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Determining The Word Processing Software to Meet the Needs of The Business User

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DETERMINING THE WORD PROCESSING SOFTWARE TO MEET

THE NEEDS OF THE BUSINESS USER

by

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An Independent Study

Submitted to the Graduate Faculty of

The University of North Dakota

in partial fulfillment of the requirements

for the degree of

Masters of Business Administration

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ACKNOWLEDGEMENTS

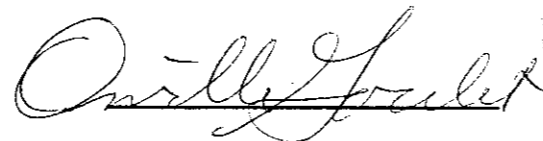I would like to thank Dr. Orville Goulet for his supervision and encouragement which I found invaluable during my tenure here at the University of North Dakota. My sincere thanks to my loving, tolerant, and patient husband, Bob, and my children, Janet, John, and David for their support. Without their support and understanding, completion of this paper and the degree would not have been possible.

APPROVAL

This independent study submitted by Bernice B. Nelson in partial fulfillment of the requirements for the Degree of Masters of Business Administration from the University of North Dakota is hereby approved by the Faculty Advisor under whom the work has been done. This independent study meets the standard for appearance and conforms to the style format requirements of the Graduate School of the University of North Dakota.

Dr. Orville Goulet

PERMISSION

Title: DETERMINING THE WORD PROCESSING SOFTWARE TO MEET THE NEEDS OF THE BUSINESS USER

Department: School of Business and Public Administration

Degree: Master of Business Administration

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TABLE OF CONTENTS

ABSTRACT

Computerized word processing with computer software packages is common throughout industry today. However, selection of the appropriate software is a complicated procedure and requires a careful examination and comparison of the complexity of the software (features available) with the ease of learning to use the software. With the wide variety of products that run on IBM PCs and the IBM compatibles, it is possible that the business manager can find one that adequately fills both needs. When selecting an appropriate word processing software package, one must first determine how the product will be used so that the purchaser can weigh the advantages and disadvantages of easy versus powerful packages and come up with an adequate compromise.

Some of the easier-to-use programs can make great learning tools, especially for computer novices. They also work nicely if the major word processing application is the production of short letters and memos. However, if the user is expected to do a great deal of tabular typing or produce hundreds of form letters or many long reports, the business might be better off sacrificing some of those user-friendly features in favor of powerful capabilities that will make these tasks easier. On long reports, for example, production goes faster with software that automatically writes tables of contents and indexes, and numbers, chapters and lists.

The decisions involved in selecting an appropriate word processing software package often revolve around how long a learning curve the

business can afford and which sophisticated features are needed. Some of the more powerful packages require extensive training and practice before users can use them competently and with efficiency. The friendlier packages save learning time, but in the long run might cost time because they do not automate many production tasks.

Another ease-of-use feature is the quality and organization of the software instruction manuals. Some manuals explain in detail how to use the program; others just list the features of the program. Most of the documentation included with software packages could use improvement.

For many buyers, availability of features ranks higher than ease-of-use. In this study the word processing software packages were evaluated, and a comparison was done to determine which features were available from a list of more than three hundred features, including scientific reporting and foreign language ability.

No word processing software package does everything, and those that do many things often have a variety of weaknesses. Since packages with more features are more complicated to use, the purchaser is wise to buy software which contains only the features the users will need. In addition, it is always wise to insist on a demonstration of the needed features before purchasing. Balancing ease-of-use and power of word processing software packages is a continuing process.

This study's goal is to make the selection of computer programs for individuals and business firms more efficient because they can now see an evaluation and comparison of the different programs available.

Introduction

The microcomputer has changed forever the mode and process of American business and society. Computer power that was previously the exclusive province of large organizations and universities is now available to the small business and home user. All applications of computer technology to the storage and communication of words and ideas have convinced many that the computer is an historical turning point who effects are only beginning to be felt today. Since word processing is the most widely used application for everyone, it is usually the first purchase for those who have a computer at their disposal. It was a novelty in the 1970s, accepted as commonplace in the 1980s, and it will be a necessity in the 1990s.

Enter the IBM personal computer and the less expensive market for purchasing these computers. The first corporate level word processor for the IBM PC was developed for an insurance company in Hartford, Connecticut which would mimic the dedicated machines it used. The consultants struck an agreement with the insurance firm that allowed them to market the product to all comers, and the first edition of MultiMate was born. Other companies, including IBM soon followed, most of MultiMate's model by mimicking the Wang's word processing system but others created their worn menu-driven path. IBM copied its own large

others created their worn menu-driven path. IBM copied its own large computer word processor, DisplayWriter, software when it produced the DisplayWrite product line for the PC.

Word processing allows the user to create text by typing characters on the computer's keyboard. As the user types the text, it is entered as data into the memory help in the RAM (Random Access Memory) chips. If the user makes a typographical error, the user simply needs to backspace and retype the entry correctly. The computer can then be used to manipulate the data. Editing is done by a powerful set of commands that will move words, sentences, or even paragraphs from one location to another; and the machine will reformat one's document by changing margin or line spacing. Some programs will also check spelling, improve grammar, provide immediate access to a thesaurus, and send form letters.

Manipulating text data is the primary function of word processing software. When the text has been manipulated into its finished form, the word processing software's commands can be used to print the text on the printer or store the data for future use. When the word processing software is used, it is understood that the program which controls the computer, the keyboard, the monitor, and the printer, as well as the documentation manuals and tutorials, is all part of the software package.

