

PRODUCT COMPARISON

InfoWorld evaluates
14 office/professional
word processors

HEAVY DUTY WORD PROCESSING

More competitive than practically any other major software category, high-powered office/professional word processing appears captured by an accelerating race to find new features and functions for the next release. Driven in part by the growing sophistication and power of affordable hardware, word processing capability expands to take advantage of more memory, bigger and faster hard disks, faster and higher-resolution displays, and, especially, the runaway success of the 300-dot-per-inch laser printer with proportionally spaced fonts.

Standards of quality and acceptability rise with the quality of the market leaders in this field, and what was interesting and exciting one year is standard the next. The life cycle of major revisions in word processing shortens as each company struggles to get new features implemented to match those introduced by the competition.

All this requires frequent reviews and re-reviews as the judgment of excellence lasts only until the next version of the competition is released. While this is exciting for reviewers, advertisers, and technology enthusiasts, it drives users and managers nuts. Specialist users want the latest version of their favorite word processing package, but average users resist the change, recognizing that the cost of adjusting to new features will fall on them — learning revised command sequences and coping with the increased complexity of more powerful word processing. Worse yet, in the scramble to meet advertised release dates and beat the competition, some of the best in the business release bug-ridden upgrades that must pass through several revisions before stabilizing.

In spite of these difficulties, however, the user community has shown a remarkable capability to keep up with the changes, partly because most people can, in fact, produce better results with easier-to-use and more powerful and capable software and hardware technology. Laser printers produce better copy than impact printers and are indispensable for graphics. Proportionally spaced fonts look good and require less space for the same message. Graphics integration greatly improves the ease of constructing com-

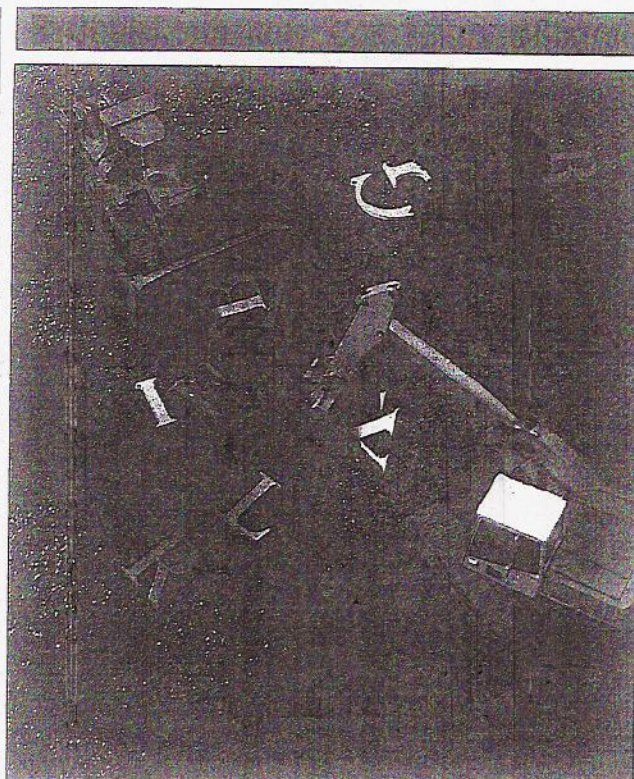
plex documents, and exact preview of the printed page becomes an essential ingredient for the efficient production of final copy.

Here we evaluate several players in the current crop of popular office/professional word processors, and while all of them are quite competent products, there is a relatively wide range of features and capabilities. Part of this difference is the result of the revision cycle, with some products evaluated in a new release while others are still being revised. For example, Word Perfect is represented by its recently revised Version 5.0, while Manuscript Word is in with its current Version 4.0 (5.0 is due in early 1989), and Multimate Advantage II has been out for some time.

Another group of products shares a similar product philosophy. Xywrite III, Nota Bene, and PC Write offer great customization capabilities but require more user effort. Sprint mimics the user interfaces of other systems. Office Writer and Samna, along with Displaywrite and Multimate, have the highly structured menu systems derived from their dedicated office word processing system modes.

Word Perfect, the Wordstar products, and Total Word offer popular interfaces that emphasize document construction but adapt somewhat less rigidly structured menu systems. Microsoft Word has a typesetter's approach, with special emphasis on using a mouse, and Lotus Manuscript offers an extraordinarily structured approach to document construction that emphasizes the architectural elements of text preparation and organization.

This product comparison is based on a 1989 set of scoring criteria used in the performance category (see "How We Tested Office/Professional Word Processors," Page 48), and many performance scores have changed (often dropping) to reflect the new criteria. Many products have been reviewed before in their current iterations, and as a result other scoring categories, such as documentation and ease of use, remain largely unchanged; however, in this changing field new issues can affect scoring of any category, and some scores have changed in these areas as well. We repeated telephone calls to technical support, and the scores in this category may be



PRODUCTS REVIEWED

Displaywrite 4 1.0	48	Sprint 1.00	59
Lotus Manuscript 2.0	50	Total Word 1.2	62
Microsoft Word 4.0	54	Word Perfect 5.0	63
Multimate Advantage II	54	Wordstar Professional	64
Nota Bene 3.0	55	Wordstar 2000 Plus 3.0	65
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different from previous reviews.

While this product comparison captures the high-end word processing marketplace as it stands today, we can predict with confidence that the same marketplace will change within six to nine months, so stay tuned.

Displaywrite 4

Version 1.0

As the competition has improved and enhanced word processing products, Dis-

playwrite 4, Version 1.0 has stayed put, thereby losing ground to more powerful products. Although significantly better than its predecessor, Displaywrite 3, and with a highly enhanced upgrade looming on the horizon, this word processing system would not be competitive without its corporate parentage from IBM. Displaywrite 4, Version 2.0 is now shipping (not reviewed here) and contains a variety of enhancements and new features.

It only offers useful printer support for IBM-brand printers, and while it does a creditable job with standard office tasks,

it lacks a host of features now standard with the competition. Displaywrite lacks newspaper columns, strong cursor and editing commands, nonprinting comments in the document, margins in inches, and a preview capability.

There is no support for a split screen or windowing, and Displaywrite continues to use a clumsy pagination system.

Among high-powered office word processing systems, Displaywrite 4 continues to hold a place below the likes of Word Perfect, Office Writer, Microsoft Word, or Multimate.

Basic editing is generally adequate but earns a poor rating due to a limited search-and-replace function that does not maintain capitalization and no special enhancements to offset the limitation. Formatting includes multiple columns, but no landscape support or multiple document views; it earns a poor score. You can vertically center text on the page.

Font support is rated satisfactory, with changeable fonts that can have the pitch adjusted. There is no style sheet support.

The spelling checker and thesaurus combination is given a poor score, due to

How We Tested Office/Professional Word Processors

Our product comparison of office/professional word processors establishes new criteria and ratings for 1989 based on reader surveys and experience with already established testing and scoring methodology in this area.

The InfoWorld Test Center evaluates the products according to an established baseline of core requirements in the performance report card category, which includes basic editing, formatting, spelling checker and thesaurus, mail merge, outlining, table of contents and index generation, footnotes, fonts, style sheets, macros, graphics, printer support, and compatibility. We give bonus points for exceptionally implemented features, and we deduct points if they are inadequately implemented. We do not score features available optionally from the vendor or third parties.

All tests were performed on an 8-MHz IBM AT Model 339 with a 30-megabyte hard disk, EGA, and 640K of RAM.

Performance scores are based on a detailed, item-by-item analysis of features and how well they are implemented. InfoWorld Test Center technicians used a detailed rating sheet for each product. The rating sheets considered whether a particular feature existed, how capable it was implemented, and if it had any enhancements or impediments. There are also additional bonus sections (such as time stamping under basic editing or templates under mail merge) that can be awarded in each section. Because the quality and quantity of features have increased over the last year, our standards have become higher and more demanding.

Basic editing: This is a test of the word processor's capability to perform simple, standard word processing editing tasks. The basic scored features are cut/copy and paste, search and replace, cursor movement, red/invisible tabs, status line information (page number, line number, current font, etc.), and paragraph reformatting. Bonus features include time stamping and windowing (viewing and editing multiple screens and documents).

Formatting: This is a test of the word processor's capability to lay out and format the document on-screen. With the advent of desktop publishing, many word processors now offer a variety of tasks capable of accomplishing surprisingly complex page composition. Basic scored features include multiple columns, right/left page orientation, portrait/landscape pages, multiple views/zoom in and out, and widow/orphan control. Bonus features include vertical justification of columns and static text placement (anchoring).

Fonts: For most users, font support is a must. Each package should be able to change fonts within the text and be able to underline, boldface, or italicize fonts. You should also be able to edit the font as it will appear on the screen (in terms of line breaks, pitch, etc.); this is called WYSIWYG editing. Bonuses are given for WYSIWYG fonts appearing on the screen, although none of the packages has this feature. All of the products performed satisfactorily in this area; some packages contained additional support for soft fonts or Postscript and this was scored under printer support. (See below.)

Style sheets: At a basic level, each word processor should be able to store a set of styles that include paragraph and character information (line widths, fonts, etc.). Bonuses are given for the capability to store named styles, to record styles by example, or to view styles before they are selected.

Spelling checker and thesaurus: We require each

office/professional word processor to include a 100,000-word spelling checker and a 75,000-word thesaurus for a satisfactory score. Basic scored features include a single-user dictionary, whether the package includes word replacement suggestions, and a replacement feature that maintains capitalization and punctuation. Bonus items include synonym definitions, multiple dictionaries, and the capability to globally replace words. We lower the score for the absence of a thesaurus or case sensitivity.

Mail merge: This tests the word processor's capability to merge letters with lists of names and addresses for mass mailing. We basically require each package to perform error checking (skipping incorrectly entered records) and automatic paragraph reformatting. Bonus features include mail-merge templates, flat-file managers, programming features (such as conditionals), and database links (DBF or WK1, for example).

Outlining: We require the word processor to be able to create basic, simple outline formats. Also required is the capability to simultaneously view the outline in a separate window from the main word processing document, which is extremely helpful if you're using the outline to construct a longer document. We give bonuses for the capability to expand/collapse outlines in true electronic-outliner style.

Table of contents and indexing: To generate a table of contents or index, we require each word processor to support at least one subtopic level and to perform basic formatting. Bonuses are given for cross-referencing capabilities.

Footnotes: Each office/professional word processor should support footnotes and endnotes. At a basic level, there should be automatic numbering with notes embedded in the text and formatting and automatic superscripting. Bonuses are given for cross-referencing capabilities and on-screen numbering.

Macros: Macros are actually text or short programs that provide automation for manual tasks. Macros provide the capability to customize and, in some cases, even perform basic programming functions in a word processor. Many users customize automatic commands, embed functions, and reassign keys to suit their individual tastes and needs. Each word processor should basically be able to record macros and enter commands, as well as save macros by storing them in the program (not a separate file). Bonuses are given for conditionals or variables support and the capability to reassign function keys.

Graphics: Graphics have become the new frontier in word processing. We now require each package to import at least PCX and PIC graphics files and to preview graphics in the document to some degree. We also require the capability to draw at least two styles of lines on the page. Bonuses are given for free-form drawing capabilities, box or circle drawing, fill patterns, and the capability to rotate, scale, screen, or crop images.

Printer support: At a basic level, each word processor should be able to print on an HP Laserjet, a dot-matrix printer, and a Diablo-type daisy-wheel printer. Bonuses are given for HP Deskjet or color printer support as well as support for Postscript or for soft fonts such as Bitstream.

Compatibility: Each word processor should import and export ASCII and DCA/RFT files. Bonuses are given for additional file format support.

