - Paper Tiger
        ;GPRE, 3
        .  set printer in Graphic mode (Exp. FuN. DIP Switch req'd)
        ;GPOS, 3, 2
        .  set printer in Text mode
        ;GEOL, 3, 14
        .  Vertical Advance "2"
        ;GFST, 3, 13
        .  Carriage Ret; N.B. "Auto LF" DIP switch off
        ;GLST, 3, 13
        ;GINT, 3, 14
        ;GPFX,
        ;GCTL, 0
        ;GCTT, 3
        ;GHZD, 84
        ;GVTD, 84
        ;GHZM, 672
        ;GFBH, 0
        .  bit 0 of each data byte is high pin
        ;GPIN, 8
        .  8 pins in print head, but see GFIR
        ;GSPD, 9600
        ;PEOL, 13, 10
        ;GFIR, 7
        .  Only top 7 pins fire - 1 bit per byte ignored
        ;GFIL, 3
        .  if 3 occurs as data pattern .....
        ;GESC, 3, 3
        .  send 3, 3 instead
```

## 9.5    Word Processors and Graphics Programs

Professional Publisher  is a general-purpose  desktop publishing
program.  Some  text- or  graphics-handling facilities  that you
may wish to use before you load text or pictures onto a Page may
only be available in  dedicated text-processing or art programs.
All  programs of  these types  that we  know of  work well  with
Professional Publisher;  indeed you can multitask  them.  May we
especially    recommend   Digital    Precision's   The    Editor   for
sophisticated  text  handling  and  Eye-Q,  the  most  versatile
graphics processing program for the QL.

## B. ALPHABETIC SECTION

This section gives  detailed explanations of the  technical terms used
in  this  manual and  instructions  for  every operation  featured  in
Professional Publisher.   Though you  will normally  be guided  by the
menus and  soon use  frequent operations automatically  without giving
them a  thought, we have thought  it useful to offer  detailed help if
you are in need of it.

When a key is to be pressed in response to a menu, moving the menu bar
to the desired option with the  cursor keys or mouse and then pressing
the space bar or the Enter key (or  the Select button on the mouse) is
almost always an alternative.

**Abort.**
   To interrupt a computer command in mid-execution.
   (1) To  abort the printing of a page, press the Esc key.
   (2) To abort a fill operation, press the Capslock key.
   (3) To abort  the loading of text  from a file, press  the Esc key.
       The abort command  can be rescinded by entering N  in answer to
       the prompt 'Are you sure?'

**AND.**
   A Boolean function  whose input in this program  are two rectangles
   of equal  size. Its output is  another rectangle of the  same size,
   where each pixel is in  paper colour unless the corresponding pixel
   in both input figures is in ink colour.  The result of ANDing the /
   and \ characters is  just a dot in the centre  of a screen position
   reserved for a character.
   (1) To select  AND for  drawing, navigate to  Mode Draw,  enter the
       Command sub-mode by pressing Enter, then type A and return from
       Command sub-mode by hitting Esc.
   (2) To  select AND  for merging  HDF characters,  navigate to  Mode
       Font; press F4, followed by 4 and A, then do your merging.

**Angle.**
   (1) The parameter which controls the amount of curvature of an arc.
       It is the angle between the two  radii from the ends of the arc
       (the angle 'subtended' by the arc).
   (2) The amount of 'tilting' of  an ellipse from the horizontal.  In
       Professional Publisher it is set  indirectly by setting the end
       points of the axis of the ellipse.

**Arc.**
   Part of the circumference of a circle.  To draw an arc: Navigate to
   Mode  Line.  Move  the cursor  to one  of the  desired end  points.
   Exchange end points with  the X key.  Move the cursor  to the other
   end point.  Use the Enter key  to enter the Command sub-mode. Press
   A for  arc.  The arc  shown on the  screen will be  approximately a
   quarter circle.  To increase the  angle subtended by the arc, press
   +, to decrease  it, press -.  It  is possible to move  the arc past
   the chord connecting the end points;  this chord will not be drawn.
   Press the Esc key to leave  the Command sub-mode; you may then draw
   further arcs, boxes, circles, ellipses  or lines, or exit Mode Line
   by pressing F4 and selecting from the menu.

**Art file.**
   A file  containing graphic information that  can be saved  from and
   loaded to the screen.  It is  good practice to use filenames with a
   _pic  or _scr  extension.  For  loading, the  program distinguishes
   between files produced  by EYE-Q and other  files (compressed EYE-Q
   files must  first be  loaded back into  EYE-Q and  re-saved without
   compression - part-screens are OK, though).
   For art  files included in  the Professional Publisher  package see
   Clip art.

**ASCII.**
   American  Standard  Code  for  Information  Interchange;  the  way
   characters in any text are represented by numbers up to 255 in most
   microcomputers.  The  table of assignments is  printed under 'ASCII
   Code' in the Concepts section of the QL User Manual.
   Note:  The fact  that only  ASCII  codes from  0 to  127 are  truly
   standardised and those  from 128 up are likely to  be different for
   other  computers  and  for  different  printers  is  fortunately
   irrelevant when you use Professional Publisher.

**ASCII file.**

A file consisting  of text in ASCII characters.   Any control codes
for  highlights etc.  are embedded  and  not batched  at the  start
and/or end of the file.

**Backing up.**
There  are  hundreds  of  ways to  lose  the  information  on  your
Professional Publisher  master disks, even  though write-protected.
There is just one way to  counteract this danger: make at least one
copy of each master disk right  away.  Put the master disk in drive
1, a formatted empty disk in drive 2, and type WCOPY flp1_ to flp2_
(followed  by Enter).   Type A  in response  to the  prompt at  the
bottom of the screen.  If you have a single disk  drive, insert the
master disk in the  drive and type WCOPY flp1_ to  ram2_.  When the
cursor reappears, insert  a formatted, empty disk in  the drive and
enter WCOPY  ram2_ to flp1_.  Type  A in response to  the prompt at
the bottom of the  screen.
After copying is  finished, label the secondary disks  and lock the
master disks away in a safe place. See also Copyright.

**Baud rate.**
The rate  of transmission between communication  devices.  One baud
means one bit, i.e. one yes-no choice, per second.  In Professional
Publisher, the  baud rate is  of importance for  communication with
your printer.   Consult your  printer manual for  the baud  rate to
select; unless it is 9600, the default, correct it by navigating to
the main  menu and pressing 7  and 6 in succession.   Then edit the
baud-rate  value.  If  the value  you selected  is not  among those
supported  by the  QL, the  program will  automatically select  the
nearest legal value.  On being returned to the Driver menu, press 1
and save the modified printer driver under the name of your choice.

**Bold.**
One of  the highlights that  can vary the  appearance of an  HDF or
QLS.   It is  distinguished by  thicker character  strokes. Default
values may be changed by means of the Configurator program.
(1) To select  the QLS  you have  defined as  bold for  manual text
    entry, navigate to  Mode Text, open a Window  and choose CSIZE.
    Press F4, 2 and Esc in succession; then enter your text.
(2) When  loading a  QLS text  file into  Windows or  columns, text
    saved as bold in a QUILL  file will always be loaded correctly.
    If bold  characters from  a non-QUILL  file are  not reproduced
    correctly, you will have to change the highlights and reload.
(3) When entering  HDF text manually,  bold characters may  also be
    selected.  After navigating  to Mode Font,  enter the  Control
    sub-mode by pressing  Enter; then press B.   The square against
    'Bold' in the information window will be filled.  (The B key is
    a toggle;  to revert to  normal characters, follow  exactly the
    same procedure.) Leave the Control sub-mode with Esc, enter the
    Type sub-mode by hitting the space bar, and type.
(4) When loading an HDF text file  into Windows or columns, be sure
    to make the highlights assignment so that text intended as bold
    comes out in whichever font you find most desirable.

**Boolean function.**
As used in Professional  Publisher,  a routine  which  accepts  two
series of bits (each bit standing  for either 'ink' or 'paper') and
produces  as output  another  series  of bits  of  the same  length
according to a well-defined  rule.  The Boolean functions supported
are AND, OR, OVER and XOR.

**Box.**
(1) The outline of a rectangle (sides parallel to screen) placed on
    the Page in  the current ink colour around a  Window for manual
    text  entry.   After navigating  to  Mode  Text and  opening  a

Window, you will be presented with the Options panel. Now
press 8 to draw the box.
(2) A rectangle (sides parallel to the screen, outline or filled)
placed on the Page in the current ink colour. To draw a box:
Navigate to Mode Line. Move the cursor to one of the desired
corners. Exchange corners with the X key. Move the cursor to
the opposite corner. Use the Enter key to enter the Command
sub-mode. Press B for box. The box will be filled if the fill
parameter is set. The diagonal, which is also shown, will not
be drawn. Press the Esc key to leave the Command sub-mode; you
may then draw further arcs, boxes, circles, ellipses or lines,
or exit Mode Line by pressing F4 and selecting from the menu.

**Brush.**
A pattern contained in an 8x8-pixel square, which may be placed on
the Page repeatedly in contiguous positions to give the effect of
the sweep of a painter's brush. To select a brush, navigate to
Mode Draw, enter the Command sub-mode and press B. This will cycle
you through the 64 brushes shown in the palette in the information
window. The shape of the cursor (red ink, white paper) will change
to the current brush, which will also be displayed against the word
BRUSH in the information window. 192 further brushes are available
through the S key (which toggles to a second palette) and the I key
(which toggles to an inversion of the current palette.
You can also change the effect of the brushes by selecting one of
the Boolean functions (AND, OR, OVER, XOR), which determine how the
brush will affect what is already there on the screen. To make the
change, press A, O, V or X respectively; it will be echoed in the
information window.
Leave the Command sub-mode by pressing Esc, then start drawing.

**Byte.**
A unit in which memory capacity in computers and devices is
measured. One byte is composed of 8 encodings of yes-or-no
decisions; another way of looking at it is the capacity to hold one
character.

**Cameo.**
A scale model (1 : 4 or 1 : 8, depending on Page size) of the Page
that is being prepared, first displayed at start-up. It also shows
the layout guides; but you can opt instead to see the grid (press
2, 8, 5, 2 in succession) or neither guides nor grid (press 2, 8,
5, 3). To re-display the layout guides, press 2, 8, 5, 1. The
cameo should be consulted from time to time to see whether the
development of the Page is progressing as desired. To this end all
you have to do is to navigate to the main menu.
If your page orientation is landscape, the cameo should be viewed
as though your screen were turned on its right-hand side; i.e., the
right-hand edge of the cameo corresponds to the bottom of the Page.

**Cancel**
The left-hand button on the mouse; it corresponds to the Esc key.

**Character.**
A letter, one-digit number, punctuation mark etc. that can be
printed to the screen or to a printer. Frequently a space is also
considered to be a character. A character can be unequivocally
referred to by its ASCII code (e.g. 65 for upper-case A, 32 for
space).

**Characteristics.**
A parameter which influences the resolution of mouse movement and
can thus be used to prevent unwanted merging of stippled brushes in
Mode Draw. More precisely, it is the offset in pixels between

successive screen images  of the cursor (=  paintbrush).  To change
characteristics, press  F4 and select  0 (the  default), 1, 3  or 7
from the menu.  Experiment with the different values until you know
which is best for your current purpose.
=1 allows printing only in the even pixel positions
=3 allows printing only in pixel positions that are multiples of 4
=7 allows printing only in pixel positions that are multiples of 8
=0 allows printing in all pixeel positions
Under keyboard control,  the characteristics are of  little use and
should be left at the default setting.

**Circle.**
To place a circle  on the Page in the current  ink colour: Navigate
to  Mode Line.   Move the  cursor to  the desired  centre. Exchange
points  with the  X  key.  Move  the  cursor to  any  point on  the
circumference.  Use  the Enter key  to enter the  Command sub-mode.
Press  C  for circle.   The  circle  will  be  filled if  the  fill
parameter is  set.  The radius,  which is  also shown, will  not be
drawn.  Press  the Esc key to  leave the Command sub-mode;  you may
then draw further arcs, boxes,  circles, ellipses or lines, or exit
Mode Line by pressing F4 and selecting from the menu.

**Clear.**
To cover the Page, or an area on it, with the current paper colour,
thus erasing anything printed or drawn there.
(1) To clear the whole Page: Navigate to the Main Menu and press 2,
    7 and 1 in succession.   As this is irreversible major surgery,
    you will be asked whether you are really sure.  Edit the prompt
    N to  Y if you  are and press Enter;  if you have  changed your
    mind, just press Enter with the N unchanged.
(2) To clear a section  of the Page: Navigate to the  main menu and
    press  2, 7  and  2  in succession.   Use  the  cursor keys  to
    determine the top left-hand corner of the section to be cleared
    on the cameo; repeat for the bottom right-hand corner.
(3) When a  Window is opened  for manual entry  of QLS text,  it is
    filled with spaces and thus clears everything it covers. If you
    should wish  to clear it while  it is still open,  press 2 when
    the menu whose first  line is '1. Enter text' is  shown. If the
    Window is no longer open, open a new one over it.

**Clip art.**
A type  of art  file containing  figures and  symbols that  come in
handy to illustrate  many texts.  The desired figure  may be placed
on the  Page by the cutting  and pasting process after  loading the
picture that contains it.
11 clip-art  files  are  included  in  the  Professional  Publisher
package   under  the   names   balls1_pic,   balls2_pic,   food_pic,
logos_pic,  misc1_pic,   misc2_pic,  signs_pic,   storage_media_pic,
technical_pic,  timepieces_pic and  travel_pic.   All  of them  are
EYE-Q screens;  so press 2 when  the relevant menu is  shown in the
loading sequence.

**Close-up.**
A window that is shown on screen  (bottom right) at some times as a
magnification (to  actual size on the  Page) of part of  the cameo.
The  arrowhead  cursor  is  always  at  the  close-up's  centre  and
corresponds to the cameo cursor at top left of the shuttle.

**cm.**
Abbreviation for centimetre, a linear  measure that has been in use
in Europe for two centuries.  In case you must know, it is 1/2.54".
The default unit is cm.  If you have switched to inches and wish to
reset to  cm, navigate to  the Main Menu  and press  2, 8 and  6 in
succession.

**Colour.**
   Professional Publisher only supports black-and-white printing. Each
   colour in what was originally a  4- or 8-colour picture is rendered
   differently, as in a photograph, by grey-scale conversion. When the
   program uses  'colour' in other contexts  (e.g.  in Mode  Font), it
   refers to various stipples giving the effect of grey, typically for
   an ink.

**Column.**
   When text is loaded onto the Page but not into specifically defined
   Windows, the area  delimited by the margins can  be either unbroken
   or divided into 2 to 9 columns. The vertical column lines are shown
   in green  on the cameo  and on the  Page (unless you  have selected
   another  option for  the  layout guides).   Like  the other  layout
   guides they  can be redefined, saved,  loaded and used as  lines of
   reference in cursor movement.
   The default at start-up is 4 columns.  The gutter or column gap may
   also be adjusted by the user; the default at start-up is .4 cm, and
   no combination of  columns and column gaps is  permitted that would
   result in a column width less than 1 cm.
   To change the column setting: Navigate to the Main Menu; then press
   2, 8, 2 and 1 in succession;  edit the value shown and press Enter.
   Next press 2 to edit the column gap similarly; press Enter and Esc.

**Column break.**
   One of up to 8 imaginary horizontal lines shown in red on the cameo
   and on  the Page (unless you  have selected another option  for the
   layout  guides).   Like  the  other   layout  guides  they  can  be
   redefined, saved, loaded  and used as lines of  reference in cursor
   movement.  The default at start-up is  3 column breaks at 7.4, 14.8
   and 22.2 cm from the top of the Page.
   The column breaks facilitate rapid and accurate shuttle.
   To change a  column-break setting: Navigate to the  Main Menu; then
   press 2, 8 and 3 in  succession, followed by the desired number key
   (1 to 8); edit  the value shown (use 0 for  none); then press Enter
   and Esc.

**Condensed length/width.**
   A way  of  printing, supported by  most printers, in which  a denser
   image of  half the nominal length  and/or width is  produced.  Also
   known as  quadruple density.  See Standard  length/width; Extended
   length/width.