This electronic typing on personal computers is moving forward very rapidly in the business world. For example, since 1985, it has become common practice for companies in the United States to install personal computers on the desks of their workers. Over two million PC's were purchased by the leading corporations during that year. General Motors

alone installed 31,000 of them during 1985.[1] No classification of PC software is larger or more widely used than the word processors software. The word processing software package is every beginner's first software purchase and every power user's daily computer tool. Thus, more word processors are in use on personal computers, by a variety of users, than any other type of software product. The number and variety of products designed to fulfill this incredibly wide range of needs has made word processing the most competitive market in PC software. As a result, no one product dominates that market the way Lotus Development Corp.'s 1-2-3 holds sway in spreadsheets or Ashton-Tate's dBASE product line dominates database management.[2]

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[1] "Top PC Purchasers," The Wall Street Journal, September 16, 1985, p. 17.

[2] John Dickinson, "The Business Words of Word Processors," PC Magazine, January 28, 1986. pp. 102-110.

CHAPTER II

Word Processing of the Past

Computers have become so prevalent today that it is hard to think of a business or profession where they are not used. Computers were first used in scientific and military research circles toward the end of World War II. In the late 1950s they began showing up regularly in banks, insurance companies, and government agencies. In the 1960s they appeared in the halls of most companies and colleges and by the end of the 1970s the much-heralded personal computer appeared.

Just a few years ago, business leaders were satisfied with a word processor that would print out their text neatly. The organization's choice of word processing software not long ago had to satisfy only the secretaries and the word-processing operators. The machines were usually dedicated word processors, possibly as sophisticated as the Wang software and accompanying computer. Many other business organizations had not yet even purchased the word processing machines and were still relying on typewriters and carbon copies. Nowhere is word processing more useful than in the busy offices where it got its start and remains very popular. Efficient secretaries do not want to waste their time proofreading, making corrections, retyping entire documents when their bosses decided to sharpen a phrase or reverse the order of two

paragraphs, or doing any of the other repetitive and mechanical jobs that the computer and printer can do for them. Word processing did not always save people from repetitive and mechanical tasks. The earliest word processing programs ran on large central computers and were used by word processing specialists who sat in an office with "WORD PROCESSING" on the door and did nothing but word processing all day long. Typing jobs from every office in a company were sent to the specialists for processing. This assembly line approach was meant to be efficient, but it was not; the good secretaries who make the best use of word processors are not robots and do not function well in a robot environment. Computer applications tend to be decentralized today. Each office in a modern corporation has its own desktop terminal or its own microcomputer for word processing and other computer applications.

The entrance of the personal computer to the desk of the upper manager and administrator very quickly created a need for many computer application software packages. Whether the business application in the future is something as technical as computer systems analyst or as nonscientific as musician or poet, the user will be influenced by what computers can do and how well you can use them.

What Word Processing Software is Being Used Today

Word processing can be used for anything that can be put down in writing, from Christmas letters to all of your friends and relatives, to manuscripts for term papers, articles, and books. There are many

valuable and practical applications which are particularly suited for word processing. You can recognize potential word processing applications by looking for the following characteristics on a project or task: (1) repetition, (2) editing (3) revisions, (4) variable and fixed parts, and (5) the need for quality appearance. Word processing is especially productive for repetitive tasks such as preparing a large number of similar letters with some individual touches. For example, one plans to send out letters to 35 nominees of an honor society. Each letter has a different name, address, salutation, and grade-point average but the letter is essentially the same. Once the basic letter is typed and saved, the word processing software allows the user to tailor each letter to the person receiving it without retyping the entire letter. Instead, you simply type in the individual information and the word processing software will do the rest. With some sophisticated word processing applications software, you can even collect the individual information such as same, address, and grade-point average on a separate file. A series of letters can then be printed by merging the basic letter file with the individual variable information in the other file.

Today our standards are considerably higher, and software manufacturers are responding with increasingly complex programs. Microcomputers supplied the answer for the corporate professionals. Professional users brought them to the office or used them at home practically inventing today's burgeoning work-at-home life-style to create and edit status or research reports and general correspondence. Microcomputers soon started showing up on writers' and editors' desks,

at universities and public schools, and even in churches and law offices. At first WordStar and IBM's meager EasyWriter were the only word processors available for the microcomputer. But it was not long before software geniuses from coast to coast began filling the marketplace with new products with new capabilities. Today, professional word processors are one of the hottest software markets in microcomputing. With personal computers popping up on desk tops everywhere and the software availability growing at about one new word processing software package or revision per week, many managers and professionals do their own word processing.[3] Although personal computer users today can choose from more than 100 different word processing packages, only ten packages account for more than 80 percent of personal computer word processing software sales. At first glance, each of the top ten packages may seem similar. Beneath the surface, however, there packages differ significantly from one another. Word processing clearly has powerful effects on the user, and on the society in which the word processor has largely replaced the typewriter. It is easy to see that this is the case for individual users. The fluidity of word processing and the ease with which the text is created, corrected, rearranged, and printed reduce psychological stress on the writer and typist. Work is more satisfying, and its quality improves. The psychological satisfaction and quality of work of writers and typists is not a minor matter. Today, there are literally thousands of software programs written for the IBM compatible personal computers and Apple computers. Their uses

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3 Phil Wiswell, "Word Processing, the Latest Word," PC Magazine, August 20, 1986, p. 124.

run from the essential to the bizarre. For applications, however, the majority of them can be broken into these categories: Word processing, