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WORD PROCESSING: A GUIDE FOR THE PERPLEXED

For and Against

Of the many appliances that ingenuity has devised to ease the labor of writing, the word-processing computer is by far the worst, except for all the others. The computer's electronic rhythms confound the rhythms of thought. Its electronic screen mesmerizes its user into a state of dazed vacancy. The computer strains visual acuity and personal relations. It tempts careful writers into garrulous style and deformed structure. Used carelessly, it can destroy a year's work as irreparably as fire or flood.

Nothing could induce me to work without one.

The claims made for the computer by its evangelists are, in the main, sufficiently true for me to endorse the bulk of them without comment. For much of the writing that readers of this magazine are likely to do, the computer serves as an unparalleled labor-saving device. For journalism, business letters, translations, reports, recommendations, notes on research, word processing speeds the work and relieves its frustrations. Anyone who has ever retyped a letter five times, until the angry outbursts of the first draft yield to the conciliatory murmurs of the last, will find that the effort of changing one's mind is much easier on the computer screen than it is on paper. Anyone who has ever cut-and-pasted revisions into an already blotched and disjointed typescript will discover the pleasure of taking a warm bath while the computer, all unattended, prints out reams of flawless pages.

The temptations offered by the computer are real, but they are most dangerous when the machine becomes an idol, or when it gratifies some intellectual version of gluttony or vanity or sloth. The more fluent a writer, the more dangerous is the machine. The computer makes small-scale revision so painless that large-scale rewriting begins to seem an outmoded waste of time. A writer who used to type out a paragraph again and again, always making changes in rhythm and proportion, always seeking the more just and exact word, can easily fall prey to the luxury of revising without rewriting. A finished paragraph can be made to appear on screen in a fraction of the time needed to create a paragraph with pen and ink. But the nearly effortless computerized paragraph all too often lacks the logic and authority of the paragraph produced by heavy labor at the typewriter or yellow pad. Writing tends to achieve authority when the author knows five times more than he says. With a computer it is all too easy for an author to put down everything he knows, and more. (The editor of a British literary weekly tells me his contributors' prose collapses immediately after the purchase of a computer, but that it recovers after about a year. A lot of bad prose can be written in a year.)

A computerized paragraph is deformed on a small scale. A computerized chapter or essay is all too often disproportioned monstrously. A writer who works on paper can easily sense when one section of his work is too long or too detailed in relation to the whole. It is a simple and intuitive act to compare the prose on one sheet of paper to the prose on another. But to compare the prose on the computer screen to the prose on a sheet of paper is surprisingly difficult. The mind cannot make an easy transition from one medium to another. The screen, furthermore, seizes attention, not only because it glows with its own light, but also because its image is subliminally unstable, and the eye seeks activity. Anything that appears on screen seems more important, more deserving of care, than anything abandoned to the inert immobility of paper and ink. For a scientist or mathematician who seldom needs to compare the image on the computer screen with a page of printed text, this presents no difficulty. But for a writer who wants to compare one draft to another, or for a historian or critic who must give the same close attention to printed books as to his own working drafts, the effect can be disastrous.

The three-hundred-word capacity of the standard computer screen will act as an intolerable constraint on anyone who writes extended narratives or complex arguments, but it does serve the purposes of some of the most characteristic writing of our time. Every age gets the technology that suits its frame of mind. The camera and the phonograph were invented to serve an age that valued exact realism in the arts. So the word processor was invented to serve an age that values an art of minimalism and transience. It scarcely matters whether the narcissistic disconnected vignettes that make up the fiction of Renata Adler or the self-absorbed fragmented reveries that make up the poetry of John Ashbery were in fact written at a computer; the computer is the proper medium for the age in which they were composed. The computer is probably *not* the proper medium on which to compose writing intended to affect or understand the world around it. Such writing may well continue to be drafted with typewriter or pencil and entered into a computer only for the later stages of revision. And for those late stages of the act of writing, the computer is an almost unequivocal blessing.

It is even more of a blessing to the writer who has never been fluent in any medium. For the blocked or the hesitant, the advent of the computer is like the advent of spring: the frozen river surges, the hard earth flowers. Writers who once labored hours to produce one cramped paragraph now pour forth luxuriant pages. Academics who once wrote English as if they were translating some minor German idealist now call spades spades. Their writing may not be done well, but they are surprised to find themselves doing it at all. The same effect can be dangerous in government and industry, where secretiveness is thought desirable. Executives

who reveal nothing to colleagues or committees reveal all to the receptive screens of their computers. But where free exchange of information is an imperative, the computer provides information to exchange. I know an academic philosopher who, when he worked with pen and paper, wrote little more than a page or two every year. He told his colleagues he wrote slowly because he wanted everything that appeared under his name to be unquestionably true. Last year his colleagues persuaded him to buy a computer. He has since sent off seven essays to philosophical journals. He offers no opinion as to their veracity.

Hardware and Software

The written word takes on new habits when the computer is its subject, just as it does when the computer is its medium. To write effectively about computers requires both writer and reader to accept some minor dislocations in style. In the world of book and magazine publishing, for example, publishers' names are common nouns like Penguin or proper nouns like Oxford. In the world of computers, publishers' names tend to be arbitrary combinations of familiar or unfamiliar syllables, often with a capital in the middle, as in Quicksoft or XyQuest. In the world of print, careful prose tends to be written in the first or third person. In the computer world, prose is by necessity written in the second person, because to write about computers is to write about what you do at the keyboard and about what the computer tells you in response. I hope this paragraph may ease the shocks some readers may feel in the paragraphs that follow.

Until a few years ago, writers bought Kaypro computers or none at all. Today there is no reason to do likewise. Word-processing programs are no longer written for the Kaypro and related machines, and the programs still available are clumsy and limited by comparison with the many available for the IBM. (I shall have some advice later for writers who still use a Kaypro and like it.) Programs written for the Apple computer are capable of handling grade-school papers, business letters, and little else. The computer you should most diligently avoid, however, is the Apple Macintosh. The ads for this cute little machine emphasize that it is easy to use. True—and that is because it can do so little, and does it at quarter-speed. More than a year after its introduction, only two word-processing programs have been written for the Macintosh. One, Macwrite, is limited to documents nine pages long. The other, Microsoft Word, is adapted from a version written for the IBM that I will be railing against shortly. The Macintosh version has all the faults of the original, and adds many new and innovative defects of its own. "Dedicated" word processors—computers that do word processing and nothing else—are either too limited (like the Wang) or too expensive (like the CPT) for most writers to consider.

Programs written for one computer cannot be plugged into another; different versions of the program must be written for each machine. A computer communicates with a program through a characteristic "operating system" that might be thought of as the computer's native language. You tell a computer what to do by issuing laconic commands like "copy" or "sort," much as you tell a dog what to do by issuing commands like "fetch" or "stay." The Kaypro understands a primitive dialect of an operating system called CP/M. Apple computers have a language all their own. The IBM thinks in PC-DOS, a sophisticated dialect of a widespread language family called MS-DOS.