**Configuration.**
   As used in  Professional Publisher, the treatment given  to text on
   loading when the  right-hand edge of a Window or  column is reached
   in  the middle  of  a word. There are three configuration options:
   (1) Word wrap:  the whole word  is placed  at the beginning  of the
       next line.
   (2) Hyphenate:  the word  is hyphenated  if the  conditions of  the
       hyphenate  parameters  are  met;  else  it  is  placed  at  the
       beginning of the next line.  This is the default.

   (3) Off:  the  whole   line  is  filled  without   regard  to  word
       boundaries; i.e.  words may be split without hyphens.
   To change the  configuration you must be in the  process of loading
   text.  When  presented with  the menu  headed by  '1. Put  text on
   page', press 2  and use the space  bar or Enter key  to cycle among
   the options.  If no further adjustments are to be made, press 1.

**Configurator.**
   Two  auxiliary programs  contained  in  the Professional  Publisher
   package (filenames configure_boot and  configure_exe) to change the

defaults which  Professional Publisher uses on  start-up.  By using
the configurator  you won't have to  change them to  your favourite
settings whenever you work with the main program.

To  use the  Configurator, you  must un-write  protect the  disk on
which it  is contained and  insert it into  drive 1 AFTER  you have
reset the QL and pressed F1.  Enter LRUN flp1_configure_boot.  This
will boot  configure_exe, which  in turn will  display a  series of
menus.  The values you start out with are normally contained in the
files named epson_driver, variable_default  and default_layout.  If
you  want to  start with  values  contained in  other files,  press
option 4  when shown the first  menu, followed by 6  (to change the
printer driver filename) or 7 (to enter the filename for the layout
guides) and edit the appropriate filenames.
Option  1 permits  you to  change  the default  Page size  (960x800
pixels)  and the  memory  reserved for  two  pages (192000  bytes).
Illegal  selections will  be  turned  down with  a  beep; you  may,
however, reduce the  memory assignment to a value  that will permit
only one  Page to  be in  memory at  any time.   Select 4  from the
sub-menu when you are done.

Option 2 permits you to select the character sets (fonts) available
at start-up (up to  24 each of QLS and HDF), as  well as the amount
of memory reserved  for them (default 65000 bytes).   Note that the
amount of memory needed depends on  the number of fonts loaded; for
HDF also  on the number of  characters contained in each  font (you
may leave characters undefined) as well  as on the size of the grid
selected for each  font.  Press 3 for  QLS or 2 for  HDF.  For each
assignment to any of the identification  letters B to X, press that
letter (if necessary, press the right arrow key first) and edit the
desired filename, which normally ends in _qls for a QLS file and in
_hdf for  an HDF file.  If  you delete (6) the  whole filename, the
current letter  will remain unassigned.  QLS  A to C and  HDF A are
protected and  cannot be  changed. When  finished, press  Z.  When
finished  with  both font  types,  press  4. Caution: It  is  your
responsibility to  ensure that the files  you refer to  contain the
correct type of information.  Loading a  QLS file instead of an HDF
file, or a text  file instead of either, is almost  certain to hang
Professional Publisher at start-up!

Option  3 allows  you to  change the  parameters which  control the
loading of  text from  a file.  Further  information will  be found
under each term that appears on the sub-menu in question.
Option 4 allows you to change  the defaults for the filename prompt
originally flp1_), the mouse parameters (mouse present but keyboard
control initially  selected), visibility  of the rulers  (both on),
the printer  driver filename  (epson_driver) and the  layout guides
filename (default_layout).   Press 8  after  you have  made  all
changes.

If you are  completely disgusted with your alterations  and want to
start afresh, you  can restore the old settings by  means of Option
5. No changes will be made to your disk until you press 6 and enter
Y when asked whether you are sure.

**Control.**
    (1) A sub-mode  of Mode Text, Mode  Font, Mode Draw, Mode  Line and
        Mode Fill.  It  is entered from any of these  modes by pressing
        Enter, and left by pressing Esc.

        In Mode Text  this sub-mode permits changing ink  and paper; in
        Mode Font it permits changing of fonts, geometric operations on
        characters, and adjustment of spacing;  in Mode Draw it permits
        changing brushes and palettes, as well as Boolean functions; in

Mode Line it permits changing shapes,  ink or paper, as well as
toggling fill status; and in  Mode Fill it permits selection of
fill textures.  In the last three  modes it also offers an undo
feature and in  all but Mode Font a facility  for scrolling the
Screen. Note that  to scroll around with the mouse  you must go
to the  appropriate X  (or Y)  co-ordinate indicator  and press
Select to move up (or left) and Cancel to move down (or right).
(2) The type of access to Professional Publisher.  It may be either
by keyboard (the default, which may  be changed by means of the
Configurator  program) or  by mouse.  Manual text  entry will,
however,  always  require  the  keyboard. To  toggle  between
keyboard and mouse control, navigate to the Main Menu and press
2, followed by 9.

**Control codes.**
   See Highlights.

**Convert.**
   Two  pairs  of  programs  included in  the  Professional  Publisher
   package which  enable you  to make  new versions  of Pages  and HDF
   files saved  with the previous version  (Special Desktop Publisher)
   so that they can be read and used by Professional Publisher.
   (1) To create a  PP-readable version of a Page  saved under Special
       Desktop  Publisher,  insert  the  PP  disk  in  drive  1  AFTER
       resetting   the   QL   and   pressing   F1.     Then   enter   LRUN
       flp1_page_boot, which will get flp1_page_exe running.  Edit the
       defaults offered for the width  of the original Page in pixels,
       the original filename and the new filename.
   (2) To create a  PP-readable version of a font saved  under Special
       Desktop  Publisher,  insert  the  PP  disk  in  drive  1  AFTER
       resetting   the   QL   and   pressing   F1.     Then   enter   LRUN
       flp1_hdf_boot, which will get  flp1_page_exe running.  Edit the
       defaults offered  for the font height  (normally 16, but  24 if
       the original font includes characters  for which you have set a
       descent below  the base  line; the  width is  always 16  and is
       therefore  not  asked  for),  for  the  two  original  filenames
       associated  with  the  font  (they  will  normally be  identical
       except for  the extensions _fnt and  _wdt) and for  the desired
       new  filename (suggested  extension _hdf).   The new  file will
       contain the information from both old fonts.
   Reset the QL when finished with either Convert program.

**Co-ordinates.**
   At most  times, two pairs  of co-ordinates  will be shown  near the
   upper right-hand corner of the screen.  The first pair, abbreviated
   SCX and  SCY for Screen (or  section), indicate the  horizontal and
   vertical distance from Page top left to Screen top left; the second
   pair, abbreviated PGX and PGY for Page, the horizontal and vertical
   distance from Page top left to the cursor.
   White numbers indicate  squares (1 square = 8  pixels); red numbers
   from 0 to 7 indicate any extra pixels.
   The PGX and  PGY co-ordinates will normally change as  you move the
   cursor; if this irritates  you, exit any sub-mode you may  be in by
   pressing Esc; then press  F1, which acts as a toggle  to freeze and
   unfreeze the change of co-ordinates.

**Copyright.**
   Under international  copyright law you may  make as many  copies of
   Professional Publisher for  your own use as you need;  but you will
   become criminally  and civilly  liable if you  copy the  program or
   permit it to be copied for any other purpose.

**Create.**
   You may create your own HDF or QLS fonts.

(1) To  create an  entirely new  font: Navigate  to the  Main Menu.
    Press 3 and  then the right arrow key until  the vertical strip
    at centre  screen becomes empty.  Press  4 and enter  first the
    desired  width and  then the  desired height  of characters  in
    pixels.  The only values accepted are  8, 16, 24, 32, 40 and 48
    (0 means you don't want to  go ahead after all).  Next press 1,
    and  you may  start editing.   You need  not define  the entire
    font;  characters left  undefined will  not occupy  any memory.
    Entering an undefined character will  move the cursor one pixel
    to the right.)  When you are finished, don't forget to save the
    new font.
(2) To produce a new HDF by  modifying an existing one: Navigate to
    the Main Menu.  Press 3 and  then the right arrow key until the
    vertical strip  at centre  screen becomes  empty.  Press  3 and
    edit the  name of  the old  file, then  press Enter.   When the
    empty strip is filled, press 1, and you may start editing. When
    you are finished, don't forget to save the new font.
(3) To create an entirely new QLS: Navigate to the Main Menu. Press
    4; from  the menu at  centre page  select a letter  followed by
    empty spaces.  Press the corresponding letter (you may also use
    the  right  arrow key  first  to  toggle  to  a second  set  of
    letters), followed by  1, and you may start  editing.  When you
    are finished, don't forget to save your QLS.
(4) To produce a  new QLS by modifying an existing  one: Proceed as
    for (3); but before  pressing 1, press 2, edit the  name of the
    old file, and wait for the new set to appear against the letter
    you have chosen.
Creation of a pleasing font from scratch is not an easy job; if you
have access to a book of fonts  which are in the public domain, why
not use them? Or use the c80 QLS sets in LIGHTNING SPECIAL EDITION?

**CSIZE.**
Text printed  from any of the  QLS may be selected  in 8 different
character sizes, as in the SuperBASIC CSIZE command. Each CSIZE is
characterised by a pair of parameters as follows:

| 1st parameter | 2nd parameter | Width in pixels | Height in pixels |
|---|---|---|---|
| 0 | 0 | 6 | 10 |
| 0 | 1 | 6 | 20 |
| 1 | 0 | 8 | 10 |
| 1 | 1 | 8 | 20 |
| 2 | 0 | 12 | 10 |
| 2 | 1 | 12 | 20 |
| 3 | 0 | 16 | 10 |
| 3 | 1 | 16 | 20 |

(1) When entering QLS  text manually (Mode Text), you are  led to a
    menu that forces you to make  a CSIZE selection.  (You may have
    to use  the cursor keys or  the mouse to select,  and the space
    bar or Enter  to finalise your decision: pressing  a number key
    will correctly select the first parameter but assume the second
    parameter  to be  0).  There  is  an  option  to  select  a
    demonstration first: if chosen, it  will place the word EXAMPLE
    on screen in all 8 CSIZEs.
(2) When loading QLS text,  you are led to a menu  whose first item
    is '1.   Put text on page'.   At this point you  may change the
    default CSIZE of 0,0 by  entering 9.  You may then successively
    edit the  first and  second CSIZE  parameters (only  the values
    tabulated above are accepted),  each followed by Enter. Another
    Enter will  leave the default linefeed (10 or 20)  intact.  If
    you  wish  to change  no  other  parameters, you  may  initiate
    loading by pressing 1.
 The equivalent of CSIZE for the HDFs is magnification.

**Cursor.**
A symbol  on the  screen which  indicates where  any input  will be

placed. The standard cursor shape is an arrowhead (sometimes two
arrowheads placed against each other). The cursor changes to a
rectangle for manual QLS input and when you are designing a QLS or
an HDF; to the current brush shape in Mode Draw; to the letter T in
the Type sub-mode of Mode Font; and to the letter C in the various
Control sub-modes.
The cursor is moved with the cursor keys in steps of 1, 8 or 32
pixels or to the nearest guide (depending on the current mode and
on the simultaneous pressing of Space or Ctrl). The cursor is moved
continuously by moving the mouse; for fine movement, e.g. on the
cameo, the cursor may be moved into the appropriate arrow shape on
the current instructions panel and clicking the Select button.

**Cursor keys.**
   Four keys marked with arrows. They are used to move the cursor and
   to pass through a menu; occasionally to toggle or cycle.

**Cut.**
   The action of defining a rectangle on the Page and copying it into
   scratch storage for later pasting. Any previous contents of the
   scratch storage for pasting will be lost at the moment of a cut.
   (1) To cut the area of a text Window: When presented with the
       Options menu of Mode Text, press 1 and continue. The Window
       will remain in its previous place on the Page.
   (2) To cut a whole picture, or a picture section: While the picture
       is on screen, move the cursor to the top left corner of the
       desired section and press the space bar. Repeat for the lower
       right corner. The picture will be removed from the screen - it
       was never on the Page - and only remain in scratch storage.

**Cycle.**
   The action of moving through three or more menu items (which may be
   shown simultaneously or one after another) by repeatedly pressing
   the same key (usually the space bar); pressing the key on the last
   item will again switch to the first. On reaching the desired item,
   press Enter. See Toggle.

**Default.**
   The action taken by a computer program whenever it needs a value
   for a user-selectable parameter but the user has either had no
   opportunity to make the selection (i.e. at start-up) or refused to
   do so (by entering nothing).
   Many of the default values of Professional Publisher can be changed
   by means of the Configurator program.

**Delete.**
   To remove from working memory or external memory.
   (1) To delete any file (Page, picture, QLS, HDF, guides, Windows ,
       printer driver or even a file alien to Professional Publisher)
       from disk, navigate to the Main Menu, then press 5 and 6 in
       succession. The message 'Delete which file?' will appear, and
       you can edit the suggested default filename. When finished,
       press Enter. To delete another file, press 6 again and
       continue. A more radical way of deletion, which erases all
       files on a medium is to format it.
   (2) While a Window for manual QLS entry is open, it may be
       redefined by moving and/or deleting its corners. Pressing Esc
       will delete the bottom right-hand corner; if this no longer
       exists, it will delete the top left-hand corner.

   (3) To delete a QLS character which has been manually put in a
       Window (while it is still open and the square cursor is
       visible): Either place the cursor over it and press the right
       arrow key while holding down the Ctrl key; or place the cursor

on the next character and press the left arrow key while
holding down the Ctrl key.
(4) To delete a whole line from  a Window for manual QLS entry (and
    make the followinmg  lines scroll up), there must  be an active
    rectangular cursor  in the Window.  Move  it to the line  to be
    deleted and press F1.
(5) To delete one vertical column (!)  of pixels in HDF text (Mode
    Font): If  you are in the  Control sub-mode, leave  it by
    pressing Esc.   Enter the Type  sub-mode by pressing  T.  Now
    either place the  cursor on the pixel column to  be deleted and
    press the right  arrow key while holding down the  Ctrl key; or
    place the cursor on the next pixel row and press the left arrow
    key while holding down the  Control key.  The reason for having
    a single pixel  column deleted is that font  characters are not
    of constant  width, and italics  may make the  variations even
    greater.

**Descent.**
  The distance in  pixels by which certain  lower-case characters (g,
  j,  p, q,  y) descend  below the  base-line  as  defined by  other
  characters; the part below the base-line is called the descender.
  (1) The QLS's assume  a constant descent of 2 pixels;  keep this in
      mind when designing a new QLS.
  (2) The  descent of  each character  in an  HDF can  be defined  or
      modified by you.  To do so:  Navigate to the Main Screen; press
      3,  select a  font with  the horizontal  cursor keys  or mouse,
      press 3 again,  select the character to edit  with the vertical
      cursor keys  or mouse, then press  A.  Use the  vertical cursor
      keys or mouse again to move the thin horizontal red line in the
      grid , which represents the  base-line.  You will normally wish
      to have the base-line at the same level for all characters of a
      font.  When satisfied, press Enter (or Select on the mouse).

**Desktop publisher.**
  A computer program which enables the combination of a microcomputer
  and  an associated  printer  to produce  printed  output which  may
  include both text  and graphics to give an  overall appearance that
  comes   close  to   that  of   professionally  printed   books  and
  periodicals.
  Professional  Publisher  is  by   far  the  most  powerful  desktop
  publisher for the QL.

**Device.**
  A  piece of  hardware which  can  communicate with  a computer.   A
  device may be used for input, output, or both.
  Devices used  with the QL  must be  referred to by  standard names,
  such as scr (screen), ser (serial output port), net (network).  See
  the entry 'Device'  in the Concepts section of the  QL User Manual.
  Professional  Publisher also  assumes that  you have  at least  one
  floppy disk  drive, so that the  QL will recognise the  device name
  flp1_ (a  second drive would  of course  be referred to  as flp2_);
  most disk expansions for the QL  will also inlude RAM disks (device
  names ram1_ to ram8_).
  As some commands on  the QL require either the name  of a device or
  that  of  a  file (e.g.  a  Page  may  be  saved to  neto_3  or  to
  flp2_poster_pge), the terms 'device  name' and 'filename' are often
  used interchangeably.