Speed: We scored speed by comparing the results of all the packages' performance in 11 tests: file loading, file saving, importing an ASCII file, exporting an ASCII

file, importing a DCA/RFT file, cursor speed moving from the top to the bottom of a document, manually scrolling to the bottom of a document, reformatting text, searching for the last word in a document, searching and replacing a string of characters throughout a document, and appending a file to the test document. Scores represent a compilation of how each product behaved in all tests and how individual results compared with other products in its class. To achieve a satisfactory score, the word processor had to perform quickly and efficiently in a majority of the tests. Higher scores meant the word processor did better overall, generally, if not always, exceeding mean times for all tests.

Documentation scores reflect the quantity and quality of both written and on-line information. At a minimum, documentation should describe the product and how to use it. Bonuses can be awarded for a quick-start guide, on-line tutorial and help programs, a quick-reference card, and a written tutorial. Poor organization, missing information, or an incomplete index lower the score. Error messages are also considered under documentation: Bonuses are awarded for error messages that clearly explain the problem or, ideally, offer suggestions on how to resolve the problem.

Ease of learning scores depend on the user interface and the intuitive design of the products. Other factors that influence this score include the complexity of the program and the quality of documentation and tutorials. To earn a satisfactory score in this product comparison, a program must be learnable by novices.

Ease of use, like ease of learning, is in large part a function of the program's design and evaluates how easy the average user would find the program to use once the basics have been mastered. A menu system that is easy to follow and command shortcuts are two features that can simplify using a program.

To earn a satisfactory score in **error handling**, a program must prompt you to save files and shouldn't do anything to corrupt data or make it easy for you to lose information. Bugs or serious performance problems can affect scoring. An Undo command, which lets you "undo" an editing action such as deleting a block of text or placement of graphics, can enhance the score, as can an automatic save or backup feature. An undelete function is more limiting, only letting you reverse a deletion and no other action. Bonuses are awarded for programs whose error messages significantly enhance error handling or contain information that helps identify or solve the problem.

Support is divided into two areas: support policies and technical support.

Support policies: In scoring for support policies, we begin with a satisfactory score and award bonuses for product usability warranties, money-back guarantees, a toll-free line, and corporate extended support. We subtract points when vendors provide no technical support or limit the support to 30 or 90 days.

Technical support: Technical support scores are based on the quality of service we actually received in the course of multiple anonymous calls to the vendor and the availability of knowledgeable technicians.

Value scores reflect the price vs. the performance and features of each package tested, taking into account the competition.

Displaywrite 4
PRODUCT SUMMARY

Company: IBM Corp., Old Orchard Road, Armonk, NY 10504; (800) 447-4700
Version: 1.0
Price: IBM PC or compatible: \$41K or RAM for floppy-based system: 310K or hard disk-based system: DOS 2.1 or later; hard disk recommended.
Features: Nice mail merge; strong document assembly; strong support for IBM-brand accessories.
Comments: Bad technical support; supports few non-IBM printers; clumsy reformatting; no graphics or column support; no thesaurus.
Summary: Displaywrite 4 is best suited for environments with major document assembly and text processing tasks. IBM-brand equipment, and internal technical support capabilities.

The absence of thesaurus support. Also, the spellchecker is not case-sensitive — it won't recognize words that are misspelled with a different case. Although there is a user dictionary and, in some cases, there are ample suggestions available. However, mail merge receives a good score, with error correction possible during a run, auto-formatting of merged text, and compatibility with several database files such as from Lotus and dBase.

We rate outlining good, with basic outlining capabilities and the capacity to combine outlining levels; you can also view the outline from within your document. There is an extra table of contents/indexing feature available, since it is optional we did not rate it. Footnotes are good, with user-definable formatting, on-screen numbering, and a footnote library. We rate macros good, with support for commands, keystroke recording, and storage of macros in a separate file. User prompts are possible and function keys can be reassigned to different functions. There is no graphics support, and IBM printer drivers included in the program. (Other printers are supported optionally.)

Compatibility turns in a satisfactory rating, offering the compatibility with ASCII and RPT/DCAL. Speed remains satisfactory, with acceptable but not mid-range performance on most functions. Documentation is reasonably complete, but the indexes are only fair and the manual has no glossary. The quality of the *Getting Started* manual is quite good, and the reference and technical manuals are useful. On balance, we rate documentation good.

This version of Displaywrite is relatively easy to learn, thanks to elaborate, context-sensitive help screens that permit a user to find almost anything required to complete a task. Moreover, the transitions among Displaywrite 4's various functions (tasks, in the IBM parlance) are quick and virtually transparent to the user. Unfortunately, there is no tutorial and the few examples in the documentation make it difficult for inexperienced users to learn how to manage some of the more complicated features, and forces advanced users to experiment in order to learn. Ease of learning is good.

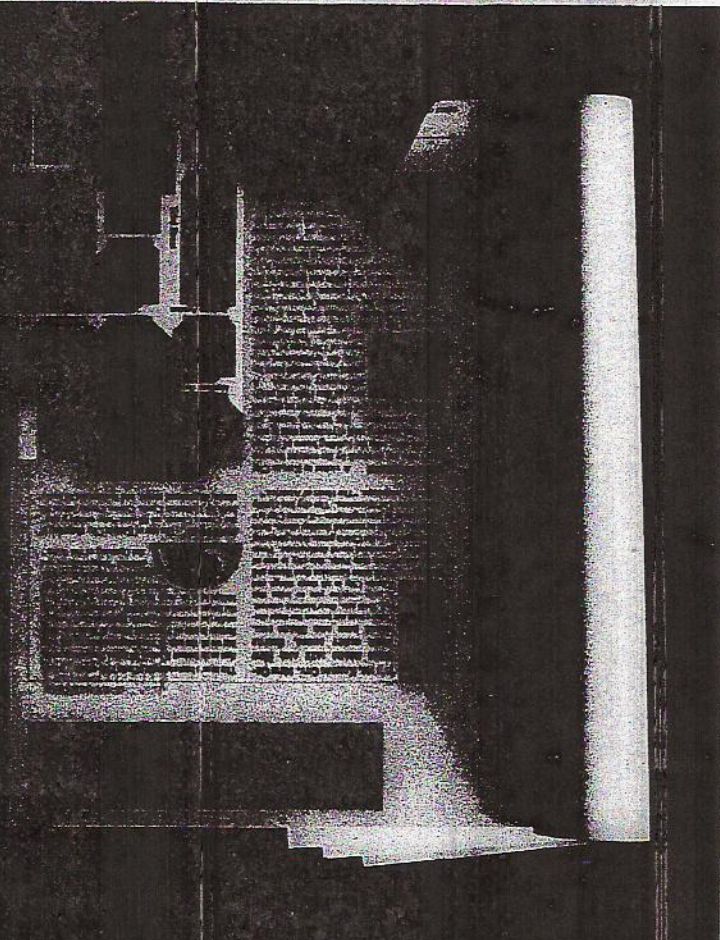
The combination of good menus and extensive help screens enhance ease of use. While many functions can be called with a single keystroke, most require section from a menu. The program's limited cursor controls and the inconvenient

There's only one desktop publishing program that's equally adept at producing stunning graphic design and powerful business reports. It's Aldus PageMaker. And it means desktop publishing to more people around the world than any other program.

For creative professionals, PageMaker offers powerful features for precise page composition, business software and peripherals than any other publishing program to run on both Macintosh and PC computers. And it's compatible with more support for long documents. It's the first desktop features like built-in templates and comprehensive For business professionals, PageMaker offers All in a friendly, intuitive way.

document formatting, spot color, and text handling.

THE CREATIVE SIDE OF PAGEMAKER.



document in some cases reduce its effectiveness for experienced users. Over-all, we rate ease of use satisfactory.

Displaywrite 4 preserves a backup file whenever the program begins editing. However, an unanticipated termination (power failure, for example) can leave significant portions of newly entered text unrecoverable. A special recovery utility improves the chances of getting your data back, but it is not perfect. The Undo command, while a nice addition, only recovers the most recent block deletion. We rate error handling good.

IBM provides no direct telephone support to users, referring them instead to dealers. On-line electronic support is available at cost. We think the support provided for this product is minimal, at best, and rate support policies poor.

The absence of user-accessible technical support from the company earns Displaywrite an unacceptable score in technical support.

The dealers we contacted offered to help, but could not answer questions without researching the question and calling us back later.

In relation to the competition, at \$495 Displaywrite 4 is much less of a value than Office Writer 6 or Word Perfect 5.1. We can rate value no higher than poor.

Manuscript has acquired a reputation as the word processor of choice among technical writers because of its highly structured editing mode, which is suitable for complex documents with multiple sections and subsections. Based on an outlining format, it takes some conceptual restructuring to think and edit in sections and blocks, but the result is a highly polished system that handles complex, structured text with great facility. An unstructured editing environment for letters, Lotus Manuscript

Support policies include unlimited telephone support on a regular phone line, a product usability warranty, extended support hours (5:30 am to 5:00 pm Pacific time), and bulletin board support. There is a coupon on the box for toll-free, priority support for six months, and a newsletter is included in this program. The same program can be extended at cost. We rate support policies very good.

Technical support calls produced comprehensive answers from very knowledgeable technicians, earning Manuscript 2.0 a very good score for technical support.

At \$495, Manuscript is a very good value, especially for users with a need for its special features and its unique approach to document construction. Within the context of professional word processing systems, Manuscript 2.0's list of features and generally fine performance places it just under Word Perfect 5.0 or Wordstar 2000 for richness of features, and its special characteristics are unequalled in the market. Manuscript's handling of structured documents is simply the best in the business, due in large part to the excellence of its outliner module.

Microsoft Word

VERSION 4.0

Long known for its superb formatting, Microsoft Word produces the best output most printers can provide. Through style sheets with elaborate formatting specifications, a complete description of the document can be saved. These can then be reused for subsequent documents of the same type.

Word sees text through the typesetter's eye, focusing on the precise control of the printed page. The disadvantages come in the form of unfamiliar terminology, complex commands, and somewhat clumsy operation when compared to other office/professional competitors.

"Long known for its superb formatting, Microsoft Word produces the best output most printers can provide."

Word's list of features is impressive and includes automatic hyphenation and revision marking. Powerful mail merge, form letter, and form processing commands adapt this product to the business environment.

Spreadsheets from 1-2-3, Excel, or Multiplan formats can be directly imported into a Word document, and subsequent printings will reimport the

spreadsheet with any changes included. Word has macros, columns, and windowing, and it easily handles complex indexes, tables of contents, footnotes, and lists. Unfortunately, Word 4.0 requires explicit repagination to get page breaks correct, and newspaper columns do not appear on the screen.

Word 5.0, a highly enhanced revision, was scheduled for release as we went to press with this review.

Word's powerful basic editing capabilities include strong cursor controls, easy-to-use cut and paste, enhanced status line support, and a variety of tabs along with the capability to edit multiple files in windows and to date-stamp a document. We rate basic editing capabilities very good.

There is no support for multiple views of documents (zoom, etc.). True widow/orphan control is handled well, and other standard formatting features, such as multicolumn support and selectable portrait/landscape layout, are included. We rate formatting capabilities satisfactory. You can change fonts in a document and there is support for super- and subscripting. We rate fonts satisfactory. Style sheets are rated very good, far better than most high-end word processors, letting you record, store, and edit styles by example sheets.

The spelling checker and thesaurus are satisfactory, with a custom user dictionary and case-sensitivity. We rate mail-merge capabilities good, with conditionals and simple math supported as well as programmability. Mail-merge fields can

be defined as names instead of just numbers. Word's outlining feature is very good, bettered only by the one in Lotus Manuscript. Bullets are supported, as is building text from an outline and expanding and collapsing levels.