The only computer a writer should consider buying today is one that speaks a dialect of MS-DOS, preferably the IBM Personal Computer, or, as a second choice, one of the "IBM clones" like the Compaq. The IBM is by no means the best designed or the most advanced personal computer to be found. But it has become the industry's standard, and every word-processing program worth using is designed to work at its best in an IBM. The better IBM clones can use these programs also, but they behave oddly when they do. Words that appear underlined on screen when used with an IBM may appear in light gray, without the underline, on a clone. The worst disadvantage of both the IBM and its clones—and of almost every other personal computer—is the whirring internal fan that protects the machine from its own electronic heat. Apple computers, in contrast, cool themselves through cleverly arrayed ventilation slots, although future Apple models will reportedly need fans also. Silent cooling systems exist; there is no good reason why personal computers should not take advantage of them.

The most sensible purchase at the moment (mid-1985) is the basic IBM Personal Computer, with two disk drives (devices that read data from "floppy" magnetic disks and record data onto them, in the same way a tape deck uses cassette tapes), and equipped for use with a monochrome (green on black or amber on black) screen. If IBM has discontinued the original PC by the time this Comment appears, then buy the two-disk-drive version of the slightly more advanced model called the PC XT. It would be wise not even to consider any more recent IBM model until at least the middle of next year, when the inevitable defects of any new computer will presumably have been corrected.

For most purposes, the amount of electronic memory you will need to have installed in the machine can be IBM's standard 256,000 characters (256K). This, with the best word-processing programs, will allow you to edit a piece of work as long as a hundred pages without major delays. (In the computer world, any piece of written matter is called a "document"; I don't much care for the word, but I can't think of anything better.) You can easily add more memory later if you find you need it. Instead of one of

the floppy-disk drives, you may want a "hard disk," which can store the equivalent of a few dozen floppies. A hard disk remains fixed in the computer and can be a great convenience if you expect to work on many different projects at once—you won't have to keep shuffling floppy disks in and out of the machine. But a hard disk adds around a thousand dollars to the price, requires a noisier fan, and, if it ever fails, can take with it half a dozen book manuscripts. You can protect yourself from a hard-disk failure if you copy the contents of the hard disk onto floppies once a day; but you probably won't.

The keyboard supplied with the IBM is much reviled. The left-hand shift key is in the wrong place, and the return (or "Enter") key is too small. But you will only be wasting money if you buy one of the substitute keyboards touted by computer salesmen. For all its faults, the IBM keyboard demonstrably permits faster and more accurate typing than its rivals. On the other hand, the IBM monochrome screen is seldom reviled but deserves to be. When you try to delete words from an IBM screen, they remain visible for a few seconds as a distracting ghost image. IBM does not require you to buy its screen when you buy its computer. Get one of the better and less expensive monochrome screens made by Amdek, Quadram, Princeton, or Taxan. Price is as good a reason as any for preferring one manufacturer to another. Whether you choose an amber or a green screen is entirely a matter of taste. European research favors amber as more restful. American research is inconclusive.

Printers for personal computers range in price from a few hundred to a few thousand dollars. A clear recommendation anywhere within that range is impossible. Many publishers now refuse to work with the fuzzy computerized text produced by "dot-matrix" printers. Such machines can work at tremendous speed, but a "letter-quality," or typewriter-like, printer makes for better relations between author and editor. Before buying a printer, decide whether you can live with the noise it makes and study a sample of its output. Some machines use an acute accent in place of an apostrophe, which makes single quotation marks look odd. Among the better letter-quality printers, those sold by Amdek and (by special order) Fujitsu can print the special characters of most western languages as well as all the characters on an American keyboard—so façades look the way they should and Hölderlin reads correctly. NEC printers will do the same when used with a special fifteen-dollar multilingual print element (the equivalent of the golf ball on an IBM Selectric). Diablo, Qume, and most other printers allow the use of foreign characters, but they either substitute quotation marks for umlauts and commas for cedillas or require you to use print elements that lack some standard American characters. Except for the new three-thousand-dollar laser printers—which are essentially xerox machines that construct an image of

a page according to instructions sent by a computer rather than reproduce an existing image—all printers sound more or less like an earthquake in hell. Amdek and Fujitsu printers make less of a racket than their rivals do, and NEC claims to be working on the problem. IBM has a new printer called the Quietwriter. It isn't.

A printer that makes noise like a mad elephant and moves at the speed of a sane one can at least be left to do its loud sluggish work while you amuse yourself elsewhere. A bad word-processing program is a disaster that constantly afflicts you when you try to write. The choice of a program is the most important choice a writer makes when setting up a computer system, and most writers make the choice with little to advise them except word of mouth.

Word of mouth is always fervent in its preferences and usually wrong. If you ask someone who is satisfied with his computer, he will recommend whatever program he happens to be using and will insist that you have no need for all the conveniences it lacks. If you ask someone who is dissatisfied with his program (the proper response to most of them), he will recommend a program that is in fact even worse but is rumored to be the darling of the experts. If you ask the salesman in a computer store, he will explain that there are only two programs worth considering: the one with the biggest markup, and the one whose publisher pays a bonus to every salesman who unloads twenty-five copies by the end of the month. If you ask someone who knows all about large "mainframe" computers, he will tell you not to get a word-processing program at all, but to imitate mainframe procedures and get one program for editing your text and another for giving it a format to be used by a printer. (In the same way, a railwayman, convinced that the locomotive should be separate from the baggage cars, might urge you to drive a tractor-trailer rather than a BMW.) If, like many naive academic department chairmen, you hire an expensive consultant, he will take careful notes on your needs, disappear for two weeks to cogitate over the unique circumstances of your problem, and then recommend exactly the same ham-fisted program he recommends to everyone else. If you pursue your own research in the computer magazines, you will learn that nothing ever goes wrong with a computer program, and that every program is wonderful in its own way, especially those whose publishers have large advertising budgets. If you come across one of the infrequent reviews that compares one program to another, you may find the basis of comparison somewhat puzzling. When *PC Magazine* published an omnibus review of nineteen programs, it compared their ability to correct, format, and print a slightly defective text of the Gettysburg Address. The results were invaluable to everyone who never writes anything longer than two hundred words. (An exception to the dismal norm of word-

processing reviewers is the ever-reliable Charles Spezzano in the *Whole Earth Review*.)

Some two or three hundred word-processing programs have been written for the IBM personal computer, and a few hundred more for other families of machines. Most writers will have little use for all but a very few. Some programs are designed primarily for writing business letters of a page or two, or for technical and scientific reports. Some require you to perform complicated arabesques before you can insert a word into the middle of a sentence. Some are unable to hold more than a few thousand words in a "file" of data; with these programs, if you want to move back and forth between the beginning and end of a long chapter, you must go to almost as much trouble as you would if you kept the end of the chapter on your desk and the beginning in the house next door. Some programs are not software but "vaporware"—programs ceremoniously announced by their publishers, advertised by dealers at bargain prices, volubly recommended in computer magazines, but entirely unavailable because they are as yet half-finished and may never be finished at all.

