

## Word processors three years on

*Robert Clark*

*Robert Clark Translations, Cambridge, UK*

*The paper reviews the writer's experience since he started using a word processor in his freelance translation business, as described three years earlier in this conference series. \* It deals with the benefits and difficulties that can arise from using a dedicated WP as a translation aid, considers the spread of word processing on microcomputers, and concludes with a look ahead.*

In February 1980 I took delivery of a Diamond 5 word [processor. Until then my work had been typed from my taped dictation on an IBM golfball typewriter, and this had been my working method for many years.

Today I should like to tell you what sort of changes resulted from purchasing a word processor, how I feel I have benefited, and what I have learned. I hope to be able to pass on some of the knowledge I have gained and to explain how I view the differences between various machines and systems, especially between dedicated word processors and microcomputers used as word processors. Finally I intend to say how I should like to see word processors develop.

Briefly, and with apologies to those who have heard it before, I ought to outline what I do. After all, it is highly

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CLARKE, R.E. Machine aids: a small user's reaction. In: Machine aids for translators. Proceedings of the second 'Translating and the Computer' conference, London, 20 November 1980. London: Aslib, 1981, pp. 278-85.

relevant to the subject of my talk. I am a full-time freelance translator, translating into English from Swedish, German, Dutch and French. Most of the work is specialised - technical manuals, reports, articles, standards and so on. I dictate virtually all my work and employ a typist to type it on the word processor. I then review it on the screen - hardly ever on paper - and print the final version out for despatch to the client. Using this highly efficient method enables me to produce on average about 70,000 words a month.

Anyone contemplating introducing a word processor into a business should not expect miracles. There will be no immediate increase in output or turnover. The need for adjustment and familiarisation will more often than not mean a dramatic fall in output, and it takes a great deal of determination and will-power to break through this barrier, especially if you are not a technologically minded person. And if you dictate, as I do, the same applies to your typist.

All analogies are doomed from the outset, but for those of you who have never sat at a word processor keyboard and tried to make the machine do what you want, the analogy of learning to drive a car will give you some idea of how it feels. There you are in the driver's seat; you have been told and shown how to do it, but there is so much to remember, and you keep doing things in the wrong order. Once you have mastered it, you wonder why it seemed so hard.

Mastering a word processor is similar. You spend two and a half days on a basic training course, and when you get back to the office you are a raw beginner. Simple things like mixed line spacing or multiple indents seem difficult, concepts like character pitch and format pitch seem baffling, and advanced techniques like automatic pagination seem as out of reach as the moon. (It was a year before I got to grips with automatic pagination!)

If you have not used a word processor you may wonder why it should present problems. The answer is that you have to learn the art of man-machine communication. When you use a typewriter you could hardly claim to be communicating with it; you hit the keys and letters appear on the paper. Fundamentally a typewriter is equivalent to a set of rubber stamps which you apply to the paper in succession. It is a totally passive tool. Well, not totally; it rings a bell when you get near the right margin. But even before you can use a typewriter you have to give it certain instructions and put in some paper, which must be correctly positioned. The margins have to be set, you have to choose your line spacing, and possibly set some tabs. All these operations are relatively simple because you have only to look at the machine to get immediate visual confirmation from

the positions of mechanical knobs and levers, technology at a level we have grown up with. You can get visual confirmation from a well-designed word processor, but you have to learn how, and that is where man-machine communication comes in.

An example: often a gap has to be left in a translation for an illustration to be put in. With a typewriter you could do a few carriage returns and carry on. If, as is often the case, your translation is required to be page for page with the original, and you want to leave a space of a precise depth, it is not so easy. You need to measure your space and work out how many carriage returns will give the gap you need, then count as you do them. Because your paper is in the typewriter, you are to some extent working in the dark.

Most word processors provide a continuous indication of line count on the screen, in other words they tell you the number of the line on which the cursor is currently positioned. (By the way, I hope it is safe to assume you all know what a cursor is. Three years ago I would have had to explain!) Therefore, if you measure on your original the line count at which the gap begins and ends you can be sure of leaving an accurate gap, because the line count from the screen gives you confirmation - or feedback.

You may want to leave a gap of 3.5 inches starting at line 27, but if you don't happen to know that single-spaced typing is spaced at 6 lines per inch, the line count reading is not much help. I forget how I acquired that essential piece of knowledge, but it tells me that the gap should be 21 lines deep, so that the text should continue at line 48. Now I should like to give you a question to ruminate on until I return to the subject of line counts. In the above example, the text was single-spaced; say we want to leave a 3.5 inch gap in one-and-a-half spaced text, again starting at line 21. What will be the number of the line at which the text resumes?

