

Not only computing – also art

JOHN LANSDOWN

Word processing 1

The primary contact many people have with computers nowadays is via word processors. These devices are appearing in offices of all sorts and sizes. So much so that, by the end of the decade, it seems unlikely that anyone will be using conventional typewriters at all.

Of course, word processing is enormously useful in minimising the problems of editing and altering documents. In addition, as many systems have facilities for checking the work, they can also help cure one of the most disturbing features of present-day office documents: bad spelling. (Some words, like 'super-seded', are so often spelt wrongly – with a 'c' in the middle rather than an 's' – that more of us would be right if we all agreed to use the wrong spelling!) However, word processing is already having some bad effects.

Firstly, it allows salesmen to send out large numbers of letters apparently written specifically to individuals but, in fact, simply a standard missive into which the computer slips some tailor-made items. This is fairly trivial defect – but one which displays a certain amount of dishonesty.

The second defect is slightly more serious. Apparently many managers and others who have secretaries using word processing, are now letting their documents run to vast numbers of drafts before finalising them. Knowing that editing is so easy, they simply go on making alterations in version after version until their literary aspirations are satisfied. It is not at all certain that this improves the clarity of the final product. What it does do is annoy the secretaries who have to make the changes, as well as waste fair quantities of paper in the process.

The situation seems very similar to that which sometimes happens when those familiar with programming in a batch environment first use interactive methods. Then, they abandon all the good habits they have learned previously, such as thinking out their program in detail, carefully checking it before entry and so on. They just type in the first thing that comes into their heads and get the machine itself to point out the errors – something it may or may not be good at. This defect of continuous drafting can only be cured by managerial dictum – although it would be substantially lessened by getting the document originators themselves to use the word processors (surely, the way to make best use of the facilities anyway?).

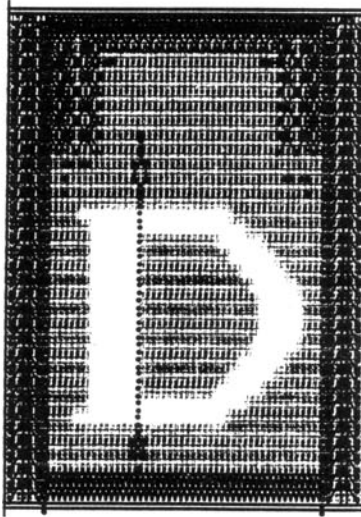
The third defect is that of right justification. Typewritten text is almost always left justified, that is, lined-up on the left-hand edge. Word processing allows it to be lined-up on the right-hand edge as well, thus setting the text into the block form we are used to seeing in books. However, printing type is justified in quite a different fashion to typescript. In the case of print, the lines are justified by good hyphenation and by carefully adjusting not only the spacing between the words, but also that between the letters themselves (and, in some cases, even by minutely modifying the actual letter shapes).

Word processors normally only adjust the spaces between words. This has the effect of making the inter-word gaps much wider and more

random than they should be. The result is aesthetically bad and interferes with the easy reading of the text.

Block justification seems to have arisen from the way the monks used to set out their manuscripts. It is quite unnecessary to attempt to duplicate the effect by typescript – so can't we all agree to abandon it?

The final defect is, to my mind, equally serious and is potentially more so. Most word processors are very good at setting out pages of text. They can include tables of numbers and other lists, all properly inset and paginated. However, they cannot deal with illustrations and diagrams so that, if these are to be included, space must be left for them to be pasted-in on completion of typing. This is a tedious process which interferes with the good



EBORAH

"The Bible was edited, during or shortly after the Exile, by a monotheistic and misogynous Guild of Prophets; they set themselves to delete all favorable reference to women who controlled men by their intuitive wisdom. Only one such case somehow escaped the censors: that of **DEBORAH**. She judged the Israelites when they were tributary to Jabin, King of Hazor, and issued oracles under a palm-tree (sacred to the Goddess Anatha) rather than under Jehovah's holy terebinth. **DEBORAH** means "bee", and "bee" was the honorary title of all oracular priestesses in Greater Greece and Syria."

from an address by Robert Graves
entitled:
Nine Hundred Iron Chariots
at MIT May 14th, 1963

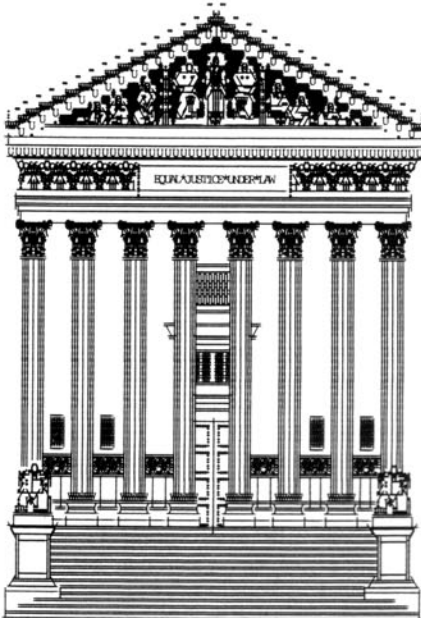
Figure 1

order of word processing and it appears that, as a result, fewer and fewer illustrations are being used in papers and reports.