**Digitiser.**
  A device  that captures the image  from a video recorder  or camera
  for  computer processing.  As digitised  images often  have slight
  flaws, it  is a good  idea to use EYE-Q  or another art  program to
  clean  them  up.  They  can  then  be  loaded onto  a  Professional
  Publisher Page.

**Dimensions.**
   At the start of a  Professional Publisher session you must indicate
   the size of  the Page you are  preparing (if you have  two Pages in
   memory simultaneously, they  must be of the same size  but may have
   different orientation) in two ways,  unless you are ready to accept
   the default values of 800 by 960 pixels and A4 size (21x29.7 cm).
   (1) Page size in pixels, together with  the number of dots per inch
       characteristic of  your printer and various  selections made in
       your printer driver, determines the  actual size of the printed
       Page (more pixels mean a denser printout) and the percentage of
       the Page visible on the Screen (480x256 pixels) at one time.
       If you try to change the pixel dimensions with anything already
       on the  Page, it will come  out garbled on both  the screen and
       the printout.   You can recover  the original Page  by changing
       the dimensions back to their former values, but there is no way
       of getting useful output with changed values.
       To change the  pixel dimensions: Navigate to the  Main Menu and
       press 2, 5 and 1 in succession.  Edit the width value and press
       Enter; then edit  the height value and press  Enter.  Any width
       between 400 and 1600 pixels and any height between 480 and 1920
       pixels (both in  steps of 80;  odd  values are  automatically
       rounded down  to the nearest multiple  of 80) may  be selected.
       Combining the  top values  of width  and height  will, however,
       overtax your  QL's memory:  you'll get an  error message  and a
       chance to enter a pair of feasible values.
   (2) Page size in units (cm or inches) acts only as an aid to you in
       determining the  position of  the layout guides  as well  as of
       text and  graphics on  the Page.   It has  no influence  on the
       actual  size  of  the  printout but  should  rather  be  chosen
       according to true printout size - see (1) above.
       To change  the unit dimensions: Navigate  to the Main  Menu and
       press 2, 5 and 2 in succession.  Edit the width value and press
       Enter; then edit  the height value and press  Enter.  Any value
       from 1 to 999 cm and up to 5 characters (e.g. 21.48) are OK.

**Directory.**
   A list of all the files on a device.
   To obtain the directory  of, say, the disk in drive  1: Navigate to
   the  Main Menu  and press  5 twice.   Then edit  the default  value
   offered  to read  flp1_ and  press Enter.   If you  enter flp1_font
   instead, you will get a selective directory of all the files on the
   disk in  flp1 which  contain the  string 'font'  in any  mixture of
   upper and  lower case,  e.g. myfont, FONT_design,  LAFOntaine (see
   Wildcard).
   If there are more directory items than can be shown at once, output
   will stop after a window is  filled.  You may then either abort the
   listing by pressing Esc or continue  by pressing any other key. Any
   key will  take you back  to the menu after  the last item  has been
   displayed.

**Disk.**
   A device  for input and  output that can  hold files.  It  has more
   memory  and is  both faster  and  more reliable  than a  microdrive
   cartridge.  Alas, it is not usable on the basic QL but requires the
   addition of both hardware (disk  drive) and software (disk driver).
   Professional Publisher is so large and so powerful that it requires
   a disk installation. See also RAM disk.

**Double density.**
   (1) A way of squeezing twice as much memory onto a disk.  All disks
       used on the QL are of this type.
   (2) See Standard length/width.

**Draft.**
    (1) The less  pretty print mode (as  opposed to letter  quality) in
         many printers.  The term is not applicable to the graphics mode
         and  is therefore  irrelevant  when  Professional Publisher  is
         used.
    (2) The appearance of a QLS  that is used for run-of-the-mill text,
         as opposed to highlights.

**Draw.**
   The mode in which  you can do (and amend) free-hand  drawing on the
   Page by using  brushes.  In this mode the  information window shows
   the current  brush, a  palette and  the currently  selected Boolean
   function.
   To reach Mode Draw: See Navigation.

**Dropcaps.**
   Greatly magnified  letters at  the start of  a chapter,  article or
   paragraph in some  forms of printing.  This effect  may be achieved
   by selecting an appropriate HDF and defining a wraparound Window to
   be filled with the remaining, smaller-sized text.

**Eccentricity.**
   A measure of the  amount by which the shape of  an ellipse deviates
   from a  circle.  In  Professional Publisher  this is  controlled by
   changing the length of the second axis with the + and - keys.

**Edit.**
    (1) Whenever  you put  any text  or graphics  on the  Page manually
         (rather than loading it from a  file), you are said to edit it.
         To do  so, navigate to the  Main Menu and press  1.  Next, move
         the shuttle  to the  section of  Page you wish  to work  on and
         press Enter.  You  can then navigate to the  five editing modes
         (Text, Font, Draw, Line, Fill).
    (2) Whenever the program asks you  to enter a device name, filename
         or number,  your entry  may be 'edited',  i.e. altered,  in the
         usual  way: move  between the  ends  of what  you have  already
         entered with  the horizontal cursor keys;  delete characters by
         pressing  the horizontal  cursor keys  with the  Ctrl key  held
         down; insert characters at the  cursor position by typing them;
         indicate that editing is finished by pressing Enter.
    (3) When manually  entering QLS  text into a  Window, you  have the
         same options as  in (2); in addition, the  vertical cursor keys
         are enabled for cursor movement in  the Window, and you may use
         F1  to delete  and F2  to insert  a whole  line. See  also Word
         process.
    (4) You can also edit any character in  the QLS and in the HDF. See
         Editor.

**Editor.**
   Software  which  permits  modification  of  a  file.   Professional
   Publisher contains two character editors for modifying QLS and HDF.
    (1) To enter the QLS editor: Navigate  to the Main Menu; then press
         4.  A  menu will  appear, from  which you can select  the set to
         edit by pressing  any of the letter  keys from A to  M (or, for
         another selection, the  right cursor key, followed  by a letter
         key  from  N to  X).  Now  a  grid  magnifying  the  pixels of
         individual characters will appear on  the left-hand side of the
         screen  and a  menu on  the right-hand  side.  The  cursor keys
         control  the square  cursor in  the grid;  with the  horizontal
         cursor keys you can also move off the grid and into the menu.

         The colouring of the grid reminds  you that you should only use
         pixel  columns 2  to 6  for a  QLS that  is to  be used  in all
         CSIZES, and  2 to 8  for a 'special'  set which should  only be

used in  CSIZEs 1/0 and 1/1  (0/0 and 0/1 will  have characters
running  into  one another,  and  the  other CSIZEs  will  give
unpredictable character fragments).
A window at the bottom of  the screen will show the current set
in black and, above it,  the key each character corresponds to.
If you  are designing a previously  empty QLS, you may  wish to
start  it at  either ASCII  32 ('first'  set) or  at ASCII  129
('second' set).  To  make your selection, press  4, followed by
either F or S.
To  edit  a  character: press  1,  followed  by  2.  Use  the
horizontal cursor keys  to move the green bar that  serves as a
cursor in the bottom window to select the character you wish to
edit; then  press the space bar.  (Or control the  cursor with
the mouse and terminate with Select.)
The selected  character will  appear in the  grid, and  you can
edit it as shown:
Space    (cursor on a square)  turns the square to ink colour
Enter    (cursor on a square)  turns the square to paper colour
3        (cursor in the menu)  lets you select another character
                               as before and puts it in the grid
                               (so you can edit, say, your F
                               from an already defined E)
4        (cursor in the menu)  clears the grid
5        (cursor in the menu)  inverses the grid
6        (cursor in the menu)  inverts the grid
7        (cursor in the menu)  reflects the grid
All changes  are only made  to scratch  memory; if you  wish to
accept them, you must move to the menu and press 1 to store the
character  in  working  memory.  You  can  then  select  a  new
character to edit by pressing 2;  if you failed to press 1, the
changes you have made to  the last character will be cancelled.
When all characters  of the set have been  completed, press Esc
from the menu and press 2  to save your new character set. When
prompted  for  a  filename,  you   might  as  well  follow  the
convention and choose one that ends in _qls.
(2) To enter the HDF editor: Navigate  to the Main Menu; then press
    3.  A narrow window will appear,  from which you can select the
    font to edit by pressing  either of the horizontal cursor keys;
    when  your selection  has  been  made, press  Esc.  Now  a  grid
    magnifying the  pixels of individual characters  will appear on
    the left-hand side  of the screen and a menu  on the right-hand
    side.  The cursor  keys control the square cursor  in the grid;
    with the horizontal cursor keys you  can also move off the grid
    and into the menu.
    To  edit a  character: press 4.  If  you  wish  to start  your
    editing,  say of  E, from  the grid  representation of  another
    character, say F, first select the E with the up or down cursor
    key or mouse; then  move the cursor to the menu  with the right
    arrow key, press 3 and select  F.  If you prefer to design your
    new  F from  scratch on  a blank  grid, select  F in  the first
    place, move the cursor into the  menu and press 5.  You can now
    edit the selected character as follows:
Space    (cursor on a square)  turns the square to ink colour
Enter    (cursor on a square)  turns the square to paper colour
5        (cursor in the menu)  clears the grid
6        (cursor in the menu)  inverses the grid
7        (cursor in the menu)  reflects the grid
8        (cursor in the menu)  inverts the grid
9        (cursor in the menu)  enables the cursor  keys or mouse
                               to  scroll  the grid;  terminate
                               with Esc or Cancel

0        (cursor in the menu)  pressing the space bar will fill
                               the ink-enclosed  area around the

cursor;  terminate  with  Esc  or
                                         Cancel
          A        (cursor in the menu)  permits  changing   descent  and
                                         proportionality;  terminate with
                                         Esc or Cancel.
      In order not  to defeat the advantages  of proportionality, you
      are advised to have the  leftmost points of each font character
      in the same grid column (normally 1 or 2).
      All changes  are only made  to scratch  memory; if you  wish to
      accept them, you must move to the menu and press 1 to store the
      character  in  working  memory.   You can  then  select  a  new
      character to edit by pressing 4;  if you failed to press 1, the
      changes you have made to  the last character will be cancelled.
      To remove a character entirely  from working memory, there is a
      simplified way: just  press 2 from the menu;  the grid (scratch
      memory) will remain unchanged.
      When all characters  of the set have been  completed, press Esc
      from the menu and press 2 to save your new font.  When prompted
      for a  filename, you  might as well  follow the  convention and
      choose one that ends in _hdf.
  (3) 'The  Editor'  is the  name  of  Digital Precision's  top-notch
      program for  the modification of  any type of  file whatsoever,
      including  aspects  of text  processing  the  writers of  QUILL
      didn't even dream of.

**Ellipse.**
   To draw an ellipse: Navigate to  Mode Line.  Move the cursor to the
   spot where the ellipse is to  have its centre.  Exchange end points
   with the X key.  Move the cursor  to the spot where the longer axis
   is to have one  of its end points.  Use the Enter  key to enter the
   Command sub-mode. Press E for  ellipse.  The ellipse will be filled
   if the fill parameter is set.  The half-axis also shown will not be
   drawn.  The ellipse will  have an approximate axis ratio of  2 : 1.
   To increase this ratio  press +, to decrease it press  -. Press the
   Esc key  to leave the Command  sub-mode; you may then  draw further
   arcs,  boxes, circles,  ellipses or  lines,  or exit  Mode Line  by
   pressing F4 and selecting from the menu.

**Enter.**
   A key  found on  every computer  keyboard, although  on some  it is
   marked  'Return'  or  sports  a  bent  arrow.   Its  main  uses  in
   Professional Publisher are:
   (1) to finalise a  selection from a menu  (interchangeably with the
       space bar);
   (2) to indicate that the input of a device name, filename or number
       is finished;
   (3) to switch to the Control sub-mode.

**Error message.**
   Most error messages listed in the QL  User Manual can also occur in
   Professional  Publisher; some,  however, have  a slightly  improved
   wording:
   Arithmetic overflow        instead of            Overflow
   Bad device name            instead of            Bad name
   File error                 instead of            Bad or changed medium
   There are also a few additional self-explaining error messages:
   File too long
   NOT ENOUGH MEMORY
   Page section is too large
   Unknown
   Wrong file

   None of these error messages will crash the program; you can always
   recover from the error.

In the - highly  unlikely - case that the program  does crash, with
an error message of the type:
Task publisher_task halted after line ..., reason: ...,
or  if you  ever  get the  'Unknown' message (this,  too, is  most
unlikely),  please  report  the  details  of  the crash  to  Digital
Precision, and we will find a way to fix it - permanently.

**Esc.**
   Short  for Escape;  a key  found  on every  computer keyboard.   In
   Professional Publisher it will usually  return you to the menu from
   which you came, thus performing  upwards navigation; in some cases,
   where this would  be counterproductive, it switches  you instead to
   the next phase of the program.
   The Esc key will  not work when the program expects  input. If you
   cannot come  up with  a filename  that doesn't  result in  an error
   message, delete all the characters  and press Enter; this will work
   as an ersatz Esc key.
   When  a mouse  is  used for  input, the  Cancel  button takes  over
   the function of the Esc key.

**Extended length/width.**
   A way  of printing,  supported by  most printers,  in which  a less
   dense image of  twice the nominal length and/or  width is produced.
   Also known as single density.  See Condensed length/width; Standard
   length/width.

**Extension.**
   (1) An optional  last part  of a filename,  starting with  the last
       underscore  character.   It  is frequently  used  to  designate
       certain types  of files, e.g.  _doc  and _lis for  QUILL files,
       _qls and _fnt for fonts, _pic and _scr for graphic files.
   (2) A machine-code  procedure or function  that can be  loaded into
       the  QL  to  permit  the  use  of  extra  SuperBASIC  keywords.
       Professional Publisher contains four files with such extensions
       (filenames ending in _exts).

**External memory.**
   Memory on a device,  which will not be erased when  the computer is
   switched off.  See Scratch memory; Working memory.

**EYE-Q.**
   Digital Precision's  specialised graphics program which  runs rings
   around  the  competition.   It  will  work  hand  in  glove  with
   Professional Publisher.

**File.**
   A collection of data which can be  output to a device under a name,
   the  filename, and  recovered from  the device  by specifying  that
   name.
   Professional Publisher  uses files for the  following purposes (but
   it can delete any other type of file, too):
   (1) Pages
   (2) text files (for input only)
   (3) pictures (for input only)
   (4) QLS
   (5) HDF
   (6) guides
   (7) Windows
   (8) printer drivers
   (9) the information file updates_doc

**Filename.**
   A string of  characters used to distinguish one  file from another.
   When asked by  Professional Publisher to enter a  filename, you may

use 3 to  26 characters of your choice, including  the device name.
If your filename has zero characters, the intended command will not
be executed,  and you will be  returned to the menu  from which you
came.  If  access to the specified  file produces an error,  the QL
will burp, an error message will  be printed on the screen, and you
may enter another filename.

**File printing.**
You can 'print' a Page to disk  and defer the actual printout for a
later occasion.  To print to a file, all you have to do is select a
filename  like flp2_prt  within  your printer  driver  and then  go
through  the  normal print  sequence.   To send  the file  to  the
printer, you don't  even have to load  Professional Publisher. Just
be  sure that  the correct  disk is  inserted and,  with the  QL in
SuperBASIC,  type COPY_N  flp2_prt TO  SER1 (or  TO whatever  other
device  name may  be appropriate  for your  printer; see  the entry
'Devices' in  the Concepts  Section of  the QL  User Manual  or the
manual for any extra hardware you may be using).

**Fill.**
To Change an 'empty' closed figure,  such as the circumference of a
circle, to  a 'filled' one (a  disk) on the Page.   There are three
ways to  fill a figure  in Professional  Publisher, and all  may be
aborted, prodcuing a partial fill, by pressing the Capslock key.
(1) Any  box, circle  or ellipse  (but not  a polygon  created from
    lines) can  be filled  at creation  in Mode  Draw if  the 'fill
    parameter' is set.   To toggle this parameter, press  F when in
    Control sub-mode.
(2) Any figure in  which black encloses white (even the  loops in a
    character like 8)  can be filled in Mode Fill  with any pattern
    contained in  the 24  current fonts.   (Font A  is particularly
    useful here.)  The information  window in  Mode Fill  shows the
    currently   selected  font   and   the   texture  achieved   by
    continuously repeating the currently selected character.