Some programs do not require you to type out commands when you want to tell the computer what to do, but instead offer "menus" of pre-determined courses of action from which you select the one you prefer. When presented with a choice between two programs, one "command-driven," the other "menu-driven," novices tend to choose the menu-driven because it promises to take them by the hand through unfamiliar territory. In fact, a menu-driven program is the worst possible kind for a writer to buy. It not only takes you by the hand through alien landscapes, it takes you by the hand every time you want to cross the street. Instead of allowing simple operations to become habitual and automatic, it re-peatedly demands that you stop thinking about what you are writing and start making choices among lists of mostly irrelevant alternatives before you can do anything at all. If you still think you prefer a menu-driven program's safety (often illusory) to a command-driven program's free-dom (often safeguarded), consider what it would be like to use a menu-driven kitchen. Before you could reheat a pot of coffee you left on the stove after breakfast, you would have to make a selection from the Main Kitchen Menu, which would look like this:

DO YOU WANT TO:

1. PREPARE FOOD? (PRESS P)

2. COOK FOOD? (PRESS C)

3. WASH DISHES AND EXIT? (PRESS W)

4. GO TO A DIFFERENT ROOM INSTEAD? (PRESS THE ESCAPE KEY)

After pressing C you would then wait a few moments until the Cooking Menu appeared:

DO YOU WANT TO COOK WITH:

1. THE OVEN? (PRESS O—LETTER NOT NUMBER)   ·
2. THE RANGE? (PRESS R)
3. THE TOASTER? (PRESS T)
4. AN UNDEFINED AUXILIARY UTENSIL? (PRESS U)

After pressing R, you would again wait a few moments for the Range Menu to appear:

RANGE CURRENTLY SET FOR: RR (RIGHT REAR BURNER)

TO RESET, PRESS LR, LF, OR RF

With a command-driven kitchen, on the other hand, you would walk to the stove and turn on the burner.

Menu-driven programs do have their uses, however. Corporations need to have them so that temporary secretaries will be able to turn out routine letters even when they have no previous experience with the program. Writers who hire temporary help to fill in dialogue for their minor characters or to insert plot summaries in low-paying book reviews will no doubt find such programs equally invaluable.

The Many

Journalists, essayists, and scholars, novelists, dramatists, and poets have few suitable word-processing programs to choose from. The three best programs are not at all the best known: they are WordPerfect, XyWrite, and Nota Bene. They may be considered the two best, as Nota Bene is a refined and expanded version of XyWrite prepared under license by a different publisher and directed toward a mostly academic audience. Another worthy program, PC-Write, is less capable than these, but may be had for as little as one-fiftieth of the price, or less. (I list prices and publishers at the end.) For some special purposes, Microsoft Word may be the program of choice. But although it has virtues painfully lacking in other programs, for most purposes it seems fundamentally misconceived.

All these programs have serious flaws, and each offers its own special varieties of annoyance and illogic. But the three best programs are each far superior to anything else available. Each is designed less for the sake of dazzling salesmanship and more for easy and efficient use. Each is rapidly outgrowing its faults. By the time this appears in print, new versions of XyWrite and Nota Bene should be available, and new versions of Word-Perfect and PC-Write will follow soon after. Much that I complain about in these pages may be corrected by the end of the year, but this is no reason to delay a purchase. Software publishers replace older versions of

their programs for fees ranging from fifty dollars down to nothing, depending on the extent of the changes and the time that has passed since you first bought the program.

WordPerfect, XyWrite, Nota Bene, and the inexpensive PC-Write occupy a small circle of light in the world of word-processing. Outside, all is darkness and confusion. The darkness is well populated. All the best-selling programs are to be found there, including the most famous, WordStar. But the million-and-a-quarter copies sold of WordStar constitute no more of a recommendation for that chaotic and incapable program than forty billion hamburgers constitute a recommendation for McDonald's. WordStar is command-driven, and has given command-driven designs a bad name. The program's victims are doomed to spend months memorizing wildly illogical commands like Control-OG,* which, in an insane demonstration of the arbitrariness of language, means "indent this paragraph." WordStar sufferers insist they really prefer this sort of thing and become convinced that all programs work in the same ridiculous way. Their delusion can grow intense enough to warp their intelligence. I know an otherwise rational WordStar user who still cannot comprehend that a well-designed program like WordPerfect has no commands to memorize at all. (WordPerfect's commands are assigned to the IBM's "function keys" and are labeled on a plastic template that fits around them.) He finds it equally difficult to take in the fact that programs like XyWrite and Nota Bene use mnemonic commands like LM for "left margin" or SE for "search." He will never shed his WordStar chains (although he could do this effortlessly with WordPerfect, which automatically converts WordStar files into a form suitable for its own use), because he will never shed his conviction that any change would merely replace one arbitrary set of chains with another. (The publishers of WordStar have introduced a new program, WordStar 2000, which they claim is easier to use. On balance, it offers no improvement over the original.)

Other victims of WordStar, less dedicated to martyrdom, have given up the program for menu-driven alternatives like MultiMate and Samna Word. When describing the change, they sound like the chorus of freed prisoners in *Fidelio*. They fail to recognize that they have done no more

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*"Control-X" (or "Control-whatever") is the conventional notation that indicates "hold down the Control key and type X." On the IBM and most other computer keyboards there are Control and Alternate keys that work somewhat in the manner of the Shift key. As Shift-A produces an uppercase A, so, depending on the program and the user, Control-A or Alternate-A could produce an accented *a*, or it could Align a column of figures, or Advance to the next line, or perform any other function. The IBM keyboard also includes ten numbered "function keys" that can be used to invoke similar operations, a set of arrow keys that move the cursor (the normally flashing block on screen that indicates where the next typed character will appear), and some miscellaneous keys.

than shift from a stone cell to a padded one. MultiMate and Samna Word are designed for office correspondence and assume that the only alterations you will make after typing out a page will be small revisions rather than wholesale cutting, adding, and rewriting. Woe to you if, after completing a page with MultiMate, you decide to add a couple of sentences. You must invoke a special delete-and-insert command, which makes half your text disappear; if you make a mistake, everything that follows will be disfigured. And woe to you if, after making corrections in a paragraph typed with Samna Word, you decide to add a sentence to the end of that paragraph. Samna insists on jumping the cursor to the start of the following paragraph, and you have to maneuver it back to where it should have been in the first place. Both these programs are excruciatingly slow to do their work. If you want to move from the beginning to the end of a chapter, you have to move through every page in order while staring steadily at the screen, your mind a passive blank. MultiMate, despite its menus, manages to baffle intelligent beginners. Samna Word, which seems designed to be sold rather than used, includes some of the few available word-processing features that are almost entirely worthless—for example, a "zoom" command that provides a reduced diagrammatic image of the page you are working on. Before you can use this doubtful benefit at all, you have to spend money on internal gadgets for your computer and then be prepared to wait patiently while the computer generates that nice little image.