The table of contents and indexing facilities support multiple levels, and the tables and indexes can be formatted using style sheets. We rate table of contents and indexing good. Footnoting uses a window entry method, and accepts either end- or footnotes with user-definable formatting. We rate footnoting good.

Macros are rated very good, accepting keystrokes and commands and storing them in separate files. Conditionals, prompting, variables, and shortcuts are all available. Graphics support includes basic line drawing, but Word will not import PCX or PIC files. Although previously rated higher, with our current standards Word 4.0 graphics are rated no higher than satisfactory.

Printer support greatly exceeds our basic requirements, handling Postscript, color, and Deskjet printers. We rate it very good. Compatibility is satisfactory with support for ASCII and DCA/RTF files. Word earns a good speed score, doing generally well in all tests.

Documentation is flawlessly clear and complete. There is a thorough table of contents, index, error message section, pocket guide, and printer information booklet. We rate this top-notch documentation excellent.

Word is easy to learn, with clear instructions and a main menu screen that is both easy to figure out and intuitive. We rate ease of learning very good. Experienced users will find Word very easy to use, thanks to speed keys, extensive macros, and a robust variety of other tools; we would like to see an automatic repagination feature, however. We rate ease of use very good.

Error handling is rated good, with an Undo function and careful handling of errors and file integrity. Word creates an automatic backup file each time you open a document.

Support policies include unlimited technical support on a non-toll-free line, extended technical support hours (6 a.m. to 6 p.m., Pacific time), bulletin board support, and a free newsletter. We rate support policies good.

Technical support is rated good, and we had no difficulties getting through to the support line. The Microsoft staff was helpful and knowledgeable.

As a major player in the professional word processing competition and priced at \$450, Microsoft Word is a very good value. While the current version is no longer at the head of the features pack, the imminent upgrade should help keep Word one of the powerhouse word processors.

Multimate Advantage II

VERSION 1.0

Multimate Advantage II, as befits a product made successful by cloning the Wang dedicated word processing system, sees text as a sequence of separately treated pages much like a typewriter deals with sheets of paper. Today Multimate is a strong, full-function word processor with many features, such as good editing, nice printer support, and a simple-to-use design. The product has improved with age and now allows extras such as a "push ahead" insert where new text can be inserted at the cursor, pushing the rest of the text ahead of the cursor to make room.

Although Multimate implements

What's Next in the Word Processing Competition?

Over the years, word processors have competed for primacy in the hearts and fingers of wordsmiths by emphasizing different aspects of the word processor's art. Fancy cursor movement, cut and paste of rectangular and regular blocks, large document sizes, speed of reformatting, complex indents and spiffy tab stops, spelling checkers and thesauri, graphics, page previews, indexes and tables of contents, footnotes and endnotes, section numbering and revision marking. The list of feature categories continues endlessly. As each new category becomes standard, new ones emerge to help users distinguish between increasingly powerful products.

Today we find several areas defining the competition. The advent of the cheap laser printer capable of supporting downloadable soft fonts has made support for proportionally spaced fonts a requirement for the top systems. No first-class word processing program can compete without support for at least the Hewlett-Packard-compatible set of proportionally spaced fonts. Many programs support Postscript fonts as well.

Once a vendor agrees to support proportionally spaced fonts, a whole new set of challenges emerges, for most programs do not show the fonts accurately (in WYSIWYG). Consequently, the next area of competition is in page preview. Here the objective is to draw an exact replica of the printed page on a graphics screen, so you can see just how the proportionally spaced text will appear. Complexity, sophistication, and speed represent areas of major competition.

Another point of contest is hardware support. With the proliferation of add-on boards for expanded memory, the continuing proliferation of specialized printers, and the variety of monitor and display standards, word processing programmers work diligently to support the largest number of devices in ways that make owners of expensive peripherals want to use their word processors to take advantage of a feature. However, if a program has goodies that can be appreciated by only the

select few who own 23-inch color monitors, for example, the effort is largely wasted. So each word processing designer looks for ways to use and support the graphics standards of Hercules, Hercules Plus with Ram Font, CGA, EGA, VGA, and special large monitors such as the Genius monitor. They also often find ways to usefully exploit extra memory beyond the standard 640K for RAM disks, more text in memory, and faster response.

Finally, there is the graphics explosion. As word processing comes to share features related to desktop publishing and gain powerful layout control including that over newspaper columns and the capability to handle multiple fonts per document, the pressure to include graphics in the word processing toolkit becomes irresistible. We expect most word processing programs to have powerful graphics similar to those of Word Perfect 5.0 or Wordstar 2000, for example, as standard features within the next year.

Graphics will be integrated into the program, not implemented through an add-on program, permitting import of a range of graphics formats from drawing programs or spreadsheets. Also included will be tools to scale, rotate, and edit the image and provide the capability to flow text or columns around a graphic image. All of these are available in one or more of the products included here, but the smooth integration of graphics will probably require one more generation for the market leaders and perhaps two more generations of revisions to become seamless and standard.

Of course, with the advent of even more sophisticated printers and displays and the proliferation of very large memory spaces (more than 1 megabyte) and very fast processors, we may find that before long we will all be editing in graphic modes with the kind of speed now available on a standard text screen and with the accuracy of representation characteristic of the best static page previews available today.

It will be lots of fun.

DEFINITION: Florida. **Word:** **study.** **Meaning:** At its most elemental, area studies represents the combination of academic interests from many disciplines and schools focused on a particular area or subject. Area studies, almost by definition, are studies that cannot be encompassed within the methodological, subject, or disciplinary limits of traditional university academic units. Hence, to achieve the intellectual benefits of area studies, most universities launch programs or centers charged with the task of combining the resources and creating the collaborative program.

Within this context, the State University System of Florida has two types of area studies: international and domestic. This distinction is

studies

noun, plural of study: a focusing of the mind on something

- | | | |
|-------------------|-------------------|----------|
| 1) attention | 2) considerations | 7) heads |
| 2) applications | 5) debates | |
| 3) concentrations | 6) deliberations | |

Enter Number for Replacement. ESC - Exit Thesaurus. ALT-T - Look Up New Word. FCMN - Next Meaning. FCMR - Prior Meaning. S:1 N:1

The Multimate Advantage II thesaurus is a very good one, providing ample suggestions and including synonymous definitions.

automatic page breaks when entering text for the first time, pagination is not dynamic, so when you insert text in the middle of a page, Multimate does not automatically adjust the page break but requires a separate repagination process.

Multimate's editing commands include most of the essentials. It also handles foreign language characters, has an extensive keyboard macro facility, includes a phrase/document assembly library, has fine mail-merge and forms handling capabilities, and includes an add-on data file manager (On-File). Sorting, math, spelling, thesaurus, and footnotes, combined with the capability to handle newspaper and parallel columns, make this a strong office product.

Feature for feature, Multimate Advantage II falls easily within the top group of office/professional word processors including programs such as Samna IV, Word Perfect, Wordstar 2000, Microsoft Word, or Office Writer 5. Yet Multimate can only handle documents of 128K or less, so for long reports Multimate is less effective than other programs in its class.

Pagination not only requires a separate action to change or readjust edited text but requires multiple actions if you have more than one page length specified in the document. Multimate does not support indexing, has no windows, and cannot show margins in inches.

Basic editing features include strong cut and paste, tabs, and paragraph formatting facilities, although there is no windowing. Date stamping is available, and we rate basic editing good overall. Formatting, however, is poor according to our criteria, with no support for multiple document views, although the standard multiple columns and widow/orphan control are supported. Fonts receive a satisfactory score with changeable fonts and support for super/subscripting. Style sheets also rate a satisfactory, since styles are stored but not named.

The spelling checker and thesaurus earn a very good rating with ample suggestions and an automatic global replace feature. Synonymous definition of words is also supported.

Multimate is commonly used for mail-merge work, and it reformats merged text, skips bad records, and accepts other file formats such as from Dbase. We rate mail merge good.

Multimate's outlining capability is rated satisfactory, producing only a basic written outline with automatic numbering and subsections; bulleting is also offered. There is no interaction between a document file and the outline. Table of contents and indexing is rated poor, with

no indexing support at all. You can include multiple levels when generating a table of contents.

Footnoting allows footnotes, endnotes, and auto-superscripting, and we rate it satisfactory. A good macro facility records keystrokes and stores them in separate files and supports user-prompted information. Graphics are available only as an option; rating a poor, the resident program's graphics support only line and box drawing.

Printer support is good with strong support for many printers and a number of soft fonts. Compatibility is excellent, with the basic ASCII and DCA/RFT files supported in addition to several other formats, such as Wang, Wordstar, Navy DIF, and others.

Multimate was slow compared to its competitors. Its import of ASCII and DCA/RFT files and its manual scrolling through a document were both very much slower than other products, and as a result we must rate speed poor.

Multimate leaves no doubt about its documentation. The distribution package makes a stack over five inches thick, including three reference manuals and five minimanuals on various subjects. There is a reasonably full on-line help system as well as drop-down menus. Taken together, the voluminous but well-

PRODUCT SUMMARY

Multimate Advantage II

VERSION 1.0

Company: Ashton-Tate, 20101 Hamilton Ave., Torrance, CA 90502; (213) 329-8000.

List Price: \$565, 5¼-inch version; \$595, 5¼-inch and 3½-inch together.

Requires: IBM PC or compatible; 384K of RAM; DOS 2.0 or later; hard disk recommended.

Pros: Full-featured; Wang emulation; data file management; form letter and mail list management; relatively easy to learn; fine documentation.

Cons: Clumsy pagination; no indexing; documents limited to 128K; no window onto second document; poor error messages; less effective with complex/large documents.

Summary: A full-function, office/professional word processor, Multimate has nice editing facilities, outstanding printer support, and great documentation. It is easy to learn and use and does most things high-end word processing requires. It is an especially good choice for the Wang-oriented office.

Nota Bene's scholarly features useful in an academic environment include support for multilingual word processing and keyboards.

indexed manuals and the effective on-line help earn Multimate Advantage II a very good documentation rating.

Multimate is reasonably easy to learn. The pull-down menus are a major convenience for new users, and the on-line help keeps the novice generally well-oriented. Still, this is a big, complicated product, and it takes all but the most expert user some time to get up to speed. We rate ease of learning good.

Once learned, Multimate is easy to use. Its editing is quick and effective; its formatting and other commands can be invoked through command-key sequences that, once learned, are easy to use. Its menus are less important for experienced users but are always available for infrequently used functions. However, the need to repaginate for correct page breaks and the incapability of some functions to cross page boundaries detract slightly from the program's ease of use. Overall, we rate Multimate's ease of use very good.

Multimate supports two kinds of error corrections. Its Undo command is multi-level, storing deletes in a buffer one after another. You can undo deletions of anything from a character to a block. The amount that can be undone depends on how much was deleted each time, but at the least, two or three deletes can be handled. In addition, Multimate has a recovery function to recover a lost page or a corrupted file. However, the recovery feature is not entirely reliable (as the manual explains) and may not always recover lost pages. Because of the many options, Multimate's error handling earns a very good score.

Multimate provides a multilayered support system. For the first 90 days you get free telephone support, provided you send in the registration card, and you get one free call before the card arrives. After the 90 days you can continue to get limited support by subscribing to an extended support plan. The fee schedule has four levels, from \$50 to \$100 per year for a variety of services including 10 to 20 support calls per year. None of this is on a toll-free number. There is a newsletter and bulletin board support. We rate support policies good.

When we called technical support, we received reasonable answers and a quick response time. We rate technical support good.