    To perform a filling operation: Navigate to Mode Fill and press
    C to enter the Control sub-mode.  Select a font with the F key,
    a character with the C key; if desired, invert the fill pattern
    with the  F key.  Then exit  Command sub-mode by  pressing Esc,
    move the  cursor into the innards  of the figure and  press the
    Space Bar.  If you don't like  the result, press C, followed by
    U immediately, i.e. before pressing any other key.
    To fill  a figure where white  encloses black: Navigate  to the
    Main Menu, press 2 twice; navigate  to Mode Fill and proceed as
    above, using inversion; finally navigate  back to the Main Menu
    and again press 2 twice.
(3) When designing  an HDF, you  can often  save time by  filling a
    whole enclosed area with the  ink colour.  When the Font Editor
    menu is displayed, press the 0 key, then move the cursor inside
    the desired area  with the cursor keys or mouse,  and press the
    space bar.

**Fingerprinting.**
An accurate rendition of the Page  in 1/4 scale - only available if
your  printer  supports quadruple  density.   If  you are  using  a
1920x1600 screen, and  print it out at quadruple  density, you will
get the  result in A4  size with improved  resolution of 240  x 144
dpi.

**Font.**
(1) A  loose way  of referring  to either  a QLS  or an  HDF. While
    Professional Publisher offers you a large variety of fonts, you
    shouldn't yield to the temptation to use all or most of them on
    a single  page. To give an  effect that is  both aesthetically
    pleasing and  professional, limit  yourself to, say,  two fonts

with at most three different highlights for each.
(2) Mode Font is the mode used for HDF text entry onto the Page; it can be navigated to.  It is the only mode which, in addition to the Control sub-mode  also has a Text sub-mode  for actual text entry.  The information window in Mode Font shows the currently selected font  and the  status of various  parameters affecting the next character entered.  A  shallow window at the bottom of the screen displays  the code letter of  the currently selected HDF as  well as its  pixel width and  height and the  number of bytes the HDF takes in memory.

**Format.**
(1) The  exact form  which  computer input  or  output takes  (e.g. number  of  decimals).   See  Configuration,  Highlights, Hyphenation.
(2) To arrange the  internal layout of a storage medium  so that it can communicate with given  hardware and software. This process also  deletes  any  files  currently  stored  on  the  medium. Microdrive cartridges and disks  must be formatted before first use, or  the QL will  not be able to  access them.
To format a  medium: Navigate to the Main menu  and press first 5, then 7.   A warning message about the  effects of formatting will be displayed, and you may  now enter, say, flp1_ to format the disk in drive 1, or  nowt (or another spurious device name) if you have changed your mind.

**grafiX.**
A self-contained printer-driver program which  is an alternative to Professional Publisher's printer-driver section  but will only work on a  saved Page.

**Graphics codes.**
Printers use different code sequences  to control the production of output of condensed, standard  and extended length/width. Sometimes the number  of pixels printed in  a row is also  non-standard.  The number of pixels per row and  the code sequences used by most 9-pin printers are included in Professional Publisher as defaults:
Condensed (quad):         480 Esc 75
Standard (double):        960 Esc 76
Extended (single):       1920 Esc 90
If your printer  uses different values (check  the printer manual), you can adjust Professional  Publisher's built-in printer driver as follows: Navigate  to the  Main Menu  and press  7, followed  by 5. You  will first  be prompted  for the  'single' values.   Enter the number of  pixels per row  first (1 to  9999 will be  accepted) and press Enter.  Continue  with  the  code  sequence  required  for condensed printing, typing 27 instead of Esc, and press Enter after each number.  After the last number  press Enter a second time.  In the  display, 27  will  appear  as  Esc,  and you  will  be next  be prompted for the 'double' values.   Proceed as above, and again for the 'Quad' values.  You will be returned to the 'Drivers' menu, and you should now  save your amended printer driver by  pressing 1 and following the prompt.

**Graphics modes**
These are: Mode Draw, Mode Line, Mode Fill.

**Grey-scale conversion.**
The automatic  selection of different  stipples of black  and white for  Screen  areas  in  red  and  green,  so that  they  can be distinguished  as different  shades of grey  in a  black-and-white representation,  such  as a  printout.   If  you desire  grey-scale conversion of a  loaded picture, press Esc while the  picture is on screen, followed  by 1.   Next press  4 if the  picture is  in four

colours, or 8 if it is in 8 colours. The appropriate grey-scale
conversion will then be made.
If you cut your picture without having used this option, all pixels
that were originally blue, red or magenta will come out black,
while all pixels that were originally green, cyan or yellow will
come out white. This is in fact the only way in which some other
programs work.

**Grid.**
    (1) An auxiliary pattern of horizontal and vertical lines that can
       be superimposed on the Screen but will in no case be copied
       onto the Page. The distance between grid lines is 16 pixels, so
       that the mesh size is one square.
       To toggle the grid, the arrowhead cursor must be visible on the
       Screen. (If it is not, you are in a sub-mode, which you must
       exit by pressing Esc.) Press F3.
    (2) An auxiliary pattern of horizontal and vertical lines that can
       be superimposed on the cameo to assist in layout work. The
       default distances between grid lines are 3.5 cm horizontally
       and 3.7125 cm vertically; different distances can be defined by
       the user.
       To make the grid visible: Navigate to the Main Menu and press
       2, 8, 4 and 2 in succession. This will turn off any layout
       guides that may have been visible.
       To modify the grid distances: Navigate to the Main Menu and
       press 2, 8 and 4 in sucession. Press 1 to change the
       horizontal gap by editingthe prompted value; press 2 to change
       the vertical gap. No more than 8 horizontal and 10 vertical
       grid lines will be permitted. Press Esc when finished.
    (3) A rectangle divided into smaller rectangles in an enlarged
       representation of a QLS HDF for purposes of editing. There are
       8 small squares in a row in the QLS, and 8, 16, 24, 32, 40, or
       48 in the HDF. There are 10 small squares on top of each other
       in the QLS, and 8, 16, 24, 32, 40 or 48 (not necessarily the
       same number as in a row) in the HDF.
    (4) A rectangle much like those of (3) which serves as an aid in
       setting the magnification of an HDF.

**Guide.**
   One of the following kinds of imaginary lines on a Page: margin,
column, column break. In certain modes the cursor keys, when
pressed with the Shift key held down, will move the cursor to the
nearest guide in the selected direction. The visibility of all
guides on the cameo and on the Screen may be controlled by
navigating to the Main Menu and pressing 2, 8 and 5, followed by 1
(guides on) or 2 or 3 (guides off).

**Gutter.**
   See Column.

**Hardware.**
   Unlike software, those portions of a computer system that are
capable of being kicked. For example, a microcartridge tape is
capable of being kicked (we suspect it often is) and thus is
hardware, while the program on it is software.

**HDF.**
   Short for 'high-definition font', a special feature of Professional
Publisher. Each HDF is a set of characters of much higher
definition than a QLS, either side of the grid being 8, 16, 24, 32,
40 or 48 pixels in length. Any 24 (or fewer) of these fonts may be
selected and are then instantly available for putting on the Page
in Mode Font, and the disk contains plenty more, identifiable by
filenames ending in _hdf. Each HDF may comprise up to 160

characters, from  space to the Copyright  symbol, ASCII 32  to 191.
Various geometric operations can be performed on each character, so
that an asymmetric character like G may  be put on the Page in over
a million different ways,  not including magnification, underlining
and merging with another character.
The combination of all features makes  it unlikely that you can use
each possible modification  of each character in  each supplied HDF
within a lifetime.  But if that doesn't satisfy you, you can always
define your own HDFs!
HDF text  can be  put on the  page by navigating  to Mode  Font and
switching to the  Type sub-mode by pressing the space  bar. You may
also create and edit HDFs at will.

**Help.**
   In Modes Text, Font, Draw, Line and Fill (but not in the Command or
   Type  sub-modes), you  can obtain  an overview  of all  the actions
   performable in the  current mode by pressing F5.   Pressing any key
   will either switch to a second page of information or return you to
   the mode you were in.

**High-definition font.**
   See HDF.

**Highlight.**
   (1) A set of characters chosen  deliberately to stand out when used
       in combination  with draft characters.  Highlights  for the QLS
       include  bold, inverse,  italic, other,  subscript, superscript
       and underline; they are produced  by selecting a different pair
       of QLS  to represent each  highlight (if  you don't feel  up to
       this choice, the defaults  are very reasonable). Highlights for
       the HDFs include bold, inverse,  italic and underline; they are
       produced by manipulating one and the same HDF.
       (1.1) When entering text in the  QLS manually, you are taken to
             a  menu  titled FONTS,  which  directs  you to  make  the
             desired highlight selections.
       (1.2) When  loading QLS  text, you  are taken  to a  menu whose
             sixth item is  '6.  Font type'.  If this line  goes on to
             say HIGH DEF, press 6 and  use the space bar to toggle to
             STANDARD. At that point press 4  and use the space bar to
             toggle  whether highlights  in the  file should  be taken
             over  onto the  page.  Pressing  7 will  lead  you to  a
             sub-menu  which permits  a re-definition  of the  control
             codes that indicate highlights in  the file, as well as a
             re-assignment of the  default QLS's used for  each of the
             highlight types.

       (1.3) When entering  text manually  in HDF (Mode  Font), change
             the  highlights by  entering  Control  sub-mode with  Esc
             followed  by the  Enter  key, then  toggle  bold with  B,
             inverse  with V,  italics with  I and  underline with  U;
             finally return to  the Type sub-mode by  pressing Esc and
             the space bar.

       (1.4) When  loading HDF  text, you  are taken  to a  menu whose
             sixth item is  '6.  Font type'.  If this line  goes on to
             say STANDARD, press 6 and use  the space bar to toggle to
             HIGH DEF. At that point press  4, and you will be shown a
             Table  with  six  lines  and  six  columns.  Each  line
             corresponds to one highlight that may be contained in the
             text to  be loaded.  Unless  you like the  defaults shown
             (an empty circle stands for No, a filled circle for Yes),
             use the up and down cursor  keys to move to the highlight
             whose assignments you wish to  change and press the space
             bar or  Enter.  The  Table values for  that line  will be

blanked, and you must now make six decisions. First
select a letter from the HDFs shown. Then type Y or N
(followed by Enter) to decide whether the bold version of
that HDF should be used and whether it should be
italicised. If your answer to the latter question was
yes, you will be given a chance to adjust the slant with
the horizontal cursor keys. Next edit the height of each
linefeed and the width of each space between characters
in pixels, terminating each entry with Enter. Finally you
are asked whether you wish to merge with a different
character; if so, you may select a font with the
horizontal cursor keys, a character with the vertical
cursor keys, and enable merging with the M character as a
toggle. Repeat the process for each other line of the
Table where you wish to make changes; press Esc when
finished.
If you should need to change the assignment of HDFs to
file-embedded control characters before loading, you must
do it in QLS mode. In the menu whose first line reads
'1. Put text on page' select 6 to toggle from HIGH DEF to
STANDARD, proceed as under (2) above, then select 6 again
and continue the loading sequence.

(2) Another form of highlight is the colour bar displayed in a menu
to indicate the currently selected item; it can be moved by the
up and down cursor keys, by the mouse or by typing the
appropriate number.

**Hyphenation.**
When text is loaded from a file and configuration is set to
hyphenate, it is possible to set two hyphenation parameters which
determine the minimum number of characters that must be present
before and after the hyphen if the word is to be hyphenated rather
than word-wrapped. To change these parameters from their default
value of 3: When you are in the menu whose first line reads '1. Put
text on page', press 0. You will be prompted for the two
parameters, which may be set to any value between 1 and 9. Press
Enter after each parameter; you will be returned to the 'Put text
on page' menu.

**Inch.**
A linear measure both ancient and unwieldy, often abbreviated ".
It equals 2.54 cm.
The default unit is cm. If you wish to toggle to inches, navigate
to the Main Menu and press 2, 8 and 6 in succession.

**Indent.**
To start a line of text, e.g. the first line of a paragraph or a
sub-category in a list, deliberately in a column other than the
first.
When manually entering QLS text or loading QLS or HDF text from a
file, you can decide whether and to what extent indented lines,
i.e. lines starting with spaces, are to be 'unindented'; the
effect will only be noticeable in case of 'left' and 'both'
justification.

(1) Manual QLS entry: After you have pressed Esc to complete text
entry and the menu headed 'Text' appears, press 1 and then 6.
For continuation see below.
(2) Loading: When you are presented with the menu whose first line
is '1. Put text on page', press 8. For continuation see below.
In either case continue by moving the highlight to 'Indent' with
the down cursor key or mouse. Press the space bar to cycle through
the options: < 2 to < 7, Yes and No (< 2 is the default); press
Enter when the desired option is shown. < 3 means that every line

that starts with 1 or 2 spaces will be shifted to start at the left
margin of the column or Window  , whereas lines starting with three
or more spaces will remain untouched.  If 'both' has been selected,
the analog principle applies at the  end of each line.  'Yes' means
that all lines will be normalised, 'No' none.

**Information window.**
  The area displayed in  the rightmost 12 % of the  screen (the other
  88 % being taken  up by the Screen) when you  are editing the Page.
  The top line tells you the mode you are in (Text, Font, Draw, Line,
  Fill).   Next come  the  current co-ordinates.  The  centre of  the
  information window is  different in each mode,  showing the current
  settings of parameters relevant to that mode.  At the bottom of the
  information window  a reminder of the  effect of the  five function
  keys F1 to F5 is displayed.

**Initial Screen.**
  This is  just a small  window that instructs  you to press  C while
  holding down the control key,  followed by Enter.  Depending on the
  configuration of your QL, the cursor  in this window may already be
  flashing, in which  case you need only press Enter.   You will then
  be taken to the Main Menu.
  You will  be returned to the  initial screen when you  switch tasks
  (see Multitasking).   Press C while holding  down the Ctrl  key, if
  necessary repeatedly, until the flashing cursor is 'in' the desired
  task.

**Ink.**
  The colour in which text and graphics are put on the Page.
  (1) When you enter QLS text manually, the default ink is black. You
      may toggle to  white when in Mode Text by  pressing Enter (this
      enters the  Command sub-mode) and then  I.  The change  will be
      reflected  in the  information window.   Press Esc,  unless you
      also want to change the paper.
  (2) When you load text from a file, the ink is black.
  (3) When entering  HDF text in Mode  Font, you can control  the ink
      for all characters yet to be typed by pressing Enter to go into
      the Control sub-mode, followed by C.   Now use the space bar to
      cycle  through the  seven  options offered  in the  information
      window: black, white and  five stipples giving different shades
      of  grey.  When  the desired  ink  shows, press  Esc, move  the
      cursor to the desired top  left-hand corner of your text, press
      T and start entering text.
      Under  mouse  control, move  the  cursor  into the  information
      window and onto the INK panel;  then press the Select button to
      cycle through the inks.
  (4) When drawing  shapes in Mode  Line, you  can change the  ink by
      pressing Enter (this will  put you  in the  Control sub-mode),
      followed  by I.   You  can  then cycle  through 7 ink  colours
      (black, white and  five stipples for different  shades of grey)
      by means of the  space bar.  Your choice will be  echoed in the
      information window.
      Under  mouse  control, move  the  cursor  into the  information
      window and onto the INK panel;  then press the Select button to
      cycle through the inks.

  (5) For freehand  drawing in  Mode Draw and  for filling  shapes in
      Mode Fill,  you select  the brush  or the  texture respectively
      instead of the ink.

**Insert.**
  To  place amidst  working memory,  scrolling what  comes after  the
  cursor position.
  (1) To insert a QLS character in a manual-insertion Window while it

is still open and the square cursor is visible: Place the
cursor over the character BEFORE which the new character should
go and type the latter.
(2) To insert an empty  line in a Window for manual  QLS entry (and
make the following lines scroll  down), there must be an active
rectangular cursor  in the Window.  Move  it to the  spot where
the extra line is to appear and press F2.

**Interpolation.**
Estimation of  the shape or texture  of a graph between  points for
which it has  actually been computed.  This is  important when your
Page  is stretched  or squeezed  to the  dimensions you  specified,
because  screen  pixels  and  printer dots  are  then  unlikely  to
coincide.
(1) Professional  Publisher  automatically performs  the  necessary
computations to avoid gaps and corners in screen output.
(2) When instructing  Professional Publisher  to print a  Page, you
will find an option '4.  Interpolate' in the last (length) menu
before printing starts.   If you select it by  pressing 4, each
pixel will be repeated at a  slight vertical offset to obtain a
'denser' image.
(3)  The  grafiX  printer  driver  contains  an  option  to  select
horizontal and/or vertical interpolation.

**Inverse.**
To  exchange black  and white  in a  given area.   This may  affect
individual characters, all characters of a QLS or HDF, the contents
of a Window, or the whole Page.
(1) When entering  QLS text  manually, you  will be  led to  a menu
whose first  line is 'Enter text'.   To inverse whatever  is in
the current Window, press 4.
(2) When you are loading text from a file, the control code 'Ctrl +
V' (ASCII 22)  will as a default cause  following characters to
be loaded in  inverse.  You can change this value  when you are
in the  menu whose first  line reads '1.  Put text on  page' by
pressing 7 twice and responding  to the prompt 'Enter new code'
by pressing a letter key while holding down Esc.
(3) When entering HDF text in Mode  Font, you can inverse the whole
font for all characters yet to be typed by pressing Enter to go
into the Control sub-mode, followed by V.  You will be shown an
enlarged character divided horizontally  into 8 strips. You may
select  any or  all strips  for inversing  by typing  the strip
number,  thus  selecting  from  no  less  than  512  different
inversing styles.  The enlarged  character will show the effect
of your  selections, and  you may  undo any or  all of  them by
retyping the  number of  the strip  in question.   When finally
satisfied,  press  Esc, move  the  cursor  to the  desired  top
left-hand corner of your text, press T and start entering text.
(4) For  freehand drawing  in Mode  Draw, you  can inverse  all the
brushes  by pressing  Enter to  go into  the Control  sub-mode,
followed by V and Esc.
(5) The same  sequence of  keypresses serves  for inversion  of the
current texture for filling shapes in Mode Fill.
(6) When editing a QLS character, you can inverse the whole grid by
moving the cursor off its right edge into the menu and pressing
4.

(7) When editing  an HDF character,  you can similarly  inverse the
whole grid  by moving the  cursor off  its right edge  into the
menu and pressing 4.
(8) To inverse the whole Page, navigate  to the Main Menu and press
2 followed by 4.
(9) When loading a picture, the place  of inversion is taken by the
more powerful recolour command.

**Invert.**

To reflect a given area as though a mirror were placed at right angles to the Page along its left (or right) edge. Inverting may be performed on individual characters, all characters of a QLS or HDF, the contents of a Window, or the whole Page. If you can't remember the difference between inverting and inversing, note that the two symmetry operations, invert and reflect, both end with t, while the colour operation, inverse, does not.

(1) When entering QLS text manually, you will be led to a menu whose first line is 'Enter text'. To invert whatever is in the current Window, press 6.

(2) When manually entering HDF text in Mode Font, you can invert the whole font for all characters yet to be typed by pressing Enter to go into the Control sub-mode, followed by N. Press Esc, move the cursor to the desired top left-hand corner of your text, press T and start entering text.

(3) When editing a QLS character, you can invert the whole grid by moving the cursor off its right edge into the menu and pressing 5.

(4) When editing an HDF character, you can similarly invert the whole grid by moving the cursor off its right edge into the menu and pressing 8.

(5) To invert the whole Page, navigate to the main menu and press 2, followed by 2.

(6) To invert a loaded picture, press Esc and then 2.

**Italic.**

One of the highlights that can vary the appearance of an HDF or QLS, distinguished by slanting main lines.

(1) To select the QLS you have defined as italic for manual text entry, navigate to Mode Text, open a Window and choose CSIZE. Press F4, 3 and Esc in succession; then enter your text.

(2) When loading a QLS text file into Windows or columns, text saved as italic in a QUILL file will always be loaded correctly. If italic characters from a non-QUILL file are not reproduced correctly, you will have to change the highlights and reload.

(3) When entering HDF text manually, italic characters may also be selected. After navigating to Mode Font, enter the Control sub-mode by pressing Enter; then press I. You can then select any of sixteen slants in either direction with the horizontal cursor keys. As a control, the appearance of an upper-case I will change accordingly, and in the information window the square against the word 'Italic' will be replaced by a right or left arrow in all positions except neutral. Leave the Control sub-mode with Esc, enter the Type sub-mode by hitting the space bar, and type.

(4) When loading an HDF text file into Windows or columns, be sure to make the highlights assignment so that text intended as italic comes out in whichever font you find most desirable.

**Justify.**

To align either end or both ends of each line of text with the respective margins, or to centre each line in its column or Window.

(1) When you have finished entering QLS text manually and pressed Esc, you will be taken to a menu headed 'Text'. Press 1, followed by another 1 (for left justification), or 2 (for right justification), or 3 (for centring), or 4 ('Both', for justification at both ends of the line), or 5 ('Off', leaving all leading and trailing spaces untouched).

(2) When loading text from a file, you will be taken to a menu whose first line is '1. Put text on page'. Press 5, and use

the space bar to cycle through the options 'Both' (for
justification at both  ends of the line; this  is the default),
'Off' (leaving all  leading  and  trailing spaces  untouched),
'Left', 'Right' and 'Centre'.
(3) When you enter HDF text manually (Mode Font), it will always be
    left-justified.

**K.**
   Abbreviation for  kilobyte, the  unit in  which memory  capacity in
   computers  and devices  is measured.   One  K is  composed of  8192
   encodings of yes-or-no  decisions; another way of looking  at it is
   the capacity to hold 1024 characters.

**Kerning.**
   Performing justification  at both  ends of a  line by  widening not
   only the spaces between words (which might become excessively wide)
   but also the distances between characters within a word. Kerning is
   fully supported by Professional Publisher.
   (1) When entering  QLS text manually, you  will be taken to  a menu
       headed 'Text'.  Press 1 and then 6.  The first two lines of the
       menu  now  displayed  indicate  that as  a  default, 40 %  of
       justification will be  carried out between characters  and 60 %
       between words.  To change this  distribution (in steps of 5 %),
       move the highlighted menu bar  to the item whose percentage you
       wish to increase and press the space bar for each 5 % gain. The
       other  parameter will  be automatically  decreased by  the same
       percentage.  When satisfied, press Esc.
   (2) When loading  text from  a file,  you will be  taken to  a menu
       whose  first line  is  '1.   Put text  on  page.'  Press 6  and
       continue as above.

**Landscape.**
   One  of  the two  orientations  of  a  Page,  with the  long  edges
   horizontal.

**Laser printer.**
   If you do  not have a laser  printer but wish to  have high quality
   laser printer output of your saved pages, write to:
       Taylor Made Systems, 71  Wellington Close, Hepworth Way, Walton
       on Thames, Surrey KT12 1BB

**Last line.**
   The last line  of a paragraph or  of a Window may  be exempted from
   the justification that  applies to other text that  is being loaded
   or to  QLS text that is  being entered manually. Press  6 when the
   menu headed 'Text' appears (manual entry); or press 8 when the menu
   whose first  item is '1. Put  text on page' appears  (loading). In
   either case move  the highlight to Paragraph or Last  line with the
   up and down cursor  keys or mouse, and use the  space bar to toggle
   between Yes (filled  circle; justify) and No (empty  circle: do not
   justify).  The defaults are No for the last line of a paragraph and
   Yes for the last line of a Window.

**Layout.**
   The  distribution of  guides on  the Page.   To change  the layout,
   navigate  to the  Main Menu  and  press 2,  then 8.   The menu  now
   displayed will offer all the required options.

**Layout guide.**
   See Guide.

**Lightning.**
   Digital Precision's  magic-wand software that will  greatly enhance
   the speed of  ALL your QL software (including, but  not limited to,

Professional Publisher) and provide loads more QLS fonts too!

**Line.**
One of the  modes for editing a  Page.  It may be  navigated to and
permits the  drawing not  only of  lines but  also of  arcs, boxes,
circles and ellipses.
The information  window in Mode  Line shows the  currently selected
ink and paper colours.
To draw a line:  Navigate to Mode Line.  Move the  cursor to one of
the desired end points.  Exchange corners with the X key.  Move the
cursor to  the other  end point.   Use the Enter  key to  enter the
Command sub-mode.   Press L for line,  and the line will  be drawn.
Press the Esc key to leave  the Command sub-mode; you may then draw
further arcs, boxes, circles, ellipses  or lines, or exit Mode Line
by pressing F4 and selecting from the menu.

**Linefeed.**
A non-printing character (ASCII 10)  which is generated during text
entry whenever  the Enter key is  pressed.  It moves the  cursor to
the  beginning  of  the  next line.   Professional  Publisher  will
normally adjust linefeeds automatically to  the number of pixels in
keeping  with the  current  vertical CSIZE  or magnification.   The
following special cases should be borne in mind:
(1) When loading text from a file, you may wish linefeeds to appear
    in the columns or  Windows as in the original text,  or you may
    wish to  suppress them (this  is the  default). If you  wish to
    keep them, press 3 when you are in the menu whose first line is
    '1. Put text on  page' and use the space bar  to toggle between
    the two options.  For HDF loading, see also (3).
(2) When entering  HDF text manually in  Mode Font, you  can adjust
    the linefeed from its default, which is 20 pixels, to any value
    between 0  and 64.   The value will  be multiplied  by whatever
    vertical  magnification  is  currently   set.   To  adjust  the
    linefeed value:  If you are in  the Type sub-mode, leave  it by
    pressing Esc.   Enter the  Control sub-mode by  pressing Enter.
    Adjust the linefeed  with the up and down error  keys and press
    Esc when  satisfied.  Go to the  Type sub-mode by  pressing the
    space bar and start typing.
(3) When loading HDF text from a file,  press 7 when you are in the
    menu whose first line is '1.  Put text on page'.  Select a line
    of the Table displayed by means  of the up and down cursor keys
    and  the  space  bar,  or  by means  of  the  mouse; edit  the
    parameters shown in the column  headers for the HDF in question
    (see Highlights) and  in particular the height  of the linefeed
    in pixels, unless  you are satisfied with the  default value of
    20.  Repeat the  process for all other lines  referring to HDFs
    you wish to use.  When finished, press Esc.

(4) Your printer may  be set to either a  'mere' linefeed (continue
    printing  in the  next line  to the  right of  the last  column
    printed on  the current line) or  to 'linefeed +  return' (also
    known as 'automatic linefeed';  continue printing from column 1
    of the next line).  The default  is the former, unless you have
    used the Configurator program to load a printer driver with the
    other setting.   If you  wish to change  the setting  or aren't
    sure  which one  is currently  in force,  navigate to  the Main
    Menu; press  7, followed by  3, and enter  Y or N  depending on
    your printer setting in response to the question 'Are automatic
    linefeeds set (Y/N)'.  This is one instance where you must make
    an unequivocal  response; Esc will not  work, but a  mere Enter
    will be taken as 'No'.
    Your response will  become part of the  current printer driver;
    you may wish to make it permanent by saving the printer driver.
    If you  use the  grafiX printer  driver  and your  printer  is

already included on its menu, no adjustment need be performed.

**Line spacing.**
   Printers use different code  sequences to control different amounts
   of paper  feed. The  codes used  by most  printers are  included in
   Professional Publisher as defaults:
   1/9 inch:                  Esc 51 24
   1/216 inch:                Esc 51 1
   11/216 inches:             Esc 51 11
   0:                         Esc 65 0
   If your printer  uses different values (check  the printer manual),
   you can adjust Professional  Publisher's built-in printer driver as
   follows: Navigate to the Main Menu and press 7, followed by 4.  You
   will be presented with a menu from which you can select the code to
   be changed.  Enter the code sequence required, typing 27 instead of
   Esc,  and press  Enter after  each number.   After the  last number
   press Enter a second time.  In  the display, 27 will appear as Esc,
   and  you may  move  to  a different  menu  line  to change  another
   setting. When you are done, press Esc.  You will be returned to the
   'Drivers' menu, and you should now save your amended printer driver
   by pressing 1 and following the prompt.

**Load.**
   To  copy a  file from  external memory  into a  designated area  of
   working memory.   The previous contents of  that area will  be lost
   without warning!
   (1) To load - and start - Professional Publisher, place the program
       disk in drive 1, reset the  QL, and press F1 when prompted.  As
       the program is over 200 K in length, loading will take a minute
       or two. If you wish to  have another program resident in the QL
       simultaneously with Professional Publisher, see Multitasking.
   (2) To load a Page, navigate to the Main Menu and press 5, followed
       by 2.  When prompted for  a filename, edit the default filename
       offered and press Enter.
   (3) To load QLS or HDF text,  proceed as above, but press 4 instead
       of  2.  Decide  on  the  use of  Windows  or  columns (to  load
       Windows,  press  2; when  prompted  for  a filename,  edit  the
       default  Windows filename  offered and  press Enter).   To load
       QLS, menu  item 6 (Font Type)  must be STANDARD, while  to load
       HDF it must  be HIGH DEF; if  it isn't the right  type, press 6
       and the  space bar.  Next  press 1, -  unless you wish  to make
       further changes  to the appearance of  the text; edit  the text
       filename as  prompted.  Type 2 and  use the space bar  to cycle
       between  the  file types  ASCII  (the default),  QUILL_LIS  and
       QUILL_DOC. Having made your selection, press 3 and - unless you
       wish to make further changes to the appearance of the text - 1.

       A one-line window  showing the first 64 characters  of the text
       will appear at the bottom of  the screen, and a menu will offer
       several options  to start  loading at some  other point  in the
       text. (This is important if you have already loaded part of the
       file onto  a previous Page).   When satisfied, press  Esc.  The
       message 'Please wait'  will appear, and the  columns or Windows
       will be filled  with red lines to indicate the  progress of the
       loading.  You can abort loading by pressing Esc.
   (4) To load a picture, navigate to  the Main Menu and press 3. Tell
       the program whether you are loading a picture produced by EYE-Q
       (press 2) or a screen saved normally, e.g.  with the SuperBASIC
       SBYTES command (press  1).  Then edit the  default filename you
       are offered (picture  filenames typically end in  _scr or _pic)
       and press Enter.  If you have guessed the file  type wrong and
       get garbage on the screen, press Esc, 0 and 3 in succession.
   (5) To load  a QLS, navigate to  the main menu and  press 4. Select
       one of  the letters A to  L (or, after toggling  with the right

arrow key,  M to X); the  set shown against this  letter is the
one to  be replaced.   Then type 3,  edit the  default filename
offered,  and press  Enter. QLS's are  typically stored  under
filenames ending in _qls.

(6) To load an HDF, navigate to the  main menu, press 3 and use the
horizontal cursor keys to select one of the fonts A to X as the
one  to  be  replaced.   Press 3,  edit  the  default  filename
offered,  and press  Enter.  HDFs are  typically stored  under
filenames ending in _fnt.

(7) To load a set of guides: navigate to the Main Menu and press 2,
8 and 6  in succession.  Edit the default  filename offered and
press Enter.

(8) To load a set of Windows: see (3) above.

(9) To load a  printer driver: navigate to the Main  Menu and press
2, 7  and 2 in succession.   Edit the default  filename offered
and press Enter.

**Machine requirements.**
Professional Publisher needs a QL computer  with at least 512 K RAM
expansion (minimum total  640 K), at least one disk  drive with the
associated  software,  and  an  Epson-compatible  9-pin  or  24-pin
printer.  Ah well, a printer cable to connect the printer to the QL
is also a good idea.) You must also connect a monitor rather than a
TV set to  your QL; else you will  not be able to see  parts of the
screen.  A Smiling  Mouse for input control is  optional. While our
advertising has  always clearly stated the  need for a  full memory
expansion,  you  may  perhaps   still  have  acquired  Professional
Publisher even  though your QL has  not been upgraded to  the above
standards.  In that case you might well consider getting an upgrade
now; prices for this hardware have become quite reasonable.  If you
do have  at least  256 K expansion  (total 384 K),  write to  us to
exchange  Professional  Publisher  for  the  less  powerful  Special
Edition Desktop Publisher.
If you are using the grafiX printer driver, you may find that 640 K
will not suffice to have Professional Publisher and grafiX resident
simultaneously, although  this simultaneity is not  crucial. If you
wish to  upgrade, we can offer  you Miracle Systems' Trump  Card, a
768 K extension with disk driver,  RAM disk driver and Tony Tebby's
Toolkit II.

**Magnification.**
The expansion of an area of  the Page to several times its original
size in pixels horizontally and/or vertically.

(1) To  magnify the  HDF you  have selected  for manual  text entry
(Mode Font): If you are in the Type sub-mode, exit it with Esc.
Select the Control sub-mode by pressing  either X or Y.  A grid
will be displayed with the top  left square filled in red.  You
can expand and  re-shrink the red area with the  cursor keys or
mouse up  to 8 times the  basic size; the X  (horizontal) and Y
(vertical) magnification  factors displayed in  the information
window will change accordingly.  All text-associated parameters
(space, line feed) will be automatically magnified as well.

(2) To magnify the  HDF you have selected for loading  from a file:
When the menu whose  first item reads '1. Put text  on page' is
displayed, press 9.  Press X to  edit the X magnification, Y to
edit the Y  magnification (the defaults are 1,  i.e.  none, and
values up to 4 may be entered.

(3) To magnify a  picture that you have loaded means  to select one
half of it and expand that half to full screen size, discarding
the other half.  To do this, press Esc, 5 and any number from 1
to 4, depending on  which half of the picture you  wish to blow
up.  (Hadn't thought that an object could have four halves, had
you?)

(4) To  magnify  the whole  Page  at  printout time,  see  extended

length/width.

**Margins.**
   The imaginary lines parallel to the edges of the paper that enclose
   the area  you wish to  cover with  text and/or graphics.   They are
   shown  in white  on  the  cameo  and  optionally  on  the Page,  and
   automatically taken into account when  you define columns; like the
   other guides they can be redefined, saved, loaded and used as lines
   of reference in cursor movement.
   To change  the margin settings from  their default values of  1 cm:
   Navigate to  the Main  Menu, press  2, followed by  8 and  1.  Next
   press any of the number keys 1  to 4, depending on which margin you
   wish to change,  and edit the current  value.  You may use  up to 6
   characters, including  any decimals, and  you must of  course leave
   some area between either pair  of margins.  When you are satisfied,
   press Enter,  and you will see  the black line in  question move on
   the cameo.

**Medium.**
   See Storage medium.

**Memory.**
   Hardware  that is  a  key component  of any  computer  and of  many
   devices;  the  part  where  information  is  stored.  Professional
   Publisher  works within  the part  of the  QL's memory  called RAM;
   information about  the Page you are  building up is  either scratch
   memory or working  memory.  The contents of scratch  memory will be
   lost if you indicate that you  are disgusted with the appearance of
   some  part of  the Page  and wish  to retry;  the contents  of both
   scratch and  working memory  will be  lost when  you switch  off or
   reset the  QL, unless  you have  saved them  to external  memory on
   disk.

**Memory expansion.**
   Hardware which permits you to increase  the RAM of your QL from its
   original 128 K.  It comes in  chunks of 128 K or multiples thereof.
   See Machine requirements.

**Menu.**
   A list of user's  choices that appears on the screen  in the course
   of execution  of a  program.  The  proposed choice  is highlighted,
   i.e.  shown in  a different colour from the rest.   This 'menu bar'
   can be moved with the cursor keys or a mouse to the desired option,
   which is then confirmed by pressing the space bar or the Enter key.
   Alternatively typing the number of the chosen item on the list (or,
   if the option starts with a letter, that letter) will also make the
   selection in most cases.

**Merge.**
   To combine.   In Professional  Publisher the term  is used  for the
   application  of a  Boolean  function  (AND, OR,  XOR)  to two  font
   characters to  yield a new character  when typing HDF text  in Mode
   Font or loading it from a file.   As the 'merge character' can be a
   graphic  pattern, merging  can  give  the effect  of  writing on  a
   patterned background.

   To select a merge character:
   (1) From Mode Font:
       If you are in Type sub-mode, leave it by pressing Esc.  Press M
       and use  the cursor keys or  mouse to change the  character and
       font suggested in the top two lines of the displayed panel. Use
       the A, O or  X key to select the desired  Boolean function, and
       the M key to toggle between enabling and disabling the merging.
       All  your choices  will be  echoed in  the information  window.

Press  Esc, move  the cursor  to the  desired place,  press the
        space bar and start typing.
    (2) When loading:
        When  the menu  whose  first item  is '1.  Put  text on  page'
        appears, press 4 and select a  line from the Table that will be
        displayed by  means of  the cursor  keys and  space bar  (or by
        means of  the mouse).   When the line  becomes blank,  make the
        desired  selections  (See  Highlights).   The  last  selection,
        merge, will offer much the same options as in (1) above. Repeat
        as necessary for the other lines.

**Mirror image.**
    See Reflect.

**Mode.**
    One of five states the program may assume when you wish to edit the
    Page: Text, Font,  Draw, Line and Fill.  Each  mode permits placing
    different types of  items on the Page.  For reaching  any mode: See
    Navigation.

**Mouse.**
    An  input device  for a  computer  which offers  an alternative  to
    typing in many situations.  It  features a roller to control cursor
    movement and  one or more buttons  to enter commands with.  QL mice
    come with two buttons: 'Select'(right) and 'Cancel' (left). Rolling
    the  mouse will  move the  cursor in  the desired  direction, while
    pressing Select corresponds  to the space bar,  and pressing Cancel
    to Esc.
    When fine movement is required, e.g.  on the cameo, the cursor may
    be moved into the instructions  panel and the Select button pressed
    while the cursor is on the respective arrow.
    Scrolling  the  Screen  works  by  moving  the  cursor  into  the
    information windows  and pressing a button  with the cursor  on the
    SCX or SCY coordinate: Select will increase the co-ordinate, Cancel
    will decrease it.
    There is no control on the mouse that corresponds to the Enter key.
    Therefore there is no Control sub-mode when working with the mouse.
    Instead,  move  the  mouse  onto  the  desired  parameter  in  the
    information window and use Select to toggle or cycle.

    In Mode Line, pressing  Select will cycle round (a) one  end of the
    shape, (b)  the other end,  (c) the  C-shaped cursor of  what would
    otherwise be the Control sub-mode.
    To navigate between modes with the mouse: Move the mouse pointer to
    the top  line of the information  window and press Select  to go to
    the  next mode,  Cancel  to  go to  the  previous  mode.  The  mode
    sequence is: Text - Font - Draw - Line - Fill.

    Professional Publisher must be told whether a mouse is connected to
    your QL.  The  default (which can be changed  with the Configurator
    program)  is  keyboard  control.   To  switch  to  mouse  control,
    disabling the cursor keys, navigate to  the Main Menu and select 2,
    followed by 9.   (Warning: Doing this with no  mouse connected will
    hang your QL.)  The same selection sequence  is used  for returning
    to cursor-key control.

**Multitasking.**
    Having  two or  more programs  running simultaneously  on the  same
    computer.  The QL, unlike many other micros, supports multitasking,
    but only one of the programs can be in interpreted SuperBASIC. (One
    of many  good reasons  to get Digital Precision's  TURBO compiler,
    which produces  fully multitasking  -  and  immensely  faster  -
    programs.)
    If  you  wish  to  access  another  program  (except  the  SuperBASIC

interpreter, which is always available) while Professional
Publisher is running, (QUILL or Digital Precision's The Editor
might be a good idea), we advise you to start the other program(s)
first. Then put the Professional Publisher disk in drive 1, press
C while holding down the Ctrl key (if necessary, repeat this until
the flashing cursor indicates that you are in SuperBASIC), and type
LRUN flp1_boot. Professional Publisher will then be loaded and
executed.
Even accessing the lowly SuperBASIC interpreter can make a lot of
sense, e.g. to perform some computation or to execute a file
operation not directly supported by Professional Publisher (e.g.
COPY).
To switch from Professional Publisher to another program: Navigate
to the Main Menu and press 8 and 1 in succession; this will return
you to the initial screen. Now press C while holding down the Ctrl
key as many times as necessary for the cursor to appear in the
program of your choice. If you do not wish to return to
Professional Publisher, you can quit it by pressing 2 instead of 1.
In that case don't forget to save the result of your efforts first!
(Come to think of it, this is a good idea even if you do return to
Professional Publisher; are you really sure that whatever other
program you are using - if it isn't by Digital Precision - won't
crash?) To make assurance double sure (yes, this is the original
quotation), you will be asked to confirm your desire to quit.

**Navigation.**
Moving from one state of Professional Publisher to another. The
main states and the key sequences to switch beween them are as
follows (* stands for 'Move shuttle and press the space bar'):

|  | Main Menu | Mode Text | Mode Font | Mode Draw | Mode Line | Mode Fill |
|---|---|---|---|---|---|---|
| To move from |  |  |  |  |  |  |
| Main Menu to: |  | 1 * | 1 * F4 4 | 1 * F4 4 F4 C | 1 * F4 4 F4 C F4 4 | 1 * F4 4 F4 C F4 5 |
| Mode Text to: | F4 5 |  | F4 4 | F4 4 F4 C F4 4 | F4 4 F4 C F4 4 | F4 4 F4 C F4 5 |
| Mode Font to: | F4 D F4 5 | F4 D |  | F4 C | F4 C F4 4 | F4 C F4 5 |
| Mode Draw to: | F4 6 | F4 2 | F4 3 |  | F4 4 | F4 5 |
| Mode Line to: | F4 5 | F4 1 | F4 2 | F4 3 |  | F4 4 |
| Mode Fill to: | F4 5 | F4 1 | F4 2 | F4 3 | F4 4 |  |

If you happen to be in a sub-mode (cursor in the shape of a C or
T), you must press Esc before F4.
If you are in any sub-mode of the Main Menu, repeated presses of
the Esc key will return you to that menu. See also Mouse.

**Options.**
Another word for choices. When the information window is visible,
you can call up a menu of options, which include navigation, by
pressing F4. If you happen to be in a sub-mode (cursor in the
shape of a C or T), you must first press Esc.

**OR.**
A Boolean function whose input in this program are two rectangles

of equal size. Its output is another rectangle of the same size,
where each pixel is in paper colour unless the corresponding pixel
in at least one of the input figures is in ink colour. The result
of ORing the / and \ characters is the character X.
(1) To select OR for drawing, navigate to MODE DRAW, enter the
    Command sub-mode by pressing Enter, then type O and return from
    Command sub-mode by hitting Esc.
(2) To select OR for merging HDF characters, navigate to Mode Font;
    press F4, followed by 4 and O, then do your merging.

**Orientation.**
   The way the paper is to be arranged to reproduce the Screen
   (Landscape, Portrait). The default at start-up is Portrait. If
   you wish to change the orientation of a page (it need not be the
   same one for page 1 and page 2), do it before you have put anything
   on the Page! Navigate to the Main Menu and press 2, followed by 6.
   If you do this with anything already on the Page, it will come out
   garbled on both the screen and the printout. Fortunately this
   sorry state of affairs is reversible. Change the Page orientation
   back to its former state, and at print time, when the menu with the
   first line '1. As Cameo' appears, press 2 for sideways printing.

**Other.**
   One of the highlights that can vary the appearance of a QLS or be
   selected for representation by a specific HDF when loading text
   from a file. We thought you might like to have the option of
   defining an extra kind of highlight in addition to the standard
   ones.
(1) To select the QLS you have defined as 'other' for manual text
    entry, navigate to Mode Text, open a Window and choose CSIZE.
    Press F4, 6 and Esc in succession; then enter your text.

(2) When loading a QLS or HDF file, parts of which are to appear in
    the 'other' set, into Windows or columns, it must contain
    appropriate control characters, which must be reflected in the
    highlights you have set.

**OVER.**
   A Boolean function whose input in this program are two rectangles
   of equal size. Its output is another rectangle of the same size,
   where each pixel is exactly the same as the corresponding pixel in
   the 'new' rectangle, irrespective of the 'old' rectangle. The
   result of OVERing the / character on the \ character is /.
   The function is only meaningful, and therefore supported, for
   drawing with brushes. To select OVER, navigate to MODE DRAW, enter
   the Command sub-mode by pressing Enter, then type V and return from
   Command sub-mode by hitting Esc.

**Overwrite.**
   When prompted for a filename in the process of saving, you may give
   the name of a file which already exists. In this case,
   Professional Publisher asks you whether you wish to overwrite the
   existing file. If your answer is Y, the file will be overwritten;
   if N, you will be asked for another filename.

**Page.**
   The end product of all your efforts; but also its representation in
   the computer while you are working at it. When used in this sense,
   we always give it an upper-case initial to distinguish it from,
   say, a page of this manual.
   Even at the smallest dimensions selectable (400x480 pixels), a
   whole Page will not fit on the Screen (400x256 pixels); indeed with
   the standard A4 page (800x960 pixels) selected (See Dimension),
   you'll only have 2/15, or some 13 %, of the Page visible at any

time! The cameo is provided to help you visualise the Page in spite
of this limitation, with the close-up  as a further aid.
Unless you have chosen very large Page dimensions, you can have two
Pages in  the QL's  memory at the  same time.  Even  if you  plan a
single Page, the other  one may be useful as a  scratch pad to copy
to  and from  and to  try  out all  kinds of  variants.  To  toggle
between  the two  Pages, navigate  to the  Main Menu  and press  2,
followed by 1.  The new selection will be reflected in the strip at
the bottom of the screen.

**Palette.**
A set of  64 brushes (not colours, as in  the conventional palette)
to choose from for freehand drawing.

**Paper.**
The colour  of the background against  which text and  graphics are
put on  the Page.  If you  change the background colour,  this will
affect the result of all the following clear and scroll commands.
(1) When you  enter QLS text manually,  the paper is red,  but this
    changes to white when you close the Window.
(2) When you load text from a file, the default paper is white. You
    may toggle to  black when in Mode Text by  pressing Enter (this
    enters the  Command sub-mode) and then  P.  The change  will be
    reflected  in the  information window.   Press Esc,  unless you
    also want to change the ink.
(3) When drawing shapes  in Mode Line, you can change  the paper by
    pressing Enter  (this will  put you  in the  Control sub-mode),
    followed  by P.   You can  then cycle  through 7  paper colours
    (black, white and  five stipples for different  shades of grey)
    by means of the  space bar.  Your choice will be  echoed in the
    information window.

**Paragraph.**
Professional Publisher  assumes paragraphs of text  to be separated
by  blank lines.   The only  occasion where  this is  meaningful is
justification of text either entered  manually (QLS only) or loaded
from a file, because special treatment may be reserved for the last
line of a paragraph.  See Last line.

**Pass.**
The number of times the same action  is performed on a file or part
of it.
(1) When  printing, you  will be  led to  a menu  by which  you can
    specify  between 1  and  5 printer  passes.   More passes  take
    longer, but they make for a darker picture (important when your
    printer ribbon has been used a  lot and you don't want to throw
    it away just yet).

(2) Some  of the  tricks  in connection  with  loaded pictures  are
    performed in two passes.

**Paste.**
The action  of copying a rectangle  that has been cut  from scratch
memory in a  desired area on a  Page (it need not be  the same Page
from which it has been cut).   The same rectangle may be pasted any
number of  times in  different places,  because the  scratch memory
will not  be overwritten until the  next cut.  Whatever was  on the
Page in  the area pasted  over, however,  will be lost,  unless the
FIRST key  pressed after pasting is  Esc (this will undo  the paste
but keep the scratch memory intact).
To paste whatever Window or picture was most recently cut: Navigate
to Mode  Text and move  the cursor to where  you want the  top left
corner  of the  paste to  go. Then  press F4,  followed by  3.  (If
nothing happens  besides a bleep,  it means  that the Paste  is too

large for  the Screen.   Relocate the Window  towards the  top left
corner  of  the  Screen,  or re-cut  to  smaller  dimensions.)  For
repeated pasting  use the cursor  keys and  press 3 again.   If the
area to  be pasted on is  not on the  Screen (or even on  the other
Page), navigate to the  Main Menu and perform a change  of Page (if
necessary) and an Edit Page (Edit).

**PGX, PGY**
See Co-ordinates.