The Few

Compared to these quagmires, a well-designed program gives solid ground and sure footing. WordPerfect, XyWrite, and Nota Bene are all quick and capable. Each lets you write and edit without fuss or contortions. Each provides an array of conveniences that you may use if you want them or ignore if you don't. Each program can do such things as compile an index to a book or perform mathematical calculations, but if you don't want it to do either, the program never tugs at your sleeve to remind you that it can. Each offers automatic placement and numbering of footnotes or endnotes so that you can move a footnote simply by moving its number or insert a new note and let the program renumber and rearrange the rest. Each performs all the standard tasks now expected of word-processing programs. Each, for example, can automatically replace any word or formatting instruction with something else, so that you can type, say, "myx" every time you want to write "myxomatosis" and let the computer make the substitution later. (This is invaluable for scientific writing but elsewhere tends to destroy prose rhythms.)

All three programs permit you to store complex sequences of text and of formatting commands in such a way that they can be invoked by pressing a single key. You could use one key, for example, to tell the computer to insert the conventional closing for a letter, lay out the address for the envelope, and print out the letter and envelope together. And all three permit you to keep, in addition to a standard set of key-assignments, other sets that can temporarily override it. For example, a theater manager who also writes plays could make Alternate-C normally print out the letterhead for his Company, but when working on a play he could make it type out a centered and capitalized speech heading for Cordelia or Coriolanus.

I find it impossible to offer a decisive recommendation of any one of these three programs, but I hope the descriptions that follow may help others choose for themselves. Each program has a mood and character of its own that some users find intolerable, others congenial. Each has merits that I find indispensable, but each has a slightly different set of them. The ideal word-processing program would combine the best features of all three, together with one or two features each from PC-Write and Microsoft Word. Within a year or so, each may have most of the features of the others (although Nota Bene has a special indexing-and-retrieval function unlikely to appear in the other two for quite some time). But those features will operate in different ways according to the different character of each program. If you choose any one of these three programs, you would be wise to resist the temptation to switch to any of the others. If you know only one word-processing program, you will enjoy the happy belief that God uses it to write memos to the angels. If you know two programs, you will dislike them both, because each highlights the faults of the other. (This does not apply if one of the two is WordStar. The second program, in this case, seems the program of heaven, WordStar the program of hell.)

WordPerfect (not to be confused with Perfect Writer) stands out as the most realistic and transparent of all word-processing programs. It makes the computer screen look as much as possible like a page of typescript. Unlike virtually all other programs, WordPerfect does not distract the eye with paragraph symbols, tab-stop rulers, lists of available commands, names of files, miscellaneous lines and frames, or (as in Microsoft Word) the name of the program itself. At the lower right-hand corner of the screen is an unobtrusive indication of the page and line number and of the position within the line where you are working at the moment. When the program has a message to offer it uses the lower left-hand corner of the screen, or temporarily preempts another line or two, and then discreetly withdraws. Double-spaced typing appears double-spaced on screen—a great relief to the eye, and, at this writing, not yet available in XyWrite,

Nota Bene, or PC-Write. Page breaks appear as a line of dashes across the screen. For the ordinary, and many of the less ordinary, tasks of writing, no program is more agreeable and less intrusive than WordPerfect.

Unlike XyWrite and some other programs that at odd moments can seem designed more for programmers than for writers, WordPerfect communicates with the user in ordinary English. All the commands you need most often can be invoked by pressing a single clearly labeled key. To start underlining, you press the Underline key just to the left of the shift key. To stop underlining, you press it again. (In XyWrite and Nota Bene, unless you are confident enough to modify the keyboard assignments to a more sensible system, you have to press the Control key and then a number to start underlining, and the Control key and another number to stop.) WordPerfect uses menus only for functions you seldom need, such as establishing a repeating page heading or changing from pica to elite type. Any operations you perform frequently that require you to type a few keys in succession, such as starting a footnote, can be reduced to a simple mnemonic choice like Alternate-F.

With WordPerfect, the program and your printer communicate like old friends from the day you start working. With most other programs, the job of persuading the computer and printer to talk with each other feels like translating between Finnish and Turkish when you only know English. (Nota Bene is nearly as effective as WordPerfect in this regard, XyWrite and PC-Write somewhat less so.) The program also displays foreign and technical characters on screen with a minimum of effort on your part and assigns each character to a key of your choice.

WordPerfect is designed to protect its users from disaster, although at the price of a slight loss of flexibility. For example, you can tell the program to display the codes it uses to keep track of such details as altered margins or words marked for indexing, but you can only delete and then replace these codes, you cannot edit or rewrite them directly as you can with XyWrite and Nota Bene. This makes WordPerfect a bit slower at accomplishing complex tasks, but less susceptible to the invisible monkey wrenches you can easily throw into the works of the other programs. WordPerfect also protects you by making automatic backup copies of your work if you want them, and at any interval you choose. This can feel like a lifesaver. A WordPerfect program disk once went berserk on me—it happens with every program sooner or later—but the automatic backup kept my work intact, without even the loss of a syllable.

WordPerfect can correct typos and spelling errors by comparing every word in a piece of work against a wordlist with 85,000 entries. This catches mistakes the eye easily overlooks (the program also alerts you to words inadvertently typed twice), but it tends to foster the delusion that you no

longer need to proofread for substance and style. Microsoft Word includes a similar but less effective spell-check feature; PC-Write promises to include one of its own later this year. XyWrite and Nota Bene lack this feature but can be used with separate wordlist programs like Word Proof or The Word Plus.

Uniquely among word-processing programs, WordPerfect is effortless enough for a complete beginner to use with confidence and flexible enough for experienced users to adapt to their own needs. If you are especially adept with a computer, or expect to become so, you will find XyWrite and Nota Bene more adaptable. But even those two programs cannot perform some of the most useful functions of WordPerfect. Only with WordPerfect can you include in the same document asterisked discursive footnotes at the bottom of each page and numbered reference notes at the end of a chapter. With a little ingenuity, you can even make the reference notes print out in the proper order without disfiguring the body of the text with flyspeck note numbers. WordPerfect can also lay out text in two or more columns, a feature useful to scriptwriters; XyWrite and Nota Bene will do the same in the near future.

But WordPerfect also has annoyances and limitations. Some of them are bad enough to make me switch over to XyWrite and Nota Bene— whose different annoyances and limits then make me switch back to WordPerfect, and so on in an unending circle of frustration. WordPerfect starts to become annoying when you make extensive revisions in your work, especially when you make complicated deletions and changes in a single sentence. If you take out a few words from the start of a sentence, the program does not immediately shift back the remaining words into the resulting gap, as XyWrite and Nota Bene do. Instead, it "reformats" the text only when you move the cursor downward to make changes in the lines below. As you have to move the cursor anyway, this may sound innocuous. But if, after deleting a few words from the start of a sentence, you move the cursor down one line in order to revise a few words near the end of the sentence, you will find that the words have now jumped back up to fill the gap in the line where you started. You can get around this problem by pressing the "Rewrite Screen" key (which doesn't work in every instance), or by moving the cursor word by word to the right rather than taking a shortcut down, but you shouldn't have to get around this at all. The program acts the way it does because instant reformatting slows down demon typists, but I am told that the authors of the program may consider adding instant reformatting as an option. (I am also told that another potential annoyance will be eliminated before this review appears. In the version of the program available now, if you use the margins suitable for elite type, the line you are typing on screen will sometimes

jump a few spaces back and forth when you reach the end of a line. This is distracting enough to cause typing errors, and if you have been bothered by this problem, call the publishers and demand that they fix it.)