Multimate has solid functionality, a user interface with pull-down menus, and extras such as an on-file system. But it lacks some now common features such as graphics support and indexing, and the limitations on file size and clumsy pagination detract from the product's overall effectiveness. At \$565, Multimate

is somewhat less effective than Word Perfect 5, Microsoft Word, or Samna IV and close to Office Writer 6 with which it shares the Wang-style user interface. We rate value satisfactory.

Nota Bene

VERSION 3.0

In addition to containing most features found in an office/professional word processor, Nota Bene is chock-full of features for scholarly and academic use, such as three levels of footnoting, five built-in style manuals, alphabetized bibliographies, and three three-level indexes.

Built on the platform of Xywrite III Plus (not including the A La Carte Menus), Nota Bene has bidirectional cross-referencing, multilingual keyboards, a very nice, fully integrated free-form text database (similar to Zymdex), and a useful menuing system. It supports math, side-by-side columns, limited newspaper columns, sorting with user-defined sort sequences, and keystroke macros.

However, the program will not handle graphics inclusion except through print files, and you cannot preview the page as printed, other than just the basic type which does not show proportional spacing correctly.

Like Xywrite, Nota Bene offers a nearly incredible array of customization options that permit you to change it in a variety of ways, although making the changes requires considerable expertise.

Basic editing includes fine tab control, fully implemented cursor control, and strong paragraph formatting facilities. We rate basic editing very good.

Formatting capabilities are rated satisfactory with multiple columns support, selectable portrait/landscape modes, and true widow/orphan control, although there are no multiple views supported. Font support is satisfactory, with changeable fonts and support for super/subscripting. Style sheets receive a good rating, with the capability to store named styles.

The spelling checker and thesaurus have ample and good suggestions, along with multiple-user dictionary support in the spelling checker. We rate the spelling checker and thesaurus satisfactory.

Nota Bene's mail merge can skip bad records and reformat merged text and is enhanced by the inclusion of the capability to redefine field separators. A variety of programming capabilities are available, and we rate the mail-merge features good. Outlining is good with paragraph numbering, very basic support for expanding/

collapsing, and viewing from separate windows.

Table of contents and indexing are good, with multiple levels supported. Footnotes are also good, featuring user-definable formatting.

Macros can store commands in a separate file, including conditionals and user-prompted variables. The keyboard is reprogrammable. We rate macros very good. There is no graphics support except to include a printer-ready graphics file when printing or to draw ASCII characters; we rate graphics poor.

Printer support is very good, with a variety of printers supported. File compatibility includes the basic formats and a few others, including Wordstar. Wordstar compatibility, however, does not support dot commands commonly used to format Wordstar text. We rate compatibility good.

Based on Xywrite, Nota Bene is faster than a hockey puck on an oil slick. It closely matched Xywrite and was faster than all the other packages reviewed; we rate speed excellent.

The documentation for Nota Bene is comprehensive, clear, and voluminous. It covers all the angles, a necessity for a powerful and complex office/professional word processor. We rate documentation very good.

Ease of learning, however, is another issue. The tutorial is acceptable, and the menu system (which is nicer than Xywrite's A La Carte Menus) with helps provides considerable assistance to the novice. But the complexity, power, and design of this product make it something of a challenge to learn, and on balance we rate ease of learning satisfactory.

Nota Bene is much easier to use than to learn, although even for experienced users producing complex documents can take quite a bit of work. The menus and help screen contribute to ease of use, but the program's flexibility and power often appear to overwhelm its design. Once you tame the beast, you'll find Nota Bene extremely customizable and capable of tackling the toughest word processing jobs with academic finesse. With flexibility and strength combined with considerable complexity, ease of use earns a very good score.

While you can make a lot of mistakes in Nota Bene (especially due to its complexity), it is difficult to lose text. However, since you can access most DOS

functions from within the program (a nice feature), be careful not to inadvertently edit a printer or other control file. Most of these errors are easily recoverable but do cause a lot of grief. There is a one-level undelete function, although it does not support single characters. We rate error handling satisfactory.

Support policies are very good, including the norm of unlimited but not toll-free support. Registered users get a regular newsletter, which is helpful. There is a product usability warranty, and extended support is available. We rate technical support good, with a quick response time and more than adequate answers to our questions.

At \$495, Nota Bene rates a qualified very good score in value. If you need the kind of customizable power available in Xywrite and the exceptionally specific and useful academic features of Nota Bene, then this product is certainly worth your attention. If you don't need these extras, look to one of the competitors.

Office Writer

VERSION 6.0

Office Writer's Wang/Multimate imitation places it in the page-processing class of word processors, requiring manual repagination. Yet it performs as easily as

most document-processing packages and offers several advantages over Multimate, its primary competitor. Office Writer's menus and keyboard closely emulate Wang terminals, and in environments where dedicated Wang systems coexist with PC-based word processing, this emulation makes Office Writer an obvious choice. Office Writer was recently acquired by Software Publishing Corp., makers of Professional Write and PFS: First Publisher.

Office Writer contains strong laser printing capabilities and supports up to 60 resident fonts. Office Writer handles Postscript, and word wraps and page breaks are accurately represented on-

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THE OUTSIDE

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PRODUCT SUMMARY

Nota Bene

VERSION 3.0

Company: Dragonfly Software, 285 W. Broadway, Suite 600, New York, NY 10013; (212) 334-0445.

List Price: \$495.

Requires: IBM PC or compatible; 512K of RAM; DOS 2.0 or later; two floppy drives; hard disk recommended.

Pros: Powerful program with special tools for academics; fine foreign language support; superior text base; very programmable/customizable; lightning fast.

Cons: Weak on graphics and newspaper-style columns; somewhat complex to learn; no preview.

Summary: Based on Xywrite, Nota Bene has powerful enhancements for academic word processing. Customizable and programmable, it has ready-made formats for academic writing and a truly superior text base, although it can be a little too complex for standard office word processing.

screen for viewing.

The program includes a separate memory resident program for keyboard macros (which can also be used with other programs and DOS), and mail merge and form letters are fully supported with variables, sorting, and selecting. A math module handles row or column calculations. There is a document search facility as well.

The program's superior graphics preview system illustrates what the final document will look like and includes scaled font sizes and a zoom feature that includes rulers that expand with the zoom. The program operates in memory with a file size limit of 304K.

Basic editing is rated good with special strengths in cursor moves, cut and paste, date stamping, and tabs, although there is no windowing supported. Formatting includes on-screen multiple columns and multiple views as well as portrait/landscape printing. We rate formatting satisfactory.

The changeable fonts receive a satisfactory score, including super/subscripting support. There are no style sheets.

The spelling checker and thesaurus have ample suggestions and can globally replace text. The thesaurus offers definitions, antonyms, contrasted words, and related and compared words. We rate the spelling checker and thesaurus features

very good.

Mail merge is also very good, with templates and a feature that lets you correct a bad record, along with user-prompted information and conditionals. Outlining is rated satisfactory, with just a basic facility letting you construct a simple outline with up to seven levels. The table of contents and indexing feature lets you index through multiple files. We rate tables of contents and indexing good. We rate footnotes good, with a footnote window available and either footnotes or endnotes supported.

There is strong macros support, with a separate memory-resident utility that records and stores keystrokes and com-

PRODUCT OVERVIEW

Office Writer

VERSION 6.0

Company: Software Publishing Corp.,
1901 Landings Drive, Mountain View,
CA 94039; (415) 962-8910.
List Price: \$495.

Requires: IBM PC or compatible: 384K
of RAM; DOS 2.0 or later; two floppy
drives; hard disk recommended.

Pros: Wang emulation; easy to learn;
nice forms management features; fine
preview feature.

Cons: Not as effective with larger docu-
ments; occasional clumsy feature imple-
mentations; graphics available only as
an option.

Summary: A great choice for Wang-or-
iented offices, Office Writer provides
strong basic word processing capabili-
ties, although it is less effective with
longer documents or tasks requiring ex-
tensive formatting.

mands with the capability to reassign
function keys. We rate macros very good.

Graphics support is poor, limited to
line and box drawing. True graphics
support requires an optional package
(Office Graphics, \$145). But printer
support is very good, with Postscript, HP
soft fonts, and all Laserjets easily man-
aged, among others. Compatibility, like-
wise, is very good and includes ASCII,
DCA/RFI, a nice variety of other text
formats such as Multimate, Wordstar,
and Wang. As far as benchmark times go,
Office Writer did well overall and earns a
good score in speed.

The satisfactory documentation in-
cludes specialized guides and learning
booklets as well as a main manual.
Examples and explanations are generally
well-done and complete, and on-screen
help is effective, although not entirely
comprehensive. We rate documentation
satisfactory.

The highly structured menus and help
screens make Office Writer very easy to
learn. We rate the program very good in
ease of learning. Given the features for
form letters, databases, mail merge, and
the like, ease of use is still strong. There is
a decline in effectiveness as maximum
document size is approached, but Office
Writer is generally easy to use and we rate
ease of use good.

Error handling is good, enhanced by a
timed backup feature. Unfortunately, the
one-level undo is weak and permits
deleted text to be lost if the cursor is
moved before the undelete is invoked.

Support policies for Office Writer are
rated good, including unlimited but not
toll-free telephone support. There is a
newsletter, and extended support is avail-
able. Technical support is very good with
quick access, competent answers, and a
staff that goes out of its way to help.

Given its strengths and capabilities, at
\$495 Office Writer falls in the middle of
the pack and represents a good value.

PC Write

VERSION 3.82

One of the classic user-supported pro-
grams, PC Write has had a remarkable
evolution growing and improving
through successive editions until in its
current incarnation it rivals many high-
powered products sold at a much higher
price. We recently reviewed an earlier
version of this shareware product as an
executive word processor (see product
comparison, September 26, 1983, Page

digital

IBM

Display PostScript is already the graphics standard for a new generation of computer and workstation displays from these manufacturers.

Computers and workstations with the Display PostScript system deliver a variety of screen resolutions in black & white, grayscale and color.

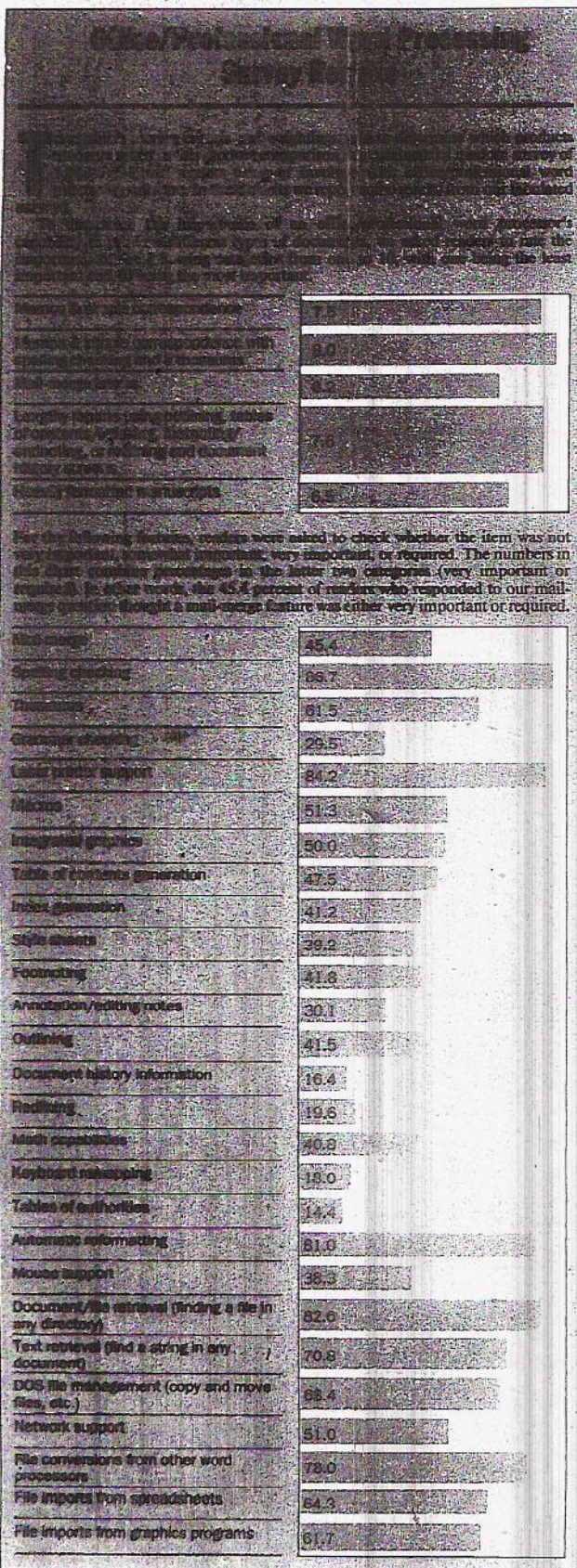
Taking advantage of enhanced software portability, applications with greater power and potential are already emerging to support Display PostScript.