**Photograph.**
The easiest way to put a photograph  on a printed Page is to define
an empty  Window in the  appropriate place.  After  printing, mount
the  photograph and  photocopy  the result.  For  a more  high-tech
alternative see Digitiser.

**Picture.**
A graphic screen (up to 512x256  pixels) or part screen that can be
loaded from a file, subjected to various tricks and pasted onto the
Page.
The picture may be originally  in four-colour or eight-colour mode,
but it will be  reproduced in black and white (and  shades of grey;
see Grey-scale conversion).

**Pixel.**
An individual dot  on the screen or  on a printed page  that can be
accessed  individually  by a  computer  program.   The word  is  an
abbreviation of 'pic(ture)s el(ement).'

**Planning.**
Desktop publishing  doesn't mean that  the computer will  plan your
page.  It is  usually wise to do some general  layout planning with
pencil and paper before even starting Professional Publisher.

**Port.**
A connection by  which a computer can communicate  with the outside
world.  As used in Professional Publisher's printer driver, it is a
device name  that refers  to the  jack where  the printer  cable is
plugged in; but a filename  may be substituted if deferred printing
is desired.

**Portrait.**
One  of  the two  orientations  of  a  Page,  with the  long  edges
vertical.

**Print.**
The action  by which  your efforts  to compose  a Page  are finally
transferred to paper.  Be sure that your printer  is connected and
switched on and  that the printer driver fits it.   Navigate to the
Main menu and press 6.  You  will be taken through three menus, one
for Page  orientation, one for Page  width and one for  Page length
(see Interpolate).  After you  have made the appropriate selection,
printing will start.  The cameo will change colour in step with the
printout.  You may interrupt printing at any time by pressing Esc.

**Printer.**
An output  device that produces  hard copy under  computer control.
Just  about  any  printer  will work  together  with  the  QL,  but
Professional Publisher may need to  have its printer driver changed
to fit the printer,  or the grafiX printer driver may  need to have
the  parameters for  your printer  added to  it. See  also Machine
requirements.

**Printer Driver.**

Software which enables a given computer and a given printer to communicate. Professional Publisher includes a default printer driver which will work if your printer is Epson-compatible (to find out whether it is, consult the printer manual or try to print an EASEL file. If your printer deviates from standard, you must reconfigure and save the printer driver and then load the printer driver for every session in which you intend to use Professional Publisher for printing. This can be made automatic with the Configurator program.

For all printer-driver operations, navigate to the Main Menu and press 7. You can then change the linefeed parameter, the codes for line spacing and for the printer's graphics modes, the baud rate and the device name of the printer (the default is SER1; to change it, navigate to the Main Menu, press 7 and edit the default to SER1c, PARN, NETO_2 or whatever connection you have established for your printer; you may even give a filename for file printing); when satisfied, press Enter). You can also load and save a printer driver.

For an alternative printer driver see grafiX.

**Proportionality.**

All characters in the QLS take the same amount of space on the Page (it depends on the CSIZE selected). This means that an equal amount of space will be reserved for I and for W, as on most typewriters. The characters in an HDF, on the other hand, can be of different width, resulting in an effect much like typeset text. Character width is determined when an HDF is edited: When the menu whose first line reads '1. Store character' is shown, press A. Use the horizontal cursor keys or the mouse to move the thin vertical red line in the grid , which determines character width. It should normally be fairly close to the rightmost square that is filled in red. When satisfied, press Space (on the mouse: Set).

**QLS (short for QL set).**

A set of characters which fit onto an 8x6 pixel grid (the QL User manual refers to them as fonts, but this term also covers the very different HDFs in Professional Publisher).

As a default, 24 QLS are available for putting on the Page, either manually in Mode Text or by loading from a file; and the disks contain plenty more, identifiable by filenames ending in _qls. The file standard_qls contains the set that comes with the QL computer; the one we all love to hate.

Owing to a quirk of the QL, each QLS is composed of two subsets, one for the common characters (ASCII 31 - 127) and one for foreign characters and special symbols (ASCII 128 - 191). It is therefore necessary to assign two sets each to the draft style and the various highlight styles (unless you are satisfied with the defaults) before putting QLS characters on the Page. To change the set assignments when entering text manually (Mode Text): While the text Window is still open, press F4, followed by 9; then select either Draft or the highlight to which the assignments are to be made (number keys 1 to 6). Select the first subset you wish to assign to the selected style by pressing a letter key from A to L (or the right arrow key for a further selection, followed by a letter key from M to X). Repeat for the second subset. Your selections will be reflected in the information window.

To change the set assignments when loading text from a file: See Highlights.

You can also see the current choices for the different styles by navigating to Mode Text and pressing F4, followed by 3. For each style A to H, a to h, 1 to 8, and 8 upper-case special letters from the second subset will be shown on the screen. Pressing Esc will take you back to the calling menu.

You may also create and edit QLS's at will.

**Quadruple density.**
   See Condensed length/width.

**QUILL.**
   The word processing program that comes with the QL computer.  While
   the document files  it produces are not standard  ASCII files, they
   can still be loaded onto a Professional Publisher Page.  QUILL_DOC,
   QUILL_LIS.

**QUILL_DOC.**
   An option  available to you when  loading text from a  file. Use it
   when the  file has been produced  from QUILL with the  Save command
   (normally resulting in a filename ending in _doc).

**QUILL_LIS.**
   An option  available to you when  loading text from a  file. Use it
   when the file  has been produced from QUILL with  the Print command
   (normally resulting in a filename ending in _lis).

**Quit.**
   To  exit  from  a  program  so that  it  can  only  be  entered  by
   re-starting.
   To quit Professional Publisher, navigate  to the Main Menu; press 8
   and then 2; reply Y to the confirmation question.

**RAM.**
   That part of  a computer's memory whose contents can  be changed by
   software and are wiped clean when  the machine is switched off. The
   term  is an  abbreviation  of 'random-access  memory',  which is  a
   misnomer, because there are other  types of memory which also offer
   'random  access';  but  all  this  is  irrelevant  to  the  use  of
   Professional Publisher.

**RAM disk.**
   A facility by which a computer's RAM,  to the extent that it is not
   currently used for other purposes, can be addressed as if it were a
   device.   This can  be  useful for  intermediate  storage during  a
   session, because RAM-disk access is much faster than floppy-disk or
   (ugh!) microdrive access; but all  information on RAM disks will be
   lost when the machine is switched  off or reset, so that you should
   copy to  floppy disk whatever  you wish  to keep in  more permanent
   storage.
   The  basic  QL has  no  RAM-disk  facilities; but  your  disk-drive
   package  may  well  include  them.   In   that  case  you  can  use
   (typically) ram1_  to ram8_  much like any  other device  name when
   loading and saving files.

**Range.**
   Any QLS must contain either the  characters from ASCII 32 to 128 or
   from  ASCII 129  to 191.   When designing  a new  QLS (rather  than
   editing  an  existing one),  you  will  want  to make  the  choice:
   Navigate to  the Main Menu and  press 4.  Select a  code letter for
   the  new QLS  by pressing  a  letter key  from  A to  L (or,  after
   pressing the  right arrow  key, M to  X).  Then press  4 and  F for
   First range or S for Second range.

**Recolour.**
   One of the  tricks available when loading a  picture. As pictures,
   no   matter  whether  originally  produced   in  four-colour   or
   eight-colour  mode,  are always  loaded in  four-colour mode,
   recolouring tells  the QL which  new colour  to use for  all black,
   red, green and  white pixels respectively. The  result will affect
   grey-scale conversion.

To perform this trick, press Esc, followed by 7, while the picture
is on screen. Select an original colour with one of the number
keys 1 to 4, then use the space bar or the Enter key to cycle
through the choices for the target colour; then move on to a
different original colour and repeat. When satisfied, press 5.

**Reduce.**
One of the tricks that can be performed on a loaded picture. It
will compress the picture by one eighth of its size either
horizontally or vertically.
To invoke this trick, press Esc while the picture is on screen,
followed by 8 and either 1 (for horizontal reduction) or 2 (for
vertical reduction).

**Reflect.**
To reflect a given area as though a mirror were placed opposite it.
Reflecting may be performed on individual characters, all
characters of a QLS or HDF, the contents of a Window, or the whole
Page.
(1) When entering QLS text manually, you will be led to a menu
    whose first line is 'Enter text'. To reflect whatever is in
    the current Window, press 5.
(2) When entering HDF text in Mode Font, you can reflect the whole
    HDF for all characters yet to be typed by pressing Enter to go
    into the Control sub-mode, followed by R. Press Esc, move the
    cursor to the desired top left-hand corner of your text, press
    T and start entering text.
(3) When editing a QLS character, you can reflect the whole grid by
    moving the cursor off its edge into the menu and pressing 6.
(4) When editing an HDF character, you can similarly reflect the
    whole grid by moving the cursor off its right edge into the
    menu and pressing 7.
(5) To reflect the whole Page, navigate to the Main Menu and press
    2, followed by 3.
(6) To reflect a loaded picture, press Esc and then 3.

**Remove.**
To clear all characters of a QLS or HDF in working memory. This
will free the working memory that was required to hold it.
(1) To remove a QLS: Navigate to the Main Menu; press 4. Select
    the set to be removed by pressing the key with the appropriate
    letter as shown on the screen (if this is in the range M to X,
    you must first press the right arrow key). Then press 5.
(2) To remove an HDF: Navigate to the Main Menu; press 3. Select
    the HDF to be removed with the horizontal cursor keys; then
    press 4.

**Return.**
(1) An option offered in many menus. It is normally taken by
    pressing Esc and will take you back to the previous menu. This
    is important in navigation and in cases when you don't really
    want to select any of the other options offered.
(2) See Enter.

**Reverse.**
Another word for Reflect.

**Rotate.**
An action that can be performed on any HDF character in Mode Font
before it is put on the Page but only if the HDF has been defined
with equal width and height. Rotations of 90, 180 and 270 degrees
are possible.
To rotate a character: If you happen to be in the Type sub-mode,
press Esc to leave it. Enter the Control sub-mode by pressing

Enter, then press R.  You can then turn the character clockwise and anticlockwise  with the  right  and left  cursor key  respectively. Your choice will be echoed in  a small character-sized widow at the centre of the  screen and in the information window.  Press Esc and the space bar; then type.

**Ruler.**
An auxiliary pattern of lines that can be superimposed at the right and/or at the  bottom margin of the  Screen but will in  no case be copied onto  the Page.  The default  at start-up provides  for both rulers to  be shown (and thus  to reduce the size  of the effective Screen),  but this  default may  be changed  with the  Configurator program.   The divisions  on  the rulers  depend  on the  currently selected  units: either  cm (and,  if  feasible, tenths  of cm)  or inches (and, if feasible, sixths of inches).
To toggle the  rulers, the arrowhead cursor must be  visible on the Screen.  (If it is not, you are  in a sub-mode, which you must exit by pressing Esc.) Press F2, followed  by either 1 (for the vertical ruler) or 2 (for the horizontal ruler).

**Save.**
To copy a file from a designated area of working memory to external memory.   For saving,  Professional Publisher  will never  accept a filename that already  exists: the QL will burp, and  you are asked again to enter a filename.
A  save operation  will  not  be executed  if  the  target disk  is write-protected.   If you  get  an error  message  to this  effect, withdraw the disk, throw the  protection switch on it, re-insert it and re-issue the command.
If the filename you  entered is found to exist on  the target disk, you will be asked whether you wish to overwrite it.  If your answer is negative, you are prompted for another filename.
(1) To save a Page, navigate to the Main Menu and press 5, edit the
    default filename offered and press Enter.
(2) To save a QLS or HDF: See Edit.
(3) To save a set of guides: Navigate to the Main Menu and press 2,
    8 and 5. Edit the default filename offered and press Enter.

(4) To save a  set of Windows when loading characters  from a file:
    See Window.
(5) To save a printer driver: See Printer driver.

**Scratch memory.**
Part of a computer's  memory which is used during a  program run to hold provisional material,  which can later be  copied into working memory or  abandoned. Different areas  of scratch memory  are used for  (a) the  definition  of wraparound  Windows,  (b) cutting  and pasting, and (c) the undo function.

**Screen.**
(1) When used with a small initial  in this manual: the part of the
    monitor on which the output of your QL appears.
(2) When  used with  a capital  initial  in this  manual: the  area
    displayed in  the leftmost 88 %  of the screen (the  other 12 %
    are reserved  for the  information window).  It  represents the
    section of the  Page selected by moving the  shuttle across the
    cameo and pressing Enter.
    It  may  be  useful  for  you   to  know  that  with  Landscape
    orientation of a standard A4  Page (800x960 pixels), the Screen
    will show exactly half the width of the Page, i.e. the width of
    either of the two A5 pages you may be trying to compose.

**Scroll.**
To move the contents  of any area on the screen in  any of the four

main directions so that the line (usually of pixels) closest to one
edge disappears, the following lines shift by one unit in the
desired direction, and the line at the opposite end is cleared.
(1) To scroll the  contents of a Window opened for  manual QLS text
    entry: Press F4 while  the Window is open, then 7.  Each tap on
    one of  the cursor  keys will  scroll by  one pixel;  press the
    space bar or the Enter key when finished.
(2) When  typing text  in  a font,  the  Screen will  automatically
    scroll to  the left if the  character currently typed  would go
    wholly or partly beyond the  right-hand edge of the Screen (but
    not  of the  Page.  The  correct  continuation of  the Page  is
    scrolled in from  the right.  An analog principle  applies if a
    linefeed would  send the  cursor off the  bottom of  the Screen
    (but not of the Page).
(3) When you  are in the Command  sub-mode of any mode,  the cursor
    keys  will scroll  the Screen  by  8 pixels,  with the  correct
    continuation of the Page scrolled in from the appropriate side.
(4) When editing  an HDF,  you may  scroll the  grid by  moving the
    cursor off the grid  into the menu and pressing 9.  Each tap on
    one of the  cursor keys will scroll by one  square; white space
    without grid  lines will  be scrolled  in from  the appropriate
    side.  Press the space bar or  enter key when finished.  If you
    have a mouse, move the mouse  to the extreme line/column of the
    grid  which  represents the  direction  of  motion (go  to  the
    right-most column for moving right and press Select).
(5) To scroll a loaded picture: Press Esc, followed by 9.  Each tap
    on one of the cursor keys  will scroll the picture by 8 pixels.
    Press the space bar, Enter key or Esc key when finished.
If you  are in a mode  that doesn't permit scrolling  of the Screen
and wish to move  to a different part of the  Page: navigate to the
Main Menu  and re-select the Page  Section.  Then navigate  back to
the mode you came from.

**Section.**
   The part  of the Page  visible on the Screen  at any one  time.  To
   select it, navigate to the Main Menu and press 1.  Move the shuttle
   across the cameo with  the cursor keys as directed by  the panel on
   the screen (the close-up will be useful for fine tuning); press the
   space bar or Enter key when satisfied.

**Select.**
   The right-hand button on the QL mouse.

**Shape.**
   One of the geometric  figures that can be drawn in  Mode Line: arc,
   box, circle, ellipse, line.

**Shuttle.**
   The green rectangle  within the cameo which  designates the section
   of the Page currently selected as the Screen.

**Single density.**
   See Extended length/width.

**Slant.**
(1) The degree of obliqueness of  italic characters.  It can be set
    to any of 32 values (plus upright) for font characters.
(2) One of the tricks that can be performed on a loaded picture. It
    will distort all  vertical lines to a  45-degree inclination to
    the right or to the left.   Pixels which would be moved off the
    screen by this process reappear from the other side.
    To slant  a loaded picture, press  Esc while the picture  is on
    screen, then type 6, followed by  either 1 (for slanting to the
    right)  or 2  (to the  left).  The  trick is  performed in  two

passes.

**Software.**
    Those portions  of a computer  system that  cannot be kicked  - the
    intangible bits like programs.

**Space.**
    The empty character (ASCII  32) that is put on the  screen when the
    space bar is pressed.
    (1) For writing QLS text, the width of  a space is the same as that
        of  any other  character.   It may,  however,  be extended  for
        purposes of justification (see Kerning).
    (2) For  writing HDF  text, the  width of  a space  is specifically
        defined  for that  character (ASCII  32; see  Proportionality).