A further annoyance of WordPerfect is its slow-footedness in moving the cursor forward from, say, page two to page twenty-two. This can take as long as forty seconds—although moving backward the same distance takes only one-tenth the time. By comparison with programs that force you to scroll through each intervening page, WordPerfect seems positively speedy, but XyWrite and Nota Bene make similar moves almost instantaneously—which encourages you to make improvements anywhere you want, whenever you like. WordPerfect is also slower and more awkward than it needs to be in marking blocks of text that you want to move or copy, although improvements are promised in the future.

Two other annoyances of the program can be fixed by the user in less than a minute. As supplied, the program is set up to provide a justified right margin, which businesses prefer for appearance's sake, but which makes typescript difficult to read. The program is also set up to allow hyphenation, which means that every time you type a long word at the end of a line, the program beeps at you and asks you to decide where (if at all) you want a hyphen to be placed in the word. Both these features can be switched off permanently at any time.

WordPerfect's manual is lucid, accurate, and far more complete than most. (Novices are amazed by a software manual that has errors and omissions; old hands are amazed by one that doesn't.) The manual begins with a series of lessons that should permit a beginner to use the program competently in less than an hour. The program includes excellent "help screens" that you can summon up while working. These are so clear and precise that you may never need to consult the manual after your first few days with the program. And the program itself is so logical and elegant in its organization that you may never need the help screens again after your first few weeks.

XyWrite (properly XyWrite II-Plus—not to be confused with ZyIndex, a text-indexing program—published by XyQuest, not to be confused with SyQuest, a disk manufacturer) and Nota Bene may to some extent be considered together, as the latter program is built around a modified version of the former. Both stand out as the fastest and most efficient word-processing programs and by far the most adaptable to the special needs of any user. In XyWrite and Nota Bene, a sentence or paragraph can be moved or deleted in a trice; and it can also be restored if you delete it by mistake. Unlike almost all other programs, which stop to consult the disk every now and then before performing some essential operation, XyWrite operates entirely in the computer's electronic memory, so it can respond instantly to almost every command you might want to make.

(Nota Bene is somewhat slower when it does things XyWrite can't.) Xy-Write's authors used to work for a company that made large computers for newspapers, and their program acts as if your deadline were five minutes away. In its present version, XyWrite is too impatient to trouble itself with the fancier aspects of page layout; the frills are available if you want them, but they aren't especially easy to use. (The forthcoming XyWrite III should be more agreeable.) Nota Bene, which is mainly designed for academic use, makes the frills easy to come by.

XyWrite offers a packed toolkit of editing functions directly available from the keyboard, and Nota Bene offers a great deal more. In both programs, lesser-used functions, generally for page format and similar matters, are available by typing instructions onto a "command line" at the top of the screen. You move the cursor to the command line by pressing a function key, then type in a mnemonic code. By the time the cursor gets back into the text, the program has carried out the command. Any change in format, or any "marker" placed in the text for indexing or other purposes, is indicated on screen by a bright solid triangle. You can read the significance of any of these triangles by placing the cursor on it and reading the codes from a "prompt line" at the top of the screen. The highlighted triangles of XyWrite and Nota Bene are more distracting than the hidden codes of WordPerfect, but easier to locate and modify.

True to its speedy character, XyWrite—and with it Nota Bene—is quicker to evolve and expand than most other programs. (Only PC-Write has a comparable growth rate.) Every few months, XyWrite's authors come up with some new trick to make the program go even faster than it did before. Last year, XyWrite's search-and-replace function seemed to work twice as fast as every other program's. Now the program includes an option that makes it five times as fast. As XyWrite has grown, it has become a pleasure-ground for tinkerers. As with WordPerfect, you can invoke complex sequences of text and commands from a single key; but in XyWrite and Nota Bene you can also invoke whole programs from a single key, and you can assign any of the standard word-processing functions to any key you like. There are even functions that the program does not perform when you take it out of the box but which you can easily incorporate if you choose. All these functions can be combined *ad lib*, so that if, for some arcane reason, you wanted to be able to press the shift key and have the program capitalize everything between the cursor and the next fourteen-letter word, boldface the six words following, and tell you the average length of the words remaining, your wish can be granted. Anyone who uses the program for a few weeks will have no difficulty devising less improbable examples.

One of the drawbacks of XyWrite is its initial keyboard layout, which is sufficiently arbitrary and illogical to make you want to rearrange it more

sensibly. Not many users will have the patience to make any changes at all, and few will want to spend six months redesigning the keyboard from scratch, but this is exactly what the authors of Nota Bene have accomplished. With XyWrite, it is always difficult to remember just which combination of keys deletes a sentence or "defines" a line that is to be moved or copied. With Nota Bene, these functions and many others—far more than in XyWrite—are arrayed in a logical and rememberable way. Nota Bene is the only program I know that exploits the physical layout of the IBM's Control, Shift, and Alternate keys to make the program easier to use. The program uses the uppermost of these keys to govern operations involving individual words, the middle one to govern sentences, the lower one to govern paragraphs. Why no one else ever thought of this blindingly logical arrangement is one of the mysteries of computing.

Nota Bene simplifies XyWrite in other ways as well. Where XyWrite speaks computerese (you tell it to "type" when you mean "print"), Nota Bene speaks English. It includes menus that beginners can use until they feel self-confident enough to command. Despite its complex capabilities, it makes the initial setup of the program almost effortless, and, in the version that will appear before you read this, even sets the proper margins when you choose pica or elite type. It incorporates automatic "stylesheets" for page layouts corresponding to the guidelines offered in *The Chicago Manual of Style*, the *MLA Handbook*, and other style manuals. You can tell the program to reformat an essay from one style to another at any time—although the program cannot, alas, set or alter the style of reference used within a footnote. That is, it can't change Chicago's commas into the Modern Language Association's colons, or the MLA's arabic numerals into the American Psychological Association's italic ones (although there are separate bibliography programs that can). You could devise similar stylesheets using the current version of XyWrite if you were willing to spend a few hours deciphering the manual and wasting a stack of paper through trial and error. (The forthcoming version of XyWrite will include stylesheets of its own.) And while XyWrite makes it possible, after some tricky initial effort, to display foreign and technical characters on screen, the program's heart isn't in it. Nota Bene has a full multilingual keyboard already installed and can be directed to imitate the standard typewriter keyboards used in Britain, France, Germany, Italy, and Spain. In academic circles, Nota Bene will be cause for celebration.