THE INSIDE

Introducing Display PostScript™ from Adobe. With the same imaging standard and language used in PostScript printers, this system software module is now in computer and workstation displays. And because it's transparently integrated over a variety of operating systems, Display PostScript is your key to hardware compatibility and software portability.

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ADOBEE



43), but its enhancements and robust features set now qualify it for the office/professional category.

PC Write shares many characteristics with its somewhat higher-powered Xywrite and Nota Bene counterparts. It actually consists of two primary modes, an editor and a print formatter. Formatting commands are embedded into the text and then acted on by the formatter when printing. The consequence is a somewhat less effective representation of the printed page while editing, but generally fast and effective editing.

PC Write, in this version, has increased its document size well beyond the previous 60K limitation to use all memory in the system up to 640K. Document size can vary, depending on what else uses memory in the system. This version also supports multiple parallel columns on-screen and context-sensitive help. The preview and graphics features can only be accomplished with third-party utilities. The spelling checker is improved, page breaks are improved, you can use two editing windows in the same or different files, and keystroke macros add to the program's effectiveness. There is, however, no support for sorting, hyphenation (soft hyphens are supported), or a thesaurus. Automatic snaking newspaper columns are not supported, although there can be one footnote series and an almost infinite series of numbered lists. Table of contents and index files reside in separate files and the index can be used with a concordance listing.

The program is customizable and, like Xywrite, takes a lot of expertise to use effectively. Printer support is very strong.

PC Write's basic editing capabilities have a variety of powerfully implemented features such as tabs, status lines, date stamping, paragraph formatting, copy and paste, and search and replace. We rate basic editing very good.

Formatting isn't quite as strong, however, lacking multiple views and portrait/landscape support (you can define portrait/landscape on Laserjet printers). There is multicolumn support and orphan (but not widow) control. We rate formatting satisfactory. The changeable fonts rate satisfactory with support for super/subscripting. Style sheets rate no higher than poor, since you store the document ruler and formatting commands for the entire document in a separate file.

PC Write's spelling checker and thesaurus are poor, primarily due to the lack

of a thesaurus. The dictionary is quite nice (although it only contains 50,000 words), multiple dictionaries are supported, and the global replace feature is very fast. There are ample suggestions provided.

Mail merge is good, accepting files from database systems such as dBase and supporting user-prompted programming. We must rate outlining poor, since the only way to create an outline is using the automatic numbering feature or the table of contents. Table of contents and indexing, however, are good with multiple indexes and tables of contents possible. Cross referencing is supported.

Footnotes can be used as endnotes, and user-definable formatting and on-screen numbering is available; we rate footnoting good. We rate macros very good, with the capability to record commands as they are typed and store the results in a separate file. Shortcuts, a reprogrammable keyboard, and reassignable function keys are all possible.

Although there is no graphics support, very good printer support includes soft fonts and Postscript printers. Compatibility is no higher than satisfactory, however, with only ASCII and limited Wordstar conversions possible. DCA conversions are available free from the vendor upon registering (and paying for) the product.

In our speed tests, PC Write turned in a strong performance but not as fast as Nota Bene, Xywrite, or Word Perfect. It was very quick in searching for a single word, jumping to the bottom of the document, and saving and appending a file. We rate speed good.

Documentation for PC Write 3.02 is very good, although the complexity of the product requires careful study to take advantage of all its features. The on-line help includes a series of full-screen displays covering major topics and features. It is indexed nicely.

PC Write 3.02's ease of learning is rated good, although learning the more esoteric features of the program can be heavy going. The immense customization possibilities can bog down the uninitiated.

Ease of use is good, thanks to the improved menus and help screens and the increased features and functions. Once you get up to speed, using PC Write will become very natural.

Error handling is good, with options for saving documents based on a timed backup or the number of characters typed. There is no true Undo, but there are Undelete and Unreplace commands.

Support policies include frequent updates, a newsletter, and a 90-day refund if not satisfied. Technical support lasts one year, after which additional plans are available at cost. No support is provided without a registration number, since this is shareware, although installation and tutorial printing advice is offered to give potential users the chance to try out the program. Support policies rate very good.

Technical support for the product is very good. The Quicksoft staff is friendly and helpful, doing as much as they can to answer our questions quickly and expertly.

At \$89 (registration fee), PC Write 3.02's value is excellent due to the low price and strong performance, although the program is not as powerful as the strongest office/professional competitors. For the \$89, you get the software, manual, one year of technical support, a discount for third-party catalog products, and two coupon good for utilities, updates, or source code. As a shareware program, however, Quicksoft has done a remarkable job marketing PC Write. Its surprisingly large corporate market share is evidence of its quality.

PRODUCT SUMMARY

PC Write

VERSION 3.02

Company: Quicksoft Inc., 219 First Ave. N., No. 224, Seattle, WA 98109; (800) 888-8088, (206) 282-0452.
List Price: \$89.

Requires: IBM PC or compatible; 384K of RAM; DOS 2.0 or later; one floppy drive; hard disk recommended.

Pros: Generally fast, in-memory editor, strong printer support; good formatting; great parallel columns; inexpensive; fine user support; can easily be run from floppy disks; very customizable.

Cons: Missing some high-end features such as a sort facility, newspaper columns, a thesaurus, and a preview.

Summary: A powerful, low-cost shareware program with many useful features and a quick and effective editor; requires considerable user expertise; missing some features but overall an admirable program.

"Error handling rates very good, thanks to an automatic timed backup and mandatory prompts on quitting."



Samna Word IV

VERSION 2.02

This high-end word processor, derived from a dedicated word processing model, competes with Multimate, Office Writer, and DisplayWrite with features that match market leaders such as WordPerfect, Microsoft Word, or Wordstar 2000. Highly structured and menu/function key-driven, Samna offers good support for common office tasks such as correspondence and forms processing. Samna Plus, a separate version, includes a compact integrated spreadsheet.

Version 2.02 includes document preview, a thesaurus, proportional spacing for fonts, improved graphics printing, table of authorities, and other enhancements. There are two windows, hyphenation, formula support, good math, and a useful sort facility.

Samna's preview helps you to see what proportionally spaced fonts will look like when printed and has three magnification levels. The product remains particularly strong in forms management and list

processing, although it still does not have conditional selection criteria for mail merge. You can, however, select a subset of records, although the selection is somewhat limited.

We rate basic editing very good, with strong cut-and-paste capabilities, extended cursor moves, nice tab support, and strong paragraph reformatting. You can view a second file on-screen, and there is date stamping. Formatting is also good, with columns (that vertically balance), multiple views, and true widow/orphan control. Font support is satisfactory, with changeable fonts and super/subscripting. The preview feature helps in viewing fonts. Style sheets can be stored on disk and earn a satisfactory score.

Spelling checking and thesaurus support is rated very good, with support for user dictionaries, synonyms, and contrast-related, and compared words.

The mail-merge feature reformats paragraphs, loads templates, accepts conditionals, and uses external database files. We rate mail merge very good. The outlining capabilities are satisfactory.

PRODUCT SUMMARY

Samna Word IV

VERSION 2.02

Company: Samna Corp., 5600 Glenridge Drive, Atlanta, GA 30342; (800) 831-9679, (404) 851-0007.

List Price: \$595 (\$695 for Samna Plus, which includes a spreadsheet).

Requires: IBM PC or compatible; 512K RAM; DOS 2.0 or later; hard disk recommended.

Pros: Strong complement of features, especially forms, mail merge, math, and thesaurus; effective preview feature.

Cons: Somewhat slow, less effective on-line help; clumsy font management; limited phone support.

Summary: A little more expensive than its competitors, Samna is a good choice if you have a user base familiar with the product or you do lots of forms processing and printing. Not recommended for longer documents or complex formatting tasks with fonts.

WordPerfect 4.1/4.2/5.0

Microsoft Word

MultiStar

WordStar

WordPerfect 3.4

DisplayWrite 3.4

WordStar

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WordPerfect 3.4

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viewing of a second file. We rate basic editing very good.

Formatting is another story, however. While multiple columns and portrait/landscape documents are supported (both considered standard), there are no multiple page views (except in the page-preview mode), and there is no widow/orphan control. As a result, we rate formatting capabilities poor. Changeable fonts include super/subscripting support; we rate fonts satisfactory. Style sheets also receive a satisfactory score, with the capability to store select styles; up to 200 styles can be captured for a single document.

The spelling checker and thesaurus features are satisfactory, with case-sensitivity, a custom user dictionary, and nice suggestions.

We rate Total Word's mail-merge feature good, with support for fill-in forms and all the standard features. Outlining is not supported, and the table of contents and indexing features receive a satisfactory score with support for one subtopic and simple cross-referencing. Footnotes receive a good score with support for either footnotes or endnotes in a document and a windowing entry

method. On-screen numbering of footnotes is also supported.

We rate macros satisfactory, with the capability to store macros in a separate file.

Graphics support in Total Word is poor, with no support for integrating PCX or PIC files. You can draw basic line styles as well as boxes with some fill capabilities.

Printer support is very good, managing Postscript files and including various soft fonts. However, we must rate compatibility poor since you must request special software from the manufacturer to import files (more than two at extra cost).

Total Word is speedy overall, except the global document reformatting time was slow due to the need to alter rulers manually during repagination. We rate its speed good.

Total Word has very good documentation overall, but users must refer to an included booklet addendum to match 1.2 features or to correct misprints. The on-screen tutorial and printer booklet are both very nice additions.

Total Word is very easy to learn — easiest in its class — and ease of learning is rated excellent. Total Word is also very easy to use, utilizing an effective user interface with control and function keys exploited to their fullest. Some text markings are rather cryptic, but overall the product is optimized for simplicity. As a result, we rate Total Word's ease of use very good.

Error handling is satisfactory. Total Word traps most errors although the Undo command can't handle block deletes.

Support policies are very good, including a 60-day money-back guarantee and a regular newsletter. The company has an unlimited, but not toll-free, phone line.

Technical support is rated good, a big improvement over recent inaccessibility problems. The staff was helpful and knowledgeable.

Total Word is a good value at \$495. Less powerful and flexible than Word Perfect 5.0 and Microsoft Word 4.0, Total Word is nevertheless an effective performer and should be of particular interest to those who need to embed equations into their text.

Word Perfect

VERSION 5.0

As the market leader, Word Perfect has continued to fend off assaults from revised versions of its competitors. Word Perfect 5.0 includes a host of new features, significant improvements in performance, and rewritten documentation. Flexible, strong, and quick, Word Perfect 5.0 is the program of choice for office and professional word processing.