So much for vertical measurement of text; let us consider horizontal measurement for a while. I am sure you are familiar with the terms '10-pitch' and '12-pitch', often referred to as 'Pica' and 'Elite' respectively. They refer of course to the number of typed characters per horizontal inch. Typical 10-pitch types are Courier 10 and of course Pica. Typical 12-pitch types are Letter Gothic and Elite. (I shall refrain from complicating matters with proportional spacing!)

Most word processors have on the screen a 'ruler line', on which you can read off the horizontal position of the cursor. This enables you to set the margins, tab stops and so on. Typically the ruler line is a row of dots with a number instead of every tenth dot, and some other symbol

such as a colon at the intervening fifth dots:

0.....1.....2.....3.....4..... etc.

Frequently a translator is required or simply prefers to follow the style and layout of a typed original. I certainly make every effort to do so, with the aim of delivering an English 'replica' of the foreign text. Clients generally appreciate this approach.

Example 1 is a translation; as far as layout is concerned it follows the original exactly. Doing this means that before typing on the word processor can start, you or your typist has to identify the typestyle (or at least the pitch), and determine the margins and other settings to be used.

I quickly found that rulers were inefficient for this, and I devised transparent overlay grids for 10, 12 and 15 characters per inch which, when placed over the typed text, immediately give horizontal and vertical co-ordinates for any character or space on the page. Part of a 12-pitch grid is shown in the Appendix.

However, I soon noticed something strange when using 12-pitch printwheels, and before describing it I ought to mention how the Diamond deals with different printwheels. Unless you tell it otherwise it assumes you are intending to use a 10-pitch printwheel, Courier 10 to be precise. You can tell it otherwise by putting an embedded command known as a 'printwheel code' at the beginning of the work, or indeed anywhere in the work if you are using different printwheels in the same text. Consider margin settings of left 10 and right 75, meaning that the left margin is one inch, and the right margin 7.5 inches from the left edge of the paper, a text width of 6.5 inches, in other words 65 characters. What I found strange was that, if I entered a 12-pitch printwheel code with those margin settings, the machine would allow me to exceed 65 characters; in fact it accepted 78 characters in a line - 20 per cent more. The designer had been clever and thoughtful enough to make the machine calculate how many 12-pitch characters would fit in the same space as 65 10-pitch characters. This means that the printwheel code only affects the printing pitch, not the pitch for the margin settings - known as the format pitch. You may object that it would have been cleverer to have made it affect both, but I have been glad that it does not. If you have a job with a mixture of typestyles (say mainly 10-pitch interspersed with 12-pitch) it is easier and better to keep the 10-pitch format settings throughout. What do you do if your entire job is in 12-pitch? Just enter a 12-pitch format code. Having done that, you would have to set margins of 12 and 90 instead of 10 and 75. By the way,

I occasionally use a 15-pitch typestyle for certain applications, and the same applies, *mutatis mutandis*, so instead of 10 and 75 you would have to set 15 and 112 or 113. All these settings give the same width of text, but different numbers of characters.

A typist who has trained and worked on a conventional electric typewriter, as mine had, may be unwilling to grapple with concepts like format pitch, and this was only one of the hurdles to be negotiated on the way to mastery of the machine.

You will therefore appreciate why I stress the importance of being highly motivated and having the will-power to get to grips with the machine and make it do what you want.

Whatever word processor you buy you will require a period of adjustment and familiarisation. There will never be a word processor at which you can sit and work without at some stage longing to throw the infuriating thing out of the window! After all, you don't expect to sit down at a piano and play properly without having gone through the agony of hours of lessons and practice. So if you want to get the full benefit from your word processor you must expect to work for it.

Have you worked out an answer to the line count problem? There is no single answer - it depends which word processor you are using. On the Diamond it makes no difference: the line count after the 3.5 inch gap would still be 48. Why? Because the text on the screen is always single-spaced, no matter how it is to be printed, and so it is screen lines that count. If the text is coded for one-and-a-half spacing, the line count reading goes up by 3 every 2 lines. If the text is coded for double-line spacing, the line count goes up by 2 every line. There is even half-line spacing (for fractions) and zero-line spacing (can you guess what that's for?).

I should like to make it plain that this is not a talk about the Diamond word processor; I am simply using that machine as an example, since it is the one I use. After hearing what I have said so far and am about to say, you may form the conclusion that the Diamond is very complex \ and makes great demands of an operator, but that would not be fair. Before passing judgement you would have to see exactly how other machines achieve the same result. You might then reach the opinion that I reached quite early on, and which I still hold, namely growing admiration for the anonymous designer or designers of this remarkable machine.