Where both XyWrite and Nota Bene are annoying is precisely where WordPerfect is not. Both programs clutter up the screen with details that make programmers happy but leave writers distracted. The top three lines of the screen are wasted on information that WordPerfect displays on one line, and displays only when you need it. The three lines include

space for writing in commands, space for "prompts" from the program (in the XyWrite version brightly labeled "PRMPT"), and a distracting tab-ruler on which a ghostly shadow-cursor apes the movement of the real cursor in the text below. With XyWrite, this last line can be made less irritating, and in Nota Bene the garish neon effect is toned down a bit, but in each case it's not enough. Both programs pepper the text with little backward-pointing arrows to indicate carriage returns. XyWrite's manual tells how to remove these flyspecks, provided you are a computer adept; Nota Bene's does not. Both programs expect you to remember that Control-3 (or is it Control-2?) begins underlining, and that Control-Zero (or is it Control-1?) returns the text to normal. Once you feel sure of yourself, you can change the keyboard so the Control-U starts underlining and Control-N gets things back to normal, but beginners will have to put up with the initial settings. Neither program, as of now, can print notes or quotations or anything else in one-and-a-half spacing, and both, as of now, require you to read everything on screen in cramped single-space. XyWrite forces you to fiddle with switches on your printer if you want to use elite type rather than pica; Nota Bene takes care of such details by itself. While deliberately looking for trouble, for the purposes of this review, I found ways to "lock up" both programs in such a way that everything I might have written since the last time I stored my work on a disk would have been lost. The programmers fixed the problem almost as quickly as the gas company fixes a leak, and the changes will appear in all future copies, but you should still be careful to save your work every ten or fifteen minutes. You should save work frequently with *any* word-processing program, but you would be safer still if XyWrite and Nota Bene provided the regular automatic backups you can get with WordPerfect.

XyWrite provides two tutorial booklets that offer a smooth entry into the basics of the program. After that, you sink into the morass of the full-scale manual. The manual's style shifts rapidly from friendly chat to impenetrable computerese and back again. When you figure out what some of the entries mean, you may discover that the program has evolved to the point where the entries are no longer accurate. If you want to make a semipermanent change in the margins and tab settings, don't follow the instructions in the manual. Follow the instructions you can get over the phone from the friendly folks at XyWrite. A completely new manual is promised for the next version of the program.

Nota Bene's manual stands among the very best. It gives pointers on details that you take for granted after ten minutes with a computer, but that almost always fox a beginner. And it describes the most complex features of the program clearly. The incomplete early version that I saw

ran to 530 pages, and you'd better read most of them twice. For all the logic of Nota Bene's keyboard layout, you will never be able to remember the function of all the possible combinations of keys, and to use the program without the manual handy would be reckless folly. The early version of the program that I reviewed did not include keyboard diagrams among its help screens, but an entirely overhauled system of on-screen information should be available when you read this. Nota Bene also promises a tutorial booklet, which in the draft I saw was detailed but schoolmarmish. The tutorial guides you through the steps needed to write and print a letter of recommendation, and, with infinite tact, gives the imaginary author of the letter the rank of associate professor—a position both tenured and non-tenured users can identify with.

XyWrite and Nota Bene can both be used to compile the draft of an index for a printed book; of the two, Nota Bene accomplishes this much more easily, and it also compiles bibliographies. (WordPerfect can index a book easily when used with a hard disk, rather less easily when used with floppies.) In addition, Nota Bene can produce a computerized index of every significant word, or of preselected key words, in any group of notes or documents that you have on disk. The enormous index that results is stored in the computer, not on paper. You consult it by asking the computer to look up a word or combination of words, and the computer then displays every paragraph that fulfills your request. You can then, if you like, copy part of a recovered paragraph into whatever you happen to be writing. Nota Bene is the first word processor to include this "textbase" feature. It does so by incorporating a heavily modified version of one of the separate programs that are available for the same purpose. (The program used in Nota Bene is sold separately as FYI 3000; comparable programs include Datafax, 411, Superfile, and ZyIndex. At the moment, the technology of the Nota Bene version is still fairly primitive. The program needs a few hours of solitude to index any clutch of documents big enough to be worth indexing at all, and the documents have to be in a special format before the program can work with them. If you did not originally type them in that format, you have to alter them with some simple but time-consuming commands. Law offices use programs like this to search for precedents in computerized files of judicial decisions—files that law offices can buy on disk. A scholar could use Nota Bene's textbase to find which of a thousand learned articles makes reference to Linear B—provided the scholar has typed detailed notes on all those articles into the computer beforehand. I can't imagine doing anything of the kind myself, but there are many writers who now store their notes and jottings on disks rather than on three-by-fives, and they will find this feature of the program uniquely valuable.

For all the riches of Nota Bene, I can still imagine hesitating over a choice between Nota Bene and XyWrite, or between Nota Bene and WordPerfect. If you hit a wrong key in either of those simpler programs, nothing much will happen. If you hit a wrong key in Nota Bene, you may find yourself watching a computerized light show, as the screen whizzes through a series of operations that you never wanted the program to do at all. You will probably get the screen back to normal without any difficulty, but you may use the program more gingerly afterward. If you leave the computer for the weekend, you may spend a lot of time on Monday flipping through the keyboard charts in the manual, trying to figure out which key turns on the page-and-line indicator and which turns it off, or which key restores a deleted block of text and which consigns it to oblivion. All this is the price of Nota Bene's polycompetence. Although there are other programs that can do a number of things Nota Bene can't, no other single program can do as much. Whether most equals best is a question to which a journalist and a scholar might give different answers. There is no *best* word-processing program, but there are three excellent ones, which is more than anyone could have expected only a few years ago.

None of these programs, I am sorry to report, does anything to alleviate a major headache of the IBM and most other computers. Unless stopped by the intervention of a programmer, the cursor displayed on screen by these computers blinks on and off continuously. As everyone knows from the *film noir* scenes where a neon sign flashes on and off outside the hero's seedy office, a blinking light induces tension. If you type quickly when writing at a computer and never pause to look back over your work, you may not even notice the blinking cursor in the midst of all the other activity on screen. But if you ever sit back to think about what you have written, you will find that blinking light a jaw-tightening distraction. WordPerfect's cursor is at least small and relatively unobtrusive, but with XyWrite and Nota Bene you are battered by the blinking of a big bold block. The blinking in all these programs was almost enough to make me prefer Microsoft Word, whose cursor (in one version of the program) has a steady gaze. But everything else about Microsoft Word is so annoying that the cursor finally made little difference.

If enough users complain loudly about the cursor problem, the publishers will listen. (While I was writing this, I heard from the authors of XyWrite that they would consider offering a solid-state cursor as an option in the future. Watch this space.) Meanwhile, there is a program called NoBlink that converts the IBM's cursor to a solid block and drastically reduces the discomforts of word processing. The program works smoothly with WordPerfect, erratically with XyWrite and Nota Bene (where the NoBlink cursor sometimes disappears), and it presents annoyances of its

own when you first transfer it to your word-processing disk. But it offers hope of something better, and I can say with confidence that I have seen the future, and it doesn't blink.

Some Others

When word-processing programs cost up to five hundred dollars, a program you can get for nothing has an attraction all its own. PC-Write, even at a much stiffer price, would still be attractive. It has already matured to the point where it is comparable to the finest programs. In a year or two, it may well be one of them.

You can get a copy of the PC-Write disk directly from the publisher for ten dollars. But the publisher is equally happy if you get a copy from someone who already has one and gives you a duplicate. Most other publishers, if you give away a duplicate copy of their programs, threaten to garnishee your children. PC-Write, which calls itself "shareware," *wants* to see the program circulated this way. As the program disk contains the text of the manual, which you can print out on your printer, the free disk is more than enough to work with. But if you find you like the program, the publisher encourages you to pay $75 to become a registered user, which means you get a printed and bound copy of the manual, a reference card to help with the keyboard, telephone access to answers to questions about the program, and copies of the next two versions. If, after you register with the publisher, someone to whom you gave a copy does the same, you get a $25 commission. If four of your friends register, you start making a profit on the deal.