In some professions, the law and accountancy for example, diagrams and illustrations have never been considered necessary (which probably explains why these disciplines are so opaque to most of us). For the rest, on the other hand, graphics are thought essential to minimise and improve explanation. Anything which stands in the way of good communication is a worry so we must encourage manufacturers to hurry forward with processors which deal equally fluently with both words and pictures. There is no intrinsic difficulty in the concept of graphic/word processing. If sufficient customers want such devices, they will be supplied.

Word processing 2

Ever since typewriters became commonly available, people have tried to use them to produce drawings. Indeed, an exhibition of Typewriter Art has been organised by the Polytechnic of Central London and is touring the country round about now - look out for it in your area.



THE SUPREME COURT OF THE UNITED STATES by John P. Eberhard
Figure 2

It will come as no surprise to those who have seen typewriter drawings that word processors can be similarly used, but with enormous advantages in editing and correction. An American friend, John Eberhard, who is the Executive Director of the Advisory Board on the Built Environ-

ment in Washington, has a Jacquard word processor which he uses in his spare time to produce pictures of all sorts. Figure 1 shows an 'illuminated' letter and Figure 2 the US Supreme Court done by this technique.

In common with Typewriter Art generally, these drawings are extremely complex. The word processor, however, allows some simplification of the process - the columns, with their elaborate capitals, are duplicated from a single creation.

Of course, the whole process is very much one of trial and error, but the ability of the word processor to store parts assists greatly. Is anyone else working in this area?

Painting

There are two basic ways of making pictures by computer. The first is to create a mathematical model of the scene to be depicted and then use the computer to present views of it. The modelling can be done in 2- or 3-D depending on the sort of thing one is drawing but, in either case, any transformations on it can be done in 3-D before being output in perspective. In this way, flat images of lettering, for instance, described only in the X-Y plane, can be rotated in the X-Z or Y-Z planes.

The second method is simply to use the machine as a drawing board or canvas and easel, and draw directly into it. This latter method has come to be known as 'painting', and the devices used, as 'paint systems'. There are a number of paint systems in existence, the most famous over here being the Logica Flair system in use by the BBC. The Royal College of Art has a system designed by Brian Reffin Smith and called 'Jackson' (after the action

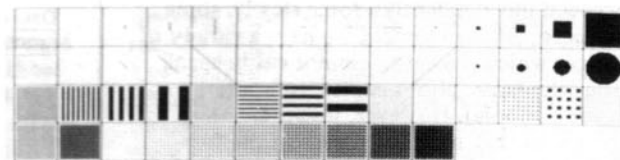
painter, Jackson Pollack, who also didn't use brushes to do his work).

An undergraduate student, John Hanson, working at the University of Bath with Phil Willis, has written a paint system for the ICL Perq. This, like the Perq itself, works in monochrome only but allows a wide range of tones and 'brushes' as well as many fonts for lettering. As with all paint systems, a menu of available items is displayed to the user (Figure 3) and these are picked up by pointing with a stylus and then used in a freehand way by sketching on a tablet. Items like circles and rectangles are also available as are straight lines between given points, so that drawing is considerably assisted. Pictures or picture components may be saved and retrieved in a few seconds. The components can then be moved around the screen in real time and be manipulated and assembled to make the desired picture. Phil is now experimenting with colour via an eight bit, 512 x 512 frame store. The addition of colour would make it a fully-fledged paint system.

Of course, the quality of output of a paint system is directly related to the drawing ability of the person using it but, as correction is so easy, anyone can make a creditable picture with such tools. Phil Willis's flower (Figure 4) shows some of the potential.



Figure 4



BLACK	WHITE	SKETCH	LINE
MOVE	COPY	PATTERN	PATT OFF
LINE H	LINE V	BOX	INVERT
LABEL	FONT	FILL	CIRCLE
SAVE	OLD	CLEAR	EXIT
n/a	n/a	n/a	n/a
UP	DOWN		

Figure 3