Its features list matches and often exceeds other systems with only a few exceptions. Laser printer support for desktop publishing-type activities is very good; newspaper columns are effortlessly created, edited, and mixed with other kinds of text; and a graphics print preview shows exact representations of the printed text in true WYSIWYG fashion. Word Perfect 5.0 has a nice list of graphics handling capabilities, including the capability to import a wide range of graphics files and manipulate them within the text.

Keyboard macros include keystroke capture as well as a variety of programming constructs, including if-else, variables, case statements, and the like.

Basic editing includes strong implementations of cut, copy, and paste, and cursor moves, tabs, and paragraph formatting. Multiple files can be edited, and date stamping is available. We rate basic editing very good.

Formatting is also rated very good, including multiple columns on-screen, true widow/orphan control, WYSIWYG page view, and vertical balance control of columns. You see font codes on-screen and you can have fonts on-screen with a Hercules RAM font card. Super/subscripting is supported. We rate fonts good. Style sheets are also rated good, with the capability to store named styles and support for style libraries.

The spelling checker and thesaurus receive a good score, boosted by multiple user-dictionary support, large spelling and thesaurus dictionaries, and an ample list of suggested words. Replaced words retain their capitalization. The mail-merge features meet our basic requirements, skipping bad records and reformatting paragraphs, but also supporting

user-prompted fields and programming with conditionals. Word Perfect 5.0 can also merge several types of database files. The extras earn mail merge a good score.

Outlining is rated good, using separate windows and bullets. The table of contents and indexing facilities are very good and include multiple styles, multiple levels, multiple documents, and concordance file indexing.

We rate footnotes good, with support for both footnotes and endnotes in the same document and user-definable formatting. We rate macros very good, with commands, keyboard shortcuts, conditionals, and user-prompted variables.

Graphics are very well-implemented. A wide range of graphics files are supported, and substantial graphics editing and previewing are possible as well as the capability to draw a variety of lines. Graphics can be shaded, and objects can be rotated by degree. We rate graphics very good.

Printer support is excellent, with a host of printers supported, including all HP and Postscript printers and soft fonts. (Bitstream fonts are free upon request.) Compatibility is excellent as well, with a wide range of supported file conversion types.

Word Perfect 5.0's speed is rated very good. Most of the word processors performed in the "good" speed range and Word Perfect was slightly faster than the rest of the pack, though slower than the whiz-kids, Nota Bene and Xywrite.

Documentation includes a comprehensive reference guide, technical appendices, and a full index. A Word Perfect workbook adds a host of illustrations and examples and serves as a tutorial guide. A printer manual is an extra cost option, although a printer modification program is included and can be used by advanced intermediate users. On-line documentation remains exceptionally good. We rate documentation very good.

Easy to learn and teach, Word Perfect is forgiving of errors and contains an interactive on-line tutorial. Some users, however, are intimidated by the sheer size of this feature-rich program. We rate ease of learning very good.

Ease of use is excellent, thanks to the program's great flexibility and large number of tools at your fingertips. Macros and improved handling of menus enhance ease of use.

Word Perfect's excellent error handling includes timed backup, optional auto-save, and quick-save features. The

PRODUCT SUMMARY

Total Word

VERSION 1.2

Company: Lifetree Software Inc., 411 Pacific St., Monterey, CA 93940; (800) LIFETREE, (800) 831-9733 in CA.

List Price: \$495.

Requires: IBM PC or compatible; 480K of RAM; DOS 2.0 or later, DOS 3.0 recommended; hard disk.

Pros: Enhanced laser printing support; very easy to learn and use; generally full complement of features; much faster than previous versions.

Cons: Limited list processing and file import capabilities; no outlining.

Summary: Easy to learn and use, Total Word offers enhanced features and printer support and is appropriate for offices that have moderately demanding word processing requirements.

BENCHMARKS

Office/Professional Word Processors

	Summa Word IV 2.0	Sprint 1.0	Total Word 1.2	Word Perfect 5.0	Wordstar Professional 5.0	Wordstar 2000 Plus 3.0	Xywrite III Plus 3.52
File							
Load	3	4	8	2	1	2	1
Save	Varies	3	6	4	7	3	2
Import ASCII	79	16	9	Varies ¹	2	174	<1
Export ASCII	30	20	5	8	22	85	30
Import DCA/RFT	49	61	N/A ²	20	N/A ²	101	6
Cursor movement							
Top to bottom	<1	1	2	2	3	varies	3 ³
Manual scroll	51	79	33	45	62	36	97
Reformat	86 ⁴	21	152 ⁴	20 ⁴	32	38	3
Search							
Last word	76	4	3	2	4	5	<1
Global replace	82	19	12	6	11	13	1
Append file	16	2	4	1	3	2	<1

Time in seconds, unless otherwise noted.

¹Word Perfect's import ASCII score varied from 8 to 15 seconds.

²Does not import DCA/RFT files.

³Subsequent jumps in Xywrite were less than one second.

⁴Could not globally alter rulers/style sheets. Score indicates the time required to alter each ruler/style sheet individually.

INFO WORLD

PRODUCT SUMMARY

Word Perfect

VERSION 5.0

Company: Word Perfect Corp., 1555 N. Technology Way, Orem, UT 84057; (801) 225-5000.

List Price: \$495.

Requires: IBM PC or compatible; 256K; DOS 2.0 or later; hard disk recommended.

Pros: Powerful features and fine performance; easy to learn and use; great graphics support.

Cons: Can be intimidating to novices; occasionally clogged technical support lines.

Summary: Powerful, full-featured, and graceful, Word Perfect 5.0 leads the pack with an outstanding combination of power and ease of use. Particularly strong in complex text management tasks and complicated documents, it works equally well for short memos and casual correspondence.

Undo command recovers from three levels of deletes. In the months since Version 5.0 was issued, a reasonable number of minor bugs and one or two major bugs have been discovered and corrected.

Support policies are excellent with toll-free unlimited support 11 hours a day, an unlimited money-back guarantee, bulletin board support, and a regular newsletter. Any user can request the latest version of the program with minor bug fixes included, and the company responds very quickly to identified problems. It also responds quickly to suggested enhancements to the program that do not involve a major rewrite.

Word Perfect is to be admired for its efforts in technical support; of the 1,000 or so employees, more than half the staff works in technical support. While in general Word Perfect's technical support is the finest in the business, there is still difficulty getting through to a technician (although accessibility has improved tremendously from last year), due to the unusually high sales of this revision. We had to call several times, but when we connected, the support was nothing short of top-notch. Because of the occasional difficulty getting through, we rate technical support very good.

An excellent value at \$495, Word Perfect 5.0 offers superior performance and a full complement of features ideally suited for office and professional use.

Wordstar Professional

VERSION 5.0

Recognizing the importance of the large installed base of original Wordstar users, Micropro's Wordstar Professional maintains the original control-key commands. But the original core of features has been spectacularly augmented and the dot commands expanded. In addition, Professional 5.0 adds pull-down menus for those not interested in the classic commands.

The most impressive feature of this edition is a page preview system capable of displaying more views of a document than any of its competitors, up to 144 on some systems. Combined with magnification, fonts, proportional spacing, and grid marks, this is the best page preview in the business.

Other enhancements include add-on programs for outlining, telecommunication, a mail-list utility, and a finder shell for file management. There is a date/time facility, simple macros, good block opera-

tions, sophisticated math capabilities, and sorting. Newspaper columns are supported up to eight wide, and all measurements are in inches.

On the down side, there are no graphics, multiple lists, or alternative keyboards, and the newspaper columns operate clumsily.

Basic editing includes good cursor controls, redefinable tabs, and good paragraph formatting. The program will edit two files at a time, and there is a date stamping facility. We rate basic editing capabilities very good.

Wordstar's new WYSIWYG page preview feature is really fantastic — better than any other. In general, though, the Wordstar formatting capabilities are average with standard support for multiple columns and portrait/landscape documents. Boosted by the page preview, formatting is good. Changeable fonts include super/subscripting. Style sheets earn a poor score, with support only for storing the ruler. The spelling checker and thesaurus offer ample suggestions and global replacements, and we rate Wordstar's features good.

Mail merge is rated good with conditionals and user-prompted information, although there is no error checking during a merge. Outlines can be format-

PRODUCT SUMMARY

Wordstar Professional

VERSION 5.0

Company: Micropro International Corp., 33 San Pablo Ave., San Rafael, CA 94903; (415) 499-1200, (800) 227-5609.

List Price: \$495.

Requires: IBM PC or compatible; 384K of RAM (512K needed for page preview feature or PC-Outline); DOS 2.0 or later; two floppy drives; hard disk recommended.

Pros: Powerful features and very good performance; nice laser support; spreadsheet integration capabilities; hands-down best page preview in the business.

Cons: Some clumsy operation with newspaper columns; no graphics integration; limited compatibility with other word processors.

Summary: Maintaining the characteristics that endear the product to so many users, this update of the classic Wordstar greatly expands features while eliminating most defects. It is a contender in word processing.

REPORT CARD

INFO WORLD

Office/Professional Word Processors

	(InfoWorld weightings)	(Your weightings)	Displaywrite 4 1.0	Lotus Manuscript 2.0	Microsoft Word 4.0	Multimate Advantage II 1.0	Nota Bene 3.0	Office Writer 6.0	PC Write 3.02
Price			\$495	\$495	\$450	\$565	\$495	\$495	\$89
Performance									
Basic editing	(50)	()	Poor	Very Good	Very Good	Good	Very Good	Good	Very Good
Formatting	(25)	()	Poor	Good	Satisfactory	Poor	Satisfactory	Satisfactory	Satisfactory
Fonts	(20)	()	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Style sheets	(20)	()	N/A	Good	Very Good	Satisfactory	Good	N/A	Poor
Spelling checker & thesaurus	(50)	()	Poor	Good	Satisfactory	Very Good	Satisfactory	Very Good	Poor
Mail merge	(25)	()	Good	Good	Good	Good	Good	Very Good	Good
Outlining	(20)	()	Good	Excellent	Very Good	Satisfactory	Good	Satisfactory	Poor
TOC & indexing	(20)	()	N/A	Good	Good	Poor	Good	Good	Good
Footnotes	(20)	()	Good	Good	Good	Satisfactory	Good	Good	Good
Macros	(25)	()	Good	Good	Very Good	Good	Very Good	Very Good	Very Good
Graphics	(30)	()	N/A	Very Good	Satisfactory	Poor	Poor	Poor	N/A
Printer support	(80)	()	Poor	Very Good	Very Good	Good	Very Good	Very Good	Very Good
Compatibility	(40)	()	Satisfactory	Very Good	Satisfactory	Excellent	Good	Very Good	Satisfactory
Speed	(50)	()	Satisfactory	Good	Good	Poor	Excellent	Good	Good
Documentation	(100)	()	Good	Excellent	Excellent	Very Good	Very Good	Satisfactory	Very Good
Ease of learning	(100)	()	Good	Satisfactory	Very Good	Good	Satisfactory	Very Good	Good
Ease of use	(200)	()	Satisfactory	Very Good	Very Good	Very Good	Very Good	Good	Good
Error handling	(75)	()	Good	Good	Good	Very Good	Satisfactory	Good	Good
Support									
Support policies	(25)	()	Poor	Very Good	Good	Good	Very Good	Good	Very Good
Technical support	(25)	()	Unacceptable	Very Good	Good	Good	Good	Very Good	Very Good
Value	(50)	()	Poor	Very Good	Very Good	Satisfactory	Very Good	Good	Excellent
Final scores			4.4	7.1	7.0	6.3	6.5	6.1	6.1

Use your own weightings to calculate your score

GUIDE TO REPORT CARD SCORES

InfoWorld reviews only finished, production versions of products, never beta test versions.