PC-Write is quick and clean, but limited by a variety of minor inconveniences. Its strong points are similar to XyWrite's. Because it does all its work in the computer's memory, the program never grinds to a halt to read information from the disk. It lets you move instantaneously from one point in the text to any other. It includes a unique "bookmark" indicator that lets you quit revising for the night and return in the morning to the point where you left off. (Nota Bene also has a bookmark, but if you delete it after you find your place, you can find yourself back at the beginning of the file.) It provides an instantaneous word count. (Word-Perfect's is slow, Nota Bene's only approximate; XyWrite doesn't have one at all.) It takes up only one line of the screen for its messages. It can store complex operations on a single key, and the keyboard can be modified at will. These are significant merits at any price.

On the other hand, PC-Write will not reshape a paragraph after deletions and insertions until you press a Rewrite key. It displays text on screen only in single-space. Its footnoting is primitive. The keyboard is densely and confusingly packed with functions. When you want to print

anything, you have to close down the editing program and start up a separate printing program. Beginners will find the program difficult, and the manual reveals its secrets only to those who already know something about word processing. In my first few days with the program, I found two or three bugs and unpredictabilities, none of them serious.

Yet PC-Write is a program that improves and expands even more quickly than XyWrite. Every two or three months a new version appears that works more smoothly and capably than the last. A major revision is promised for later this year, with a new and intelligible manual, menus for beginners, and a wordlist for correcting misspelled words. Automatic reformatting, indexes, and the integration of the editing and printing programs will follow. PC-Write has an almost miniature feel to it, but that is because it is a compact jewel of a program that does a great many things well and will soon do more. Perhaps someday it will even rein in its cursor, which is at present another of those bright flashing blocks.

As for the much-ballyhooed program Microsoft Word, the cursor is one of the things it does right. Whatever Microsoft Word does right, it does better than any other program. What is frustrating is that it does so many things wrong. If you have a laser printer and want to typeset your own magazine with various fonts and sizes and in triple columns, then Microsoft Word may be the only program to buy. If you need to be certain that everything you write appears in an absolutely consistent format, as a corporation might want for its business letters, then Microsoft Word can do the trick. It will take you forever to get it to work properly, but it will work eventually. You may discover afterward that WordPerfect or the new versions of XyWrite and Nota Bene could do the job almost as well and with less teeth-grinding, but Microsoft Word offers unique refinements, such as format measurements in centimeters and points, that may make it worth the effort.

For writing that needs less exacting formats, Microsoft Word offers other benefits. No other program is nearly as effective at displaying two or more documents, or two or more parts of the same document, on screen at the same time. This split-screen or "windows" feature can be extremely useful, despite the small amount of text visible in each file. You can write your draft at the top of the screen while consulting a file of notes or quotations at the bottom, and maintain a notepad at the right-hand edge as well. More primitive windows are available in XyWrite and Nota Bene (the latter's slightly easier to use), and also in PC-Write. (WordPerfect will not have windows until later this year or early next, although it now lets you switch back and forth between two different screens.) But only Microsoft Word lets you put different parts of the same file on screen and make revisions in each. With other programs, you have to put two different *copies* of the same file onto the screen, and any revisions you make in one

will not be made automatically in the other. Microsoft Word also can be told to use one window for displaying the text of footnotes whenever a footnote number appears in the main text in the other window. The program permits you to have eight windows open at once, a number that seems more suited to salesmanship than to any possible use.

When you shut Microsoft Word's windows, unfortunately, little else about the program seems attractive. It was designed originally to be used with a "mouse," a bulbous plastic object you push around a desktop in order to guide the cursor. (If you use the mouse with Microsoft Word, the program has *two* cursors, the nonblinking one controlled from the keyboard, and a flashing block controlled by the mouse.) The mouse has two buttons that you press in various combinations and sequences in order to tell the program how to behave. You can use the program with the keyboard alone, but much of its design, especially the layout of the screen, makes sense only when the rodent is in the works. Writers who like to take their hands away from the keyboard every few minutes to fondle a plastic toy and who always keep a large clear space open on their desks will find the mouse delightful. Others, sensing the gigantic wasted effort that went into making this complicated program work, may perhaps mutter: "Parturient montes, nascetur ridiculus mus." The publisher, belatedly recognizing that the whole idea was wrong from the start, no longer sells the program and the mouse in one package, and the manual of the most recent version is directed mainly to those who only use the keyboard. But the program still insists on enclosing its text in a distracting double-lined frame that has no function except as a maze for the mouse-cursor to move in. And it still insists on wasting a line with the unhelpful information that the program you are using is called Microsoft Word.

That same line is also supposed to tell you what page you are now working on. The number it reports is usually wrong. Even after you type ten thousand words, Microsoft Word insists that you are still on page one—unless you tell it to "Repaginate," which you do by going first to the Print Menu. If you add or delete text later, the page number will be wrong again, unless you repeat the whole procedure. Microsoft Word, as you've guessed, is menu-driven, and it uses some of the most baroque and opaque menus ever devised. If you want to save your work onto a disk and then start writing something new, you first press the Escape key to gain access to the main menu. This takes some time. You then press T, meaning Transfer, to gain access to a menu that governs most, but not all, operations that move a file from one place to another. You then press S for Save, and then the Enter key. Then, after a seemingly endless wait, you start all over, pressing T for Transfer, C for Clear, and then confirming that you want to get rid of everything on screen rather than the contents of a single window. The program now makes you wait once again

before it lets you start writing. By this time you may have forgotten what it was you wanted to say.

One of the program's selling points is its use of stylesheets. After you figure out how to compile them, these permit precise and repeatable formats for such things as addresses, headings, summaries, postscripts, footnotes, and anything else you can type with the program. This is all very fine, but if you want to do something as simple as change the program's normal format for margins and tab stops so that you can use elite type rather than pica, for example, then you are in deep trouble. What you have to do is compile a "normal" stylesheet, and then, before you can start work, you have to copy this stylesheet onto every disk that you plan to use for storing documents. This is almost as bad as WordStar. Microsoft seems to have been too embarrassed to say anything about this procedure in the manual. The chapter on stylesheets maintains a stony silence on the matter, and only the barest hint is hidden away in an appendix of questions and answers. Every worthwhile program lets you personalize its "default" settings as much as you like. Microsoft, however, has its own ideas, and when I suggested to someone at the company that the normal stylesheet was an abnormal inconvenience, he seemed genuinely offended.

Microsoft's publicity emphasizes the unique flexibility of the program's control over the printer. What Microsoft doesn't tell you is that you'd better have a degree in programming if you want to print out foreign characters. And Microsoft doesn't warn you that the program's control over the printer may at any moment turn into an arbitrary tyranny. My copy of Microsoft Word insists on printing a solitary capital B in the margin of everything I print, two or three inches above the first line—although it sometimes substitutes a lower-case e, and twice, in an expansive mood, printed *noi* instead.