Every word processor worth considering for translators has to be able to produce work like that shown in Example 1. None will do it without being told how - man-machine communication again; the only channel of

A new way to regulate  
the temperature of  
moulding tools and  
similar equipment

Our new temperature regulator gives you:

Precise mould temperature - the temperature is measured near the moulding surface.  
The measurement controls the flow of the cooling/heating medium.

The benefits to you:

- troublefree continuous operation
- good quality
- close tolerances
- minimum cooling/heating time

**Example 1. A translation (following the same layout as the original)**

This is the situation on cooling with a restricted flow of cold water, for example:

The amount of coolant must be adjusted so that the moulding surface is not too cold when injection starts at the beginning of the cycle.

Immediately after injection the temperature of the mould surface rises sharply because of the heat from the molten plastic. The temperature then falls gradually in proportion to the ability of the reduced water flow to carry away the heat.

- Drawbacks:
1. There is no control of the temperature at the mould surface, and it could go to any value.
  2. The reduced flow of coolant does not remove the heat from the plastic at the maximum rate. The cooling time is far too long.
  3. If production stops because of a breakdown, the mould becomes so cold that it is hard to restart.

This is the situation on preheating with a medium at a constant temperature:

For heat to be conducted from the medium to the surface of the mould, there must be a temperature difference ( $UT$ ) between them. The smaller the value of  $UT$ , the slower the heating of the mould. When the tool is started, the temperature of the moulding surface is always a degree or two below the temperature of the medium.

In continuous production the temperature of the moulding surface will always be higher than that of the medium.

Cooling after injection is slow because  $AT$  is small.

**Example 1. (continued)**

THIS IS THE NEW SITUATION WITH OUR NEW MOULD TEMPERATURE REGULATOR:

When only cooling is needed

As soon as the temperature at the measuring point exceeds 31 °C the cooling medium is switched on, and can flow at its full flow rate in the cooling duct. The supply of coolant is cut off when the temperature has fallen to 31 °C.

The heat will be removed quickly because of the high flow rate.

If production stops, the mould cools slowly to ambient temperature.

When heating is required before starting, followed by cooling

At mould temperatures below 35 °C the mould heater circulation is operative. Circulation stops when the temperature at the sensor reaches 40 °C. When the temperature reaches 41 °C after Injection, the regulator opens to circulate the coolant.

Because a high AT and a high flow rate can be used for cooling, the mould is cooled quickly.

If production stops, mould heating starts automatically when the mould temperature falls below 39 °C.

Setting range: 0 to 190 °C

**Example 1. (continued)**



Fe-CuNi thermocouple, cable length 1 m

Art. no.	T mm
4 0 1 0 0	5 0
4 0 1 0 5	1 0 0
4 0 1 1 0	1 5 0

Nipple art. no. 40650

Art. no.	T mm
4 0 1 3 0	8 0
4 0 1 3 5	1 0 0
4 0 1 4 0	1 5 0

Nipple art. no. 40660

Art. no.	T mm	D mm
40160	20	4
40165	50	4
40170	100	6

Art. no.	T mm
40180	12
40185	20

Art. no.	A mm
40200	55
40210	55
40220	100
40230	110

Plug

Art. no. 40600 (male)
40610 (female)

**Example 1. (continued)**

communication between you and the machine is the keyboard, so inevitably you have to learn commands. If you want to underline a word you will have to press a key (or two) before you type it, then press another (or the same) key again afterwards. To set a tab stop you will either have to move the cursor to the required position on the ruler line and press the 'set tab' key (this is how most word processors do it) or, as on the Diamond, set your tab in terms of numbers: pressing the following keys:

SET TAB nnn,

where nnn is the tab position. At the level of simple commands, who is to say whether one method is superior to another?

Example 1, as we have seen, is a translation which follows exactly the layout of its original. (The latter was a four-page A4 leaflet, in other words an A3 sheet folded once.) Example 2 is another version of the same document. Whereas Example 1, apart from being reduced, shows the translation exactly as delivered to the client, Example 2 shows the various embedded commands or 'codes' that have to be entered to produce the layout. These codes can be hidden or revealed on the screen at will. This is one way in which a word processor can communicate with the operator; it has the advantage that the information is not there all the time cluttering up the screen, but only when the operator wants to see it.

I do not propose to go into detail about the codes, but would like to mention one point that has caused difficulty with operators. Look at the second page of Example 1. There is a space between the first line and the first indented paragraph. There is a different space between the two indented paragraphs. In typewriter terms, the first space is a double space, the second a one-and-a-half space. This distinction is frequently used by typists; all you have to do on a typewriter is turn the roller up or down a 'click'. But to achieve the same effect on a word processor is not so simple. On the Diamond there are two ways: either to use a code which moves the text up or down half a line, or to change line spacing for just one line. This is the technique I use, since it keeps the line count reading correct.