        For best  appearance of the text  (see Justification; Kerning),
        the width  of the space character  should not be defined  to be
        less than that of the widest other character.

**Space bar.**
    The key that stands out on the keyboard by its shape and absence of
    marking.  Its  most frequent use  in Professional Publisher  is the
    confirmation of menu  selections.  If you are using  a mouse, press
    the Select button instead of the space bar.

**Spacing.**
    The number of pixels between  any two successive HDF characters.
    (1) When entering  HDF text  manually, you  can adjust  the spacing
        from its default, which is 3 pixels, to any value between 1 and
        8.  If you are in the  Type sub-mode, leave it by pressing Esc.
        Enter the Control sub-mode by  pressing C.  Adjust the linefeed
        with the up  and down error keys and press  Esc when satisfied.
        Go to  the Type sub-mode by pressing space and start typing.
    (2) When loading HDF text from a file,  press 7 when you are in the
        menu whose first line is '1.  Put text on page'.  Select a line
        of the Table displayed by means  of the up and down cursor keys
        and  the  space  bar,  or  by means  of  the  mouse;  edit  the
        parameters shown in the column  headers for the HDF in question
        (see Highlights) and in particular the width of the linefeed in
        pixels, unless you  are satisfied with the default  value of 1.
        Repeat the  process in  all other lines  referring to  HDFs you
        wish to use.  When finished, press Esc.

**Square.**
    A unit for measuring distances on the screen: a square is 8  pixels
    wide and 8 pixels high.

**Standard length/width.**
    The 'regular' way of printing, in which an image of exactly nominal
    length and/or  width is  produced.  Also  known as  double density.
    See Condensed length/width; Extended length/width.

**Start-up.**
    When Professional  Publisher is loaded and  the keypresses required
    by the initial screen have been  made, the Main Menu will appear on
    the screen.  At that moment many user-adjustable parameters are set
    to their default values.  They are all explained under the relevant
    keywords;  you can  reset them  at your  discretion at  appropriate
    times.   It is  also possible  to have  Professional Publisher  use
    start-up parameters of your choice; see Configurator.

**Stipple.**
    A pattern consisting of a  regular repetition of colours (black and
    white only  for Professional Publisher),  making an area  appear as
    though it had a mixed colour.  See Grey-scale conversion.

**Storage medium.**
   A medium which  can hold external memory.  The  main storage medium
   used by  Professional Publisher  is the floppy  disk.  You  may use
   other storage media (hard disks;  RAM disks; yes, even microdrives)
   provided (a) you've got them and (b) you know what you are doing.

**Style.**
   (1) Another  word for  Boolean  function (so  used in  Professional
       Publisher menus).
   (2) The set of features composed of the QLS or HDF called draft and
       the QLS's or  HDFs that represent the  different highlights (so
       used in this manual).
   (3) What Professional Publisher gives your publications.

**Sub-mode.**
   Either of the two program states Control and Type, distinguished by
   the cursor  shape (C  and T respectively)  and reachable  from Mode
   Font and  (Control only) Mode Text,  Mode Draw, Mode Line  and Mode
   Fill.  Under mouse control there is no Control sub-mode; see Mouse.

**Subscript.**
   One of the highlights  that can vary the appearance of  a QLS or be
   selected for  representation by  a specific  HDF when  loading text
   from  a file.   It is  distinguished by  smaller characters  with a
   baseline normally lower than that of draft text.
   (1) To select the QLS you have defined as subscript for manual text
       entry, navigate to  Mode Text, open a Window  and choose CSIZE.
       Press F4, 5 and Esc in succession; then enter your text.
   (2) When loading  a QLS or HDF  file into Windows or  columns, text
       saved  as subscript  in a  QUILL file  will  always be  loaded
       correctly.  If  subscript characters from a  non-QUILL file are
       not  reproduced   correctly,  you  will  have   to  change  the
       highlights and reload.

**Superscript.**
   One of the highlights  that can vary the appearance of  a QLS or be
   selected for  representation by  a specific  HDF when  loading text
   from  a  file.   It  distinguished by  smaller  characters  with  a
   baseline higher  than that  of draft  text.  Superscripts  are used
   e.g. for exponents.

   (1) To select  the QLS you have  defined as superscript  for manual
       text entry,  navigate to  Mode Text, open  a Window  and choose
       CSIZE.   Press F4,  4 and  Esc in  succession; then  enter your
       text.
   (2) When loading  a QLS or HDF  file into Windows or  columns, text
       saved  as superscript  in a  QUILL file  will always  be loaded
       correctly.  If superscript characters from a non-QUILL file are
       not  reproduced   correctly,  you  will  have   to  change  the
       highlights and reload.

**Swapping Pages.**
   See Page.

**Symmetry.**
   One of  the tricks that can  be performed on a  loaded picture.  It
   consists in leaving  half the  picture unchanged  and substituting
   that half, in  reflected or inverted form, for the  other half. One
   application is the design of playing cards.
   To perform  the symmetry trick  on a  picture: Press Esc  while the
   picture is  on the  screen,  followed by 4.   Next press one  of the
   number keys 1 to 4 as directed by the menu to select the half to be
   retained.

**Tabulator.**
   A key  on the  QL keyboard that  produces a  non-printing character
   (ASCII 9) and will, in some  programs (e.g. QUILL), move the cursor
   to the next column designated by means of some subroutine as a 'tab
   stop'.
   The tab  character will be  interpreted correctly when  QUILL files
   are loaded into  Professional Publisher.  It will,  however, not be
   recognised when it occurs in other software; the appropriate number
   of spaces should be substituted for  each tab character in an ASCII
   file before it is loaded.

**Task.**
   Any program running on the QL.  If a SuperBASIC program is running,
   it is the  SuperBASIC interpreter, rather than  the actual program,
   that is considered to be the task.  See Multitasking.

**Template.**
   If certain parts of  a Page (e.g. the header of  a newsletter) must
   be used  again and  again, prepare  a Page  that contains  only the
   constant  parts and  save  it as  a template;  this  can be  loaded
   whenever needed, and work is only required on the variable parts.

**Text.**
   (1) Any succession of characters intended to go on the Page.
   (2) The mode in which you can  manually enter QLS characters on the
       Page.  In this mode the  information window shows the currently
       selected printing  style (draft or  one of the  highlights) and
       the two subsets currently associated with each style; 28 sample
       characters in the  current style, and the  colours selected for
       ink and paper.
       To reach Mode Text: See Navigation.

**Texture.**
   (1) A pattern formed by continuous  repetition of an HDF character.
       It may be used to fill any figure enclosed by black.
   (2) One of  the tricks that can  be performed on a  loaded picture.
       Depending on the  source picture, which may  have been produced
       in  4-colour  or 8-colour  mode,  the  trick selects  the  more
       suitable grey-scale conversion.
       To  select texture:  Press  Esc  while the  picture  is on  the
       screen,  followed by  4 for  mode-4  texture and  8 for  mode-8
       texture.

**Toggle.**
   The action of switching between two  menu items (which may be shown
   simultaneously  or one  after another)  by repeatedly  pressing the
   same key.  See Cycle.

**Trick.**
   One of several operations that may be performed on a loaded picture
   before  it is  cut. See  Invert, Magnification,  Recolour, Reduce,
   Reflect, Scrolling, Slant, Symmetry, Texture.

**TURBO.**
   Digital  Precision's record-breaking  compiler program,  which will
   speed up SuperBASIC programs by  factors of several dozen and makes
   them suitable for multitasking to boot.
   Most of Professional Publisher has been written using Turbo; we can
   assure you that it is sheer pleasure to use.

**Type.**
   The sub-mode of Mode  Font in which you can put  font characters on
   the Page.

To reach this  sub-mode: Navigate to Mode Font and  press the space
bar (or the Select key on the mouse).

**Underline.**
A feature that can be added to an HDF or QLS.
(1) To toggle  underlining of manually  entered QLS text,  press F4
    followed by 7 while the text Window is open.
(2) When loading an  HDF or QLS text file into  Windows or columns,
    text saved as underlined in a  QUILL file will always be loaded
    correctly.  If  underlining  from  a  non-QUILL  file  is  not
    reproduced correctly,  you will  have to change  the highlights
    and reload.
(3) Underlining may also  be selected for manual  HDF entry.  After
    navigating to Mode Font, enter the Control sub-mode by pressing
    Enter; then  press U.   This will cycle  through no,  grey, and
    black  underlining;   your  choice   will  be  echoed   in  the
    information window.  Leave the Control sub-mode with Esc, enter
    the Type sub-mode by hitting the space bar, and type.

**Undo.**
A feature by  which you may erase  recently executed unsatisfactory
attempts to  put something on  the Page.   It is comparable  to the
clear feature, but more powerful.
(1) Whenever you
    (1.1) navigate to  any of the  graphics modes (Mode  Draw, Mode
          Line or Mode Fill);
    (1.2) press any of the  function keys F1 to F5 while  in one of
          these modes  (except in  the Control submodes,  where the
          keys are disabled);
    (1.3) scroll the Screen in any of these modes;
    a  copy  of  the  current Screen  is  made  to  scratch  memory
    (overwriting what has  been there before, so that  you lose the
    chance to use the undo feature when you switch modes).
(2) Whenever  you press  U in  the Control  sub-mode of  a graphics
    mode, working  memory (the  current Screen) and  scratch memory
    are exchanged.  This in effect reconstitutes an earlier version
    of  the Screen;  you are  therefore advised  to press,  say, F3
    twice whenever  you have  reached an  acceptable phase  of your
    graphics  work and  embark on  a more  experimental phase.   To
    continue  with  your artwork,  leave  the  Control sub-mode  by
    pressing Esc.
(3) When defining a Window for manual  QLS entry, you may press Esc
    to cancel the most recently performed definition of a corner.
(4) A  paste operation  can be  undone by  pressing Esc  before any
    other key is pressed.

(5) When defining the shape of  a wraparound Window, you can always
    remove distortions of the edge whose end points are highlighted
    in  red in  reverse sequence  of their  creation by  repeatedly
    pressing Esc.

**Unit.**
Either cm or inches may  be selected for operations requiring input
or output in some unit of  linear measure.  The start-up default is
cm; to toggle  to inches navigate to  the Main Menu and  press 2, 8
and 6 in succession.

**Updates_doc.**
A  file   with  stop-press  information  on   any  improvements  to
Professional  Publisher.  Load  it  into  QUILL,  or  indeed  into
Professional Publisher  itself (QUILL_DOC  setting) and read  it or
make a hard copy to attach to your manual by using either program's
Print feature.

**Wildcard.**
   A sequence of characters that stands for any larger sequence containing it.  See Directory.

**Window.**
   (1) When used  with a lower-case initial  in this manual,  the word 'window' has the same meaning as in the QL User Manual.
   (2) When used with an upper-case  initial in this program, 'Window' refers to an area  of the Page into which text  or graphics are to be fitted.
      (2.1) To enter QLS text manually onto the Page: Navigate to the Main Menu,  select the appropriate Page  section with the cursor keys and  press the space bar or  Enter.  The next two presses of the space  bar will determine the top left and bottom  right corner of the  Window the text  will go into.
         You  can now  perform various  operations on  it and  get repeated chances  to change  its dimensions.   The Window will   be   closed (become   unavailable   for   further processing) if,  while the menu  headed 'Text' is  on the screen, you press 6 (this  will also clear the Window) or Esc (this will retain the text contained in the Window on the  Page).   You can  always  erase  it by  opening  and retaining a new, empty Window on top of it.

      (2.2) When loading QLS or HDF text  from a file, pressing 5 and 4 will take  you to a menu which offers  you the options, besides using  the already  defined columns,  of loading, defining or restoring Windows.  To load, press 2 and edit the  default  filename that  appears  on  the screen.  To restore  the Windows  most recently  used in  the current session, simply  press 4.   To define,  press 1.  You are first invited to  define Window number 1.   As usual, you move the  cursor with the cursor  keys, this time  on the cameo;  and two  touches  of the  space  bar will  define opposite  corners  of  the  Window. You  are  next  asked whether you want another Window.   If so, press the space bar again to repeat the  process for Window number 2, and so forth as long as you  wish. When you have defined your last Window,  press Esc.   A new menu  now gives  you the chance  to  change  the  shape  of  any  Window  from  the standard rectangle (press 2;  for the  further procedure see  Wraparound).  Once   you have  accepted or  declined this opportunity, you  may wish to save  your Windows for later re-use (press 3).

         After  some further  grilling  by Professional  Publisher (not Window-related),  your text  will finally go  on the Page, and you will be pleased  to see by the red lines on the cameo that the Windows are filled in exactly the same order as you defined them. Any excess text that overflows the last  Window will  not be loaded.   (You may  want to load it onto your next  Page, using the 'Text start' menu in the loading routine.
      (2.3) The area of a loaded  picture that is defined for cutting and pasting by  means of two touches of the  space bar is in many ways like a Window, without being actually called so.

**Word process.**
   (1) What you do when you use QUILL and its cousins.
   (2) A chance that you get if, after manual entry of QLS text into a Window, you  observe that some  characters should after  all be inserted,  deleted or  changed.   When the  menu headed  'Text'

appears and you  press 5, you are returned to  the Window (with
any previous  justification cancelled),  where you  may perform
cursor movement and editing.

**Word wrap.**
A feature  by which  a word of  text entered will  be moved  to the
beginning of the  next line if it  comes so late on a  line that it
will not fit on it in its entirety.
Word wrap  is normally  automatic for  all forms  of text  entry in
Professional Publisher.  It can,  however, be disabled when loading
text from a file (See Hyphenation).

**Working memory.**
The  part of  a computer's  memory  that is  used for  irreversible
operations during a program run.  See Scratch memory.

**Wraparound.**
A feature offered during the loading of QLS or HDF text from a file
after new Windows have been defined.   If you press 2 when the menu
whose first line reads '1.   Continue' appears, you may distort the
vertical edges  of any of the  (rectangular) Windows to  just about
any  shape. This  will be  useful  if text  is to  be written  all
around,  but not  into,  a  drawing or  picture;  also for  special
graphic  effects,  such  as  dropcaps, or  printing  a  poem  about
diamonds into a diamond-shaped Window.
The end  points of the  left-hand side of  Window number 1  will be
highlighted in red as well as marked with tiny squares on the cameo
to distinguish them as 'marked points'.  You have the usual freedom
of the cursor keys; and when you press the space bar, another point
will be marked on the cameo.  (However, if the cursor is beyond the
upper or  lower edge of  the Window, the QL  will burp and  no mark
will be set.)  The line connecting  the two adjacent  marked points
(one in the closest  pixel row not lower than the  mark, and one in
the closest pixel row below it;  at the start this will simply mean
the left edge of  the Window) will be deflected to  include the new
point. (If this  should result in a T shape,  the section furthest
from the  new mark will  be removed, but the  mark at its  end, now
isolated, at  its end  will be  preserved.)  Everything  is written
into scratch memory;  thus if you are not satisfied,  you can press
Esc as  many times as  necessary, and  each keypress will  undo one
edge distortion, working backwards through your definitions.
When  the left-hand  edge is  finished,  press Enter,  and the  red
highlight will move to the  right-hand edge. (The square marks are
only  shown  for  the  current edge.)  After  that  edge  has  been
re-shaped, another  Enter will  take you to  the left-hand  edge of
Window number 2.

When you press  Enter while the right-hand edge of  the last Window
is highlighted, you will be given  the option of starting the cycle
afresh (press  1) or declaring  yourself satisfied (press  2).  For
further action see Window.
Note: It is perfectly legal for a wraparound Window  to  intersect
itself.

**XOR.**
A Boolean function  whose input in this program  are two rectangles
of equal  size. Its output is  another rectangle of the  same size,
where each pixel is: in paper  colour if the corresponding pixel is
either in  ink colour in both  input figures or in  paper colour in
both input figures; and in ink colour if the corresponding pixel is
in ink  colour in one  input rectangle and  in paper colour  in the
other.  The result of XORing the / and \ characters is the letter X
with a hole at the cross-over point.
(1) To select  XOR for  drawing, navigate to  MODE DRAW,  enter the

Command sub-mode by pressing Enter, then type X and return from Command sub-mode by hitting Esc.

(2) To select  XOR for  merging font  characters, navigate  to Mode Font; press F4, followed by 4 and X, then do your merging.