Products receive ratings ranging from unacceptable to excellent in various categories. Scores are derived by multiplying the weighting (in parentheses) of each criterion by its rating, where:

Excellent — 1.0 — Outstanding in all areas.

Very Good — 0.75 — Meets all essential criteria and offers significant advantages.

Good — 0.625 — Meets essential criteria and includes some special features.

Satisfactory — 0.5 — Meets essential criteria.

Poor — 0.25 — Falls short in essential areas.

Unacceptable or N/A — 0.0 — Fails to meet minimum standards or lacks this feature.

Scores are summed, divided by 100, and rounded down to one decimal place to yield the final score out of a maximum possible score of 10 (plus bonus). Products rated within 0.2 points of one another differ little. Weightings represent average relative importance to InfoWorld readers involved in purchasing and using that product category. You can customize the report card to your company's needs by using your own weightings to calculate the final score.

“Wordstar's new WYSIWYG page preview feature is really fantastic — better than any other.”



ted, although you cannot view the outline from within the document. You can expand and collapse outlines. Outlining is rated good.

The table of contents and indexing features are good, with cross referencing and an exclusion file for indexing. Footnoting is especially nice, with support for both footnotes and endnotes in a document, user-definable formatting, on-screen numbering, and a window-style footnote entry method. We rate footnoting very good.

Macros are satisfactory, allowing you to store them in a separate file. Graphics are rated poor, with only the capability to draw lines with ASCII code. Printer sup-

port rates good, with Postscript and HP support, but file compatibility is poor, with no significant import capabilities. We have no complaints with Wordstar's speed; we rate it good.

Documentation includes program and add-on modules plus printer information and tutorials. The on-line help is useful, and overall the documentation is well-written, clear, and thorough, although we would like to see more examples throughout the text. We rate documentation very good.

Learning to use Wordstar is generally easy, although its command structure and general design are not the easiest to master, in spite of menus and help

screens. We rate ease of learning good overall. Ease of use, however, is very good, inhibited only by occasionally unintuitive or clumsy operation.

Error handling includes a backup system that always preserves the most recently saved file and the one before it. A timed backup is available, although it must be set in an installation program and can't be altered from within the program. The one-level Undo has a 500K limit that can be customized to a larger size. We rate error handling very good.

Support policies are excellent, with a 90-day product usability warranty, extended toll-free telephone support hours, bulletin board support, and a newsletter.

Technical support earns a good score, although our problems getting through still continue to a degree. You either get a busy signal or wait for quite a while on hold (toll-free, of course), but response is better than the last time we tested it. The technicians have uniformly been informed and are very capable and effective at their jobs.

At \$495, the classic Wordstar Professional 5.0's features and capabilities earn it a very good value score.

Wordstar 2000 Plus

RELEASE 2.0

Wordstar 2000 has grown into a graceful, fast competitor in the professional word processing category. It offers a comprehensive features list, great performance, fine documentation, and superior support. The program includes a main program for word processing; a set of supplementary features for mailing lists, form letters, indexing, telecommunications, and file conversions; and a collection of programs for managing graphics, producing page-size text displays, handling outlines, and handling preprinted forms. In addition, there are utilities for font management. Good graphic inclu-

REPORT CARD

**INFO
WORLD**

Office/Professional Word Processors

	(InfoWorld weightings)	(Your weightings)	Samna Word IV 2.0	Sprint 1.0	Total Word 1.2	Word Perfect 5.0	Wordstar Professional 5.0	Wordstar 2000 Plus 3.0	Xywrite III Plus 3.54
Price			\$595	\$199.95	\$495	\$495	\$495	\$495	\$445
Performance									
Basic editing	(50)	()	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
Formatting	(25)	()	Good	Satisfactory	Poor	Very Good	Good	Very Good	Satisfactory
Fonts	(20)	()	Satisfactory	Satisfactory	Satisfactory	Good	Satisfactory	Good	Satisfactory
Style sheets	(20)	()	Satisfactory	Good	Satisfactory	Good	Poor	Good	Good
Spelling checker & thesaurus	(50)	()	Very Good	Satisfactory	Satisfactory	Good	Good	Excellent	Satisfactory
Mail merge	(25)	()	Very Good	Good	Good	Good	Good	Very Good	Good
Outlining	(20)	()	Satisfactory	Poor	N/A	Good	Good	Good	Satisfactory
TOC & indexing	(20)	()	Satisfactory	Very Good	Satisfactory	Very Good	Good	Good	Good
Footnotes	(20)	()	Good	Good	Good	Good	Very Good	Satisfactory	Good
Macros	(25)	()	Satisfactory	Excellent	Satisfactory	Very Good	Satisfactory	Satisfactory	Very Good
Graphics	(30)	()	Good	Poor	Poor	Very Good	Poor	Excellent	Poor
Printer support	(30)	()	Good	Very Good	Very Good	Excellent	Good	Very Good	Very Good
Compatibility	(40)	()	Very Good	Excellent	Poor	Excellent	Poor	Excellent	Satisfactory
Speed	(50)	()	Poor	Good	Good	Very Good	Good	Good	Excellent
Documentation	(100)	()	Good	Very Good	Very Good	Very Good	Very Good	Excellent	Very Good
Ease of learning	(100)	()	Satisfactory	Very Good	Excellent	Very Good	Good	Good	Satisfactory
Ease of use	(200)	()	Satisfactory	Good	Very Good	Excellent	Very Good	Very Good	Very Good
Error handling	(75)	()	Very Good	Very Good	Satisfactory	Excellent	Very Good	Good	Satisfactory
Support									
Support policies	(25)	()	Poor	Good	Very Good	Excellent	Excellent	Excellent	Good
Technical support	(25)	()	Very Good	Very Good	Good	Very Good	Good	Very Good	Very Good
Value	(50)	()	Good	Excellent	Good	Excellent	Very Good	Excellent	Very Good
Final scores			5.7	6.8	6.3	8.3	6.5	7.7	6.5

Use your own weightings to calculate your score

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sion, fast speed, a good index card database, and other features place this program within the top group of powerful packages, although it should be noted that the various modules come in the form of add-on programs and are not seamlessly integrated (but if you don't use them, you don't have to install them, which reduces program overhead). With the myriad features taken together, they represent one of the most powerful word processing solutions currently available.

We rate basic editing very good with strong cursor moves, midword case sensitivity in search and replace, block commands, decimal/redefinable tabs, time/date stamping, and the capability to edit multiple files. Formatting is also rated very good with support for multiple columns, a WYSIWYG page preview, portrait/landscape support, vertical column balancing, and true widow and orphan control.

Wordstar has font support with super/subscripting and changeable fonts. The font name appears on-screen, and we rate fonts good. We rate style sheets good, with the capability to store named styles.

The spelling checker and thesaurus are very good, with multiple user dictionaries, ample suggestions, and global replacements. Synonymous definitions are also included. The dictionary size is a little smaller (87,000 words) than we like.

The mail merge includes conditionals and user-prompted information along with accepting various external database files; we rate mail merge very good. Outlining is good with a separate window, text expansion/collapsing, and the capability to hide text. You can also read multiple files into the outline.

A good rating for table of contents and indexing features is awarded for multiple levels and tables as well as cross-referencing support. Footnotes are satisfactory, with either footnotes or endnotes and on-screen numbering. Macros are satisfactory, with the capability to store macros in a library.

Through the add-on package, Wordstar graphics support drawing, preview, multiple file formats, boxes and circles, fill, scale and crop, and other editing features. There is a special graphics-screen grabber as well. We rate graphics excellent.

Printer support is very good, with a large range of printers handled including HP and PostScript plus soft font handling

routines. File compatibility is excellent, including a wide range of popular word processing formats in addition to the ASCII and DCA/RFT basics.

Speed is about in line with the majority of the pack, although import times were somewhat slow. We rate speed good.

Documentation is really top-notch, with many various submanuals and clear, comprehensive explanations of features. We rate documentation excellent.

This very complex program includes various modules with somewhat different user interfaces for some of the add-ons. There are so many options and choices that new users can easily become con-

fused. Given the complexity and the variability of user interfaces we limit our ease of learning score to good.

Powerful macros and redefined functions, however, help with customization and the installation program has a superior set of utilities for customizing the program. While the product is exceptionally strong in ease of use for experienced users, its great complexity and variable user interfaces can occasionally impede progress. Overall, the product is very easy to use and we rate ease of use very good.

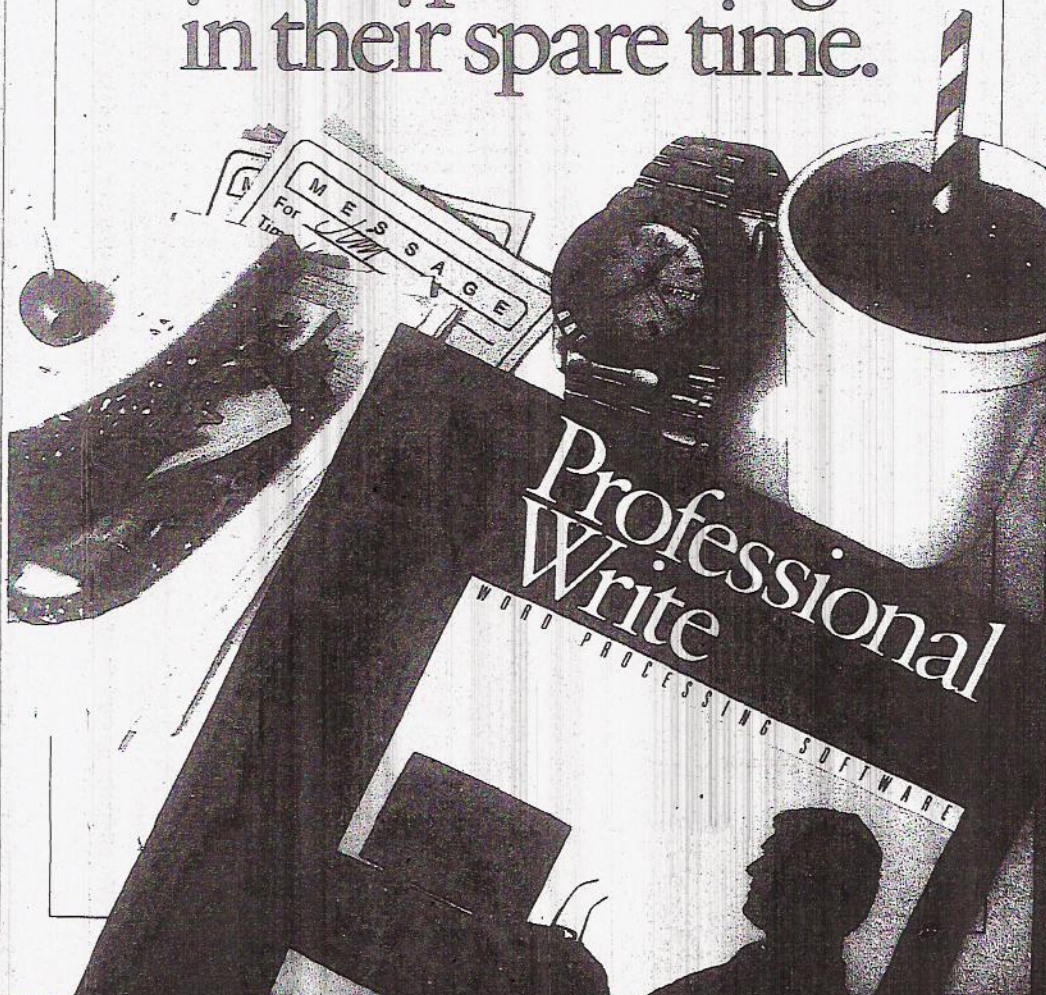
Error handling includes automatic file backups and a one-level Undo command for deletions larger than one character.