From what I have said so far you will realise that to succeed with a word processor requires motivation, intelligence and adaptability. The less 'dedicated' the system, the truer this is.

The past three years have seen an explosive growth in the number and power of microcomputers on the market. In 1980 they were comparatively rare and could not be considered for word processing. Now there are hundreds,

and there are 'word processing' packages for almost all of them. Recently I have begun to use a simple word processor on a BBC Model B microcomputer. It comes in the form of a 'chip' and is called 'Wordwise'. I have also used a software package called 'Perfect Writer'. In my view translators should think very carefully before buying such systems. On the one hand, the kind of adjustment and learning problems I have hinted at with a dedicated word processor are likely to be far greater, since man-machine communication is harder, and on the other, you may find unexpected limitations, such as the lack of one-and-a-half line spacing; or there may be insufficient safeguard against operator error, so that a single wrong keystroke could mean the loss of hours of work.

One fundamental difference with cheap programs like 'Wordwise' is that you enter the text in an unformatted mode and it is only formatted when you send it to the printer. Say you want a paragraph indented. You put in an embedded command before the paragraph in question, but it does not have any immediate effect. This would not be the case with a more advanced package and certainly not with a dedicated machine. There is a mode in which you can view the text as it will look on paper, but you cannot edit in that mode. This sort of limitation makes using a package like 'Wordwise' professionally very heavy going, a bit like rowing in treacle, and that is a sensation no-one wants to feel when they are trying to earn a living.

My impression of 'Perfect Writer' is that it is a very powerful package but still requires far more effort to master than a dedicated word processor. It has the attractive feature of split-screen working, but even this package has the drawback that formatting takes place separately from input and editing. I would not like to have to produce work like Example 1 on either of these systems, and I think they are typical of the word processing software being offered for micros today.

I regard it as essential that format commands should take immediate effect. If a paragraph is to be indented, I do not want to wait until it is on paper to see it indented, I want it to appear correctly formatted on the screen. If I change a margin setting I want its effect to show on the screen. If I enter a table with tab settings and subsequently change a tab, I want the column to move to the new position immediately.

Even on some 'leading' makes of word processor you have to give a special command to make the text reformat after amendments. This should not be necessary; systems should be designed to implement format changes without having to be told to. The Diamond does, and this is one reason why I prefer it.

(PW440)(FormatPitch12)(+Leftmar010)(+Rightmar094)(V1oC008)

(+Rightmar032)(LS4)A new ray to regulate  
the temperature of  
moulding tools and  
similar equipment(+Rightmar094)c  
(V1oC042)

(LS2)Our new temperature regulator gives you:c  
(+Tab038)(Indt1)c  
Precise mould temperature - the temperature is measured near the moulding surface.  
The measurement controls the flow of the cooling/heating  
Medium.c

c  
(LS3)The benefits to you:c  
- troublefree continuous operatlonc  
- good qualityc  
- close tolerancesc  
- minimum cooling/heating timec  
(LS2)(-ATabs)f

**Example 2. The translation in Example 1, showing the layout codes embedded in the text**

(V1oC006)	
This is the situation on (+U1)cooling(-U1) with a restricted flow of cold water, for exam (+Tab042)(Indt1)c t	The amount of coolant must be adjusted so that the the moulding surface is not too cold when Injection starts at the beginning of the cycle.(LS3)c
(LS2)t	Immediately after injection the temperature of the mould surface rises sharply because of the heat from the molten plastic. The temperature then falls gradually in proportion to the ability of the reduced water flow to carry away the heat.c
(+Tab053)(+Tab056)(Indt3)c t	Drawbacks:tl.tThere is no control of the tempera- ure at the mould surface, and it could go to any value.(LS3)c
(LS2)t	t 2.tThe reduced flow of coolant does not remove the heat from the plastic at the maximum rate. The cooling time is for too long.(LS3)c
(LS2)t	t 3.tIf production stops because of a break-down, the mould becomes so cold that 1t 1s hard to restart.c
(Indt0)c (V1oC036)	
This is the situation on (+U1)preheating(-U1) with a medium at a constant temperature:c c (Indt1)t	For heat to be conducted from the medium to the surface of the mould, there must be a temperature difference ((PW660) <sub>Δ(ε<sub>n</sub><sup>440</sup>)T) between them. The smaller of (PW660)<sub>Δ(ε<sub>n</sub><sup>440</sup>)T, the slower the heating of the mould, the tool is started, the the temperature of the moulding surface is always a degree or two below the temperature of the medium.(LS3)c</sub></sub>
(LS2)t	In continuous production the temperature of the moulding surface will always be higher than that of the medium.(LS3)c
(LS2)t f	Cooling after injection is slow because (PW660) <sub>Δ(ε<sub>n</sub><sup>440</sup>)T f</sub>