Like many costly programs, Microsoft Word is "copy-protected," which means you can't reproduce the program onto any disk other than the one supplied by the publisher. This is to prevent you from depriving the publishers of their revenue by giving away a copy to someone who might otherwise buy it. Copyright protection of this kind may seem reasonable enough, especially to authors who prefer readers to buy their books rather than use xerox copies. But the only real effect of copy-protection is to inconvenience honest users. Anyone who buys one of the special thirty-dollar copying programs advertised in the computer magazines can make a copy of a "protected" disk in seconds. And most fifteen-year-olds can do it without a copying program. But if you don't have a copying program and don't intend to give away illicit copies, you are rewarded with one inconvenience after another. If a speck of dust damages your program disk, you can use the backup copy provided in the original

package and hope that nothing happens to the backup while you send Microsoft a check for $25 and wait for them to send you a replacement. Meanwhile, you have to go through the same initial setup procedure with the backup that you went through with the original. With programs that are not copy-protected, like WordPerfect, XyWrite, PC-Write, and (in its most recent version) Nota Bene, you can make as many backups as you like and use them either for a sense of security, or as a convenient way of switching from one standard format to another, or to experiment with the possibilities of the program without worrying about damaging the disk. (Nota Bene has replaced copy-protection with a reasonable scheme that requires you to put your name on the disk before it will run; they will only replace a disk if you send in a copy with your name on it.) "Protection," incidentally, is a euphemism used by software publishers in the same way it is used by gangsters. A copy-protected disk can suffer just as much damage as any other kind. Copy-protection merely prevents you from protecting yourself against the consequences of the damage. All this because publishers like Microsoft assume you are (1) a crook who will pirate their program, and (2) an idiot who won't know how.

When you buy a program of any kind, one benefit you should expect to receive is free access by telephone to answers to any questions you may have about it. Publishers are under no legal obligation to give help of this kind, but users have come to expect nothing less. One justification offered for the high price of software is the high cost of providing answers to questions phoned in by users.

The classic example of how *not* to provide this service is WordStar, always first with the worst. If you phone WordStar's publisher for help with that impenetrable program, you will most likely be told to go away and ask your dealer. As a computer dealer is best defined as someone to whom you explain your computer, this advice has seldom been considered useful. And if you asked for help in customizing the program, something you can do on your own in a few seconds with worthwhile programs, WordStar used to gouge you for four hundred dollars before it would supply a set of instructions.

In contrast, programs worth buying are also programs that will help you after you buy them. WordPerfect provides the best support of any word-processing publisher, but XyWrite, Nota Bene, and PC-Write are not far behind. If you have a printer that any of these programs does not yet know how to communicate with, the publishers will supplement the program at no charge, provided you send them a copy of the printer manual. WordPerfect has a toll-free number for customer questions and will phone you back rather than keep you on hold. Everyone I've spoken to at WordPerfect was knowledgeable and patient, and if they didn't know the answer to an especially arcane question, they volunteered to find out

and call back. (By the way, I didn't identify myself as a reviewer.) When I phoned about a minor aesthetic flaw in the help screens of a new program disk, they confirmed the error in their copies and sent a replacement immediately. Any correction in the program made in response to a caller is added to all future copies. XyWrite, Nota Bene, and PC-Write don't have toll-free numbers, but in every other way their level of support is equal to WordPerfect's. They too will call you back rather than keep you on hold and will send a revised disk if you discover a flaw in the program. Perhaps because these three are smaller companies, they are even quicker to respond to suggestions for improvements. Nota Bene, whose academic customers tend to work after business hours, may provide additional telephone support in the evenings. None of these programs leaves you with the sinking feeling that you are going to have to spend a lot of time and money getting the program to work after you spent a lot of money buying it.

At Microsoft, on the other hand, the support policy can be summed up in three words: It's Your Dime. Microsoft first lets you pay for the call, then keeps you on hold while subjecting you to canned music interrupted by recorded messages that suggest you might be better off calling later. I was sometimes able to get through to a human being within five minutes, but usually I gave up after fifteen. Once I made the costly experiment of waiting to see just how long it would take for my call to be answered—and waited a few minutes more than an hour. Whenever I did get through, the people I spoke with were either laconic but knowledgeable or friendly but ill informed. Those who didn't know the answers didn't volunteer to find out. Still, it could have been worse. Samna Word lets you ask questions, at your own expense, only during the first thirty days after you buy the program. If you need help after that—and you will—they allow you to pay them $100 for the privilege of phoning them ten more times during the following year.

I almost forgot the thousands of writers still loyal to their Kaypros. If you are one of these, you probably use either Perfect Writer (in its early versions) or WordStar, the two programs that at different times were packaged with the machine itself. If you have Perfect Writer, stop what you are doing and order copies of Writer's Guide and Plu*Perfect Writer. These are "enhancement" programs that you can add to Perfect Writer in order to make it do the things it should have done in the first place. Writer's Guide replaces the Perfect Writer menu with a far more useful one, and also provides instant word count, a command to restore erased files, and vastly improved control over formatting and printing. Plu*Perfect Writer improves everything left untouched by Writer's Guide. It provides flexible cursor movement and powerful commands for formatting text, and it also lessens the original program's large potential for

disaster. These two enhancements make the original Perfect Writer a worthy program you can live with for years. Nothing, however, can salvage WordStar, and if you are using WordStar on a Kaypro, I can offer nothing but sympathy.

Edward Mendelson

Publishers and Prices

Microsoft Word. Version 2.0. Microsoft Corporation, 10700 Northrup Way, Box 97200, Bellevue, Washington 98009. $375 list price, available for $225 from mail-order dealers.

NoBlink. Nostradamus Inc., 5320 South 900 East, Suite 110, Salt Lake City, Utah 84117. $30, from the publisher only.

Nota Bene. Version 1.0. Dragonfly Software, 409 Fulton Street, Suite 202, Brooklyn, New York 11201. $495 list, available from the Modern Language Association, to members only, for $396.

PC-Write. Version 2.5. Quicksoft, 219 First N., #224, Seattle, Washington 98109. $10 for the disk, $75 for a registered copy, free through users' groups.

Plu*Perfect Writer. Plu*Perfect Systems, Box 1494, Idyllwild, California 92349. $39, from the publisher only.

WordPerfect. Version 4.0. SSI Software, 288 West Center Street, Orem, Utah 84057. $495 list, $235 from mail-order dealers.

Writer's Guide. Interior Systems Software, Post Office Box 188, Joelton, Tennessee 37080. $35 for the Kaypro II, $55 for the Kaypro 10, from the publisher only.

XyWrite II-Plus. Version 1.5. XyQuest Inc., Post Office Box 372, Bedford, Massachusetts 01730. $295 list, $200 from mail-order dealers.

NOTE: The version listed is the one available at the time of writing (May 1985). A "version" of a program is roughly equivalent to an edition of a printed book. Version 1.0 corresponds to the first printing of the first edition, 1.1 to a revised and expanded second printing, 2.0 to a rewritten second edition.