Some uses of the add-on programs, such as the graphics-screen grabber, can conflict with other memory-resident programs and freeze the machine. Overall, we rate error handling good.

Support policies are excellent, with a 90-day money-back guarantee, a newsletter, and unlimited toll-free support. Technical support's telephone response time seems to have deteriorated slightly from our past experience, but service is still very good with quick, knowledgeable answers from a staff that is exceptionally eager and willing to help.

Among the top competitors in this field, Wordstar 2000, Release 3 ranks near the top, At \$495 (\$595 for the legal

Today's managers are expected to learn word processing in their spare time.



PRODUCT SUMMARY

Wordstar 2000 Plus

RELEASE 3

Company: Micropro International Corp.,
23 San Pablo Ave., San Rafael, CA
94903; (415) 499-1200, (800) 227-
5609.

List Price: \$495, Personal Edition;
\$595, Legal Edition.

Requires: IBM PC or compatible; 384K
of RAM (512K for graphics and other in-
cluded packages); DOS 2.0 or later;
hard disk recommended.

Pros: Particularly strong in form letter
and mail list management and complex
formatting; broad range of features.

Cons: Complexity and use of separate
support programs can make learning
more difficult.

Summary: A high-powered, full-featured
office product, Wordstar 2000 offers
strong editing, superior formatting, great
printer support, and a wide range of
companion programs for graphics, tele-
communications, and outlining. It is one
of the top packages.

edition), its rich complement of features and speed make it an excellent value.

Xywrite III Plus With A La Carte Menus

VERSION 3.54

Surely the most powerful and customizable of its type, Xywrite is the Lear Jet of word processing programs. Similar in structure and organization to PC Write 3.01 and almost totally programmable (as is Sprint), Xywrite has become almost a cult system for its devotees. And no wonder: It is a fast, command-driven system which can do virtually anything.

Primarily an operating system shell that does word processing, Xywrite takes considerable readjustment for people used to typewriters or standard word processing programs. Although Xywrite has superior on-line help screens, and this version has added a drop-down menu system, this is not a word processor for the faint of heart. Either you like free-form, unstructured editors — if so, Xywrite is absolutely superb — or you don't, in which case it's a pain in the neck.

In the features race, Xywrite is a mediocre contender. More robust than Displaywrite 4 or Total Word, it does not reach the levels of Microsoft Word 4.0, the Wordstars, or Word Perfect 5.0.

Graphics commands are primitive, there is no page preview, and side-by-side column support is pretty good, but generating newspaper columns is clumsy. There is a fine sort facility with good math help, but the mail merge could be more effectively implemented.

Xywrite has better-than-average basic editing capabilities with great cursor controls, redefinable tabs, full-featured paragraph formatting, date stamping, and the capability to view and edit multiple files simultaneously. We rate basic editing capabilities very good. Formatting functions are satisfactory, supporting true widow and orphan control but lacking a zoom feature. You can have snaking

multiple columns on-screen. The fonts are changeable (changes are highlighted on the screen) and super/subscripting is available. We rate fonts satisfactory.

Style sheets are good, allowing style sheets to be named and stored on disk.

The spelling checker and thesaurus are satisfactory, with multiple-user dictionaries supported. We rate the mail merge good, with strong programming that includes both conditionals and user-prompted information plus good support for database file formats.

Outlining is satisfactory at best, with automatic paragraph numbering only; you can also view an outline from a document. The flexible table of contents and indexing facilities are rated good, supporting multiple levels and tables, although they are rather complicated to use. Footnotes receive a good score, supporting footnotes and endnotes in the same document, user-definable formatting, and on-screen numbering.

Macros can be stored in a separate file and can support user-prompted variables, conditionals, and a fully reprogrammable keyboard. We rate macros very good. There is no graphics support, beyond the capability to draw lines with ASCII code and a printer-ready graphics file at print time; we rate graphics poor.

Printer support is very good with soft font capabilities and support for many HP-compatible laser printers as well as Postscript. File compatibility is only satisfactory — it is limited to ASCII and DCA/RFT file imports.

Xywrite's disk-blistering speed outdoes all challengers. Only Nota Bene (which is based on Xywrite) is closer; we rate speed excellent. Xywrite includes robust documentation. The tutorials and booklets feature clear text, fine indexes, and examples. We rate it very good.

The program's complexity impedes ease of learning somewhat, but these problems are offset by the tutorials, an informative help system, and the A La Carte menuing system, which adds a more intuitive approach to word processing with Xywrite. We rate Xywrite satisfactory in ease of learning.

If you're up to speed, Xywrite can be molded to virtually any operational shape you can dream up. Its customization capabilities meet just about any word processing needs. This greatly enhances ease of use, which we rate very good.

Error handling includes a single-level undo but no support for backspace or single-character deletes. Data loss is rare and difficult to accomplish, although Xywrite does permit almost any DOS

NEW VERSION 2.0

Fortunately, that's all it takes.



Can Professional Write significantly reduce the time and cost of your training and support? Call 1-408-848-4391, Operator #60 for a free trial disk.

Truth is, the best business people have the least spare time. So Professional Write 2.0 was designed to get them up and running immediately.

Professional Write 2.0 has all the features managers demand, and saves them the frustration of learning programs designed for full-time typists.

Our learning process speeds up the word process.

Anyone can learn Professional Write in a couple of hours. The screen is as familiar as a piece of paper. Pull down menus and an on-line manual means there's nothing to memorize. Our follow-along tutorial is written in plain English, and our context-sensitive help is one of the best available.

It all ensures that your managers spend their time managing, instead of asking for help.

We're the most compatible with your secretaries.

We gave Professional Write the most extensive and direct connections with the other software standards in your office. No other program does it so easily. Professional Write has built-in compatibility with MultiMate, WordPerfect, Microsoft Word, WordStar, Wang PC, DCA, and ASCII. You can directly import Lotus 1-2-3 worksheets without retyping; include a chart from Harvard Graphics when printing; and mail merge quickly with dBase III files.

We give your printers the perfect set-up.

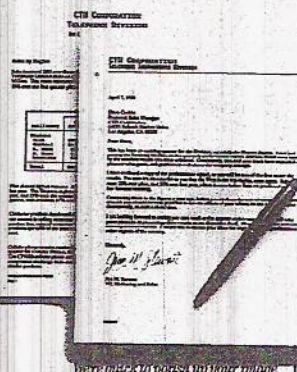
Now using multiple fonts with an HP Laser Jet, Apple LaserWriter, PostScript or HP DeskJet is as simple as underlining. And printer support has never been easier, because Professional Write is pre-configured for quick installation.

We have a fast new way to find your documents.

You no longer have to spend your valuable time hunting down files. Our new File-Finder searches through the actual text of all your Professional Write files to find any words or phrase, and will call up the appropriate document. We'll also give you sorted lists of files, and the option to identify your files with summary descriptions.

There's more to our feature story.

We know what managers need from a word processor. That's why Professional Write offers speed keys, macros, and column-move. An integrated spelling checker,



thesaurus, on-screen calculator and address book are only a key-stroke away. We also support all the popular networks.

Put time on your side.
Call 1-408-848-4391,
Operator #60
for a free trial disk.

PFS: Professional Write and PFS:
Write owners Call 1-303-799-4900
for upgrade information.

SPC SOFTWARE PUBLISHING

The designers of PFS.

PRODUCT SUMMARY

Xywrite III Plus

VERSION 3.54

Company: Xyquest Inc., 44 Manning Road, Billerica, MA 01821; (508) 671-0888.

List Price: \$445.

Requires: IBM PC or compatible, 384K, two disk drives; DOS 2.0 or later.

Pros: Very powerful; extremely fast; highly customizable and programmable; fine printer support.

Cons: Complex and requires an expert to exploit full advantages; limited graphics and newspaper columns; no preview screen.

Summary: This fast, powerful word processing engine is best for heavy editing of complex documents and in environments with high levels of technical skills. It can do virtually anything, but it's not for the faint of heart.

command, which could get an inexperienced user into trouble. Overall, we rate error handling satisfactory.

Enhanced support policies include a bulletin board, extended hours (5 a.m. to 5 p.m., Monday through Thursday, and 5 a.m. to 3 p.m. on Friday, Pacific time), and a newsletter in addition to unlimited (but not toll-free) support. We rate support policies good. Technical support is quick, efficient, and expertly done with technicians going out of their way to help. We rate technical support very good.

With its strong list of features, great customization capabilities, and strong performance, at \$445 we rate Xywrite a very good value. □

Executive Summary

Office/professional word processing continues to grow in speed, power, and complexity. Some packages in this group (for example, Word Perfect, Wordstar 2000, Microsoft Word, and Xywrite) approximate the power of a desktop publishing system, while other word processing programs offer highly structured office productivity systems (for example, Samna, Multimate Advantage, Officewriter, and Displaywrite). But the best way to summarize the current

crop is to divide the systems according to style and power.

Users consistently reflect enthusiasm for particular approaches to word processing and passionately defend styles that have very little impact on actual function or power. Some office workers like the strongly structured user interfaces of products derived from dedicated word processing programs, even though there is little real difference in power or functionality between these and the rest of the

pack. For these users, products such as Samna Word, Multimate, Officewriter, and Displaywrite — in descending order of power — can be the optimal solution.

Other users like the free-form editing and nonstructured menu systems of more traditional computer word processing programs. These types of programs offer greater flexibility within an integrated environment. While traditional word processing programs utilize menus, user access is much less structured and organized, and this flexibility has helped the traditional programs gain a major market share. In descending order of power and effectiveness these products include Word Perfect, Wordstar 2000, Microsoft Word, Wordstar Professional, and Total Word. In this group, Microsoft Word stands out as somewhat less easy to learn and use and somewhat more structured in its approach than the other programs, but the differences are not major.

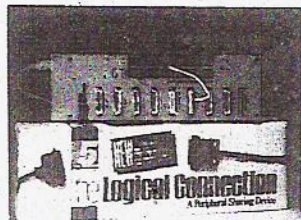
Closer in derivation to text editors than to word processing systems, products such as Xywrite III, Sprint, and PC Write provide superb (and extremely fast, in Xywrite's case) editing engines with outstanding print control, but at the expense of close integration between editing and final appearance. All three offer what appears to be unlimited customization and programmability, and they can be coaxed into behaving in just about any way an expert wants. However, none of these products can deliver full benefits without a major investment of time and expertise, and consequently we do not recommend them for ordinary office environments.

Finally we come to the specialized products: Lotus Manuscript and Nota Bene. Lotus Manuscript offers the best implementation imaginable for structured documents. Technical manuals, complex proposals, or financial documents using spreadsheets and graphics all benefit from the special tools and unusual architecture of this program, which sees text as if it were a word spreadsheet. Powerful and effective, Lotus Manuscript is the only one available if you need its special features, but it would be a poor choice for normal office work.

Nota Bene illustrates what can be done with Xywrite in the form of customization. Built on the Xywrite engine, it has all the features of that fine product but adds a host of specialized formats and text-based additions that make it an ideal tool for academic writers. As powerful as any product here and just about as fast as Xywrite, Nota Bene's special audience will appreciate its adherence to MLA and other common academic style manuals and its special strengths for bibliographies and references. But normal office word processing experts will find its environment too difficult.

In total, then, we have a remarkable crop of high-powered products. The one certainty is that within six months or so we will be started on a whole new generation, with additional features to evaluate and appreciate. □

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