**Example 2. (continued)**

(V1oC006)	
(+U1)THIS IS THE NEW SITUATION WITH OUR NEW MOULD TEMPERATURE REGULATOR(-U1):c	
c	
t	(+U1)When only cooling is needed(-U1)(LS3)c
(LS2)t	As soon as the temperature at the measuring point exceeds 31 °C the cooling medium is switched on, and can flow at its full flow rate in the cooling duct. The supply of coolant is cut off when the temperature has fallen to 31 °C.(LS3)c
(LS2)t	The heat will be removed quickly because of the high flow rate(LS3).c
(LS2)t	If production stops, the mould cools slowly to ambient temperature.c
(V1oC030)	
t	(+U1)When heating is required before starting, followed by cooling(-U1)(LS3)c
(LS2)t	At mould temperatures below 39 °C the mould heater circulation 1s operative. Circulation stops when the temperature at the sensor reaches 40 °C. When the temperature reaches 41 °C after injection, the regulator opens to circulate the coolant.(LS3)c
(LS2)t	Because a high (PW660) $\Delta(\varepsilon_{-1}^{40})T$ and a high flow rate can I for cooling, the mould is cooled quickly.(LS3)c
(LS2)t	If production stops, mould heating starts automatically when the mould temperature falls below 39 °C.c
c	Setting range: 0 to 190 °C
f	

**Example 2. (continued)**

(V1oC004)					
(+U1)Fe-CuN1 thermocouple(-U1), cable length 1 mc					
(-ATabs) (+Leftmar035)c					
(+ RTab052) (+Tab065) (V1oC009)					
	Art. no.		T mm(LS3)c		
	(LS2)40100t		50c		
	40105t		100c		
	40110t		150c		
	(V1oC018)				
	t		t		Nipple art. no. 40650c
	(V1oC024)				
	Art. no.		T mm(LS3)c		
	(LS2)40130t		80c		
	40135t		100c		
	40140t		150c		
	(V1oC039)				
	t		t		Nipple art. no. 40660c
	(+Leftmar010)(V1oC050)				
(LS3)(-ATabs) (+RTab025)(+RTab033) (+Tab055) (+RTab072) c					
Art. no.	T mm	D mmt	Art. no.	T mmc	
(LS2)40160t	20t	4t	40180t	12c	
40165t	50t	4t	40185t	20c	
40170t	100t	6c			
(-ATabs) (+Tab018) (+RTab035) (V1oC062)					
t	Art. no.	A mm(LS3)c			
(LS2)t	40200t	55(LOC066)	Plugc		
t	40210t	55c			
t	40220t	100(LOC066)	Art. no. 40600 (male)c		
t	40230t	110(LOC075)	40610 (female)c		
f					

Example 2. (continued)

If you are a professional translator and are considering investing in a word processor, do not make cost your primary consideration. If you can't afford a proper system, don't be tempted to make do with half-measures. It could prove more costly in the long run. Time is money, and the time you spend grappling with an unsuitable system trying to make it do what you want could have gone towards a more expensive but more manageable system. Don't rush into buying a system unless you are sure you will be able to communicate with it easily.

And finally, what of the future? How will word processors look in three years' time? I certainly hope there will be better screens, more standardisation of commands, greater compatibility. Transmission of text from one system to another will be commonplace (I have recently delivered some 30,000 words to a client over the telephone, direct from the Diamond to a large word processing system of another make.) Soon I am sure we shall see systems with voice input of commands: 'delete' 'para' 'yes' to delete from the cursor to the end of the paragraph, for example. Further in the future is direct voice input of text. All these prospects raise new problems of communication between the operator and the machine, and I should like to conclude with an appeal to designers of word processors to take advice not only from the experts in ergonomics and applied psychology, but also from the most important people of all - the users.

#### AUTHOR

Robert Clark, Robert Clark Translations, 52 Burleigh Street,  
Cambridge CB1 2DJ, UK. (Now: 22 Godesdone Road,  
Cambridge CB5 8HR, UK.)



1.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-
5.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-
10.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-
15.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-
20.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-
25.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-
30.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-
35.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-
40.....1.....2.....3.....4.....5	-	-	-	-	-	-	-	-	-

Appendix. Part of an overlay grid for 12-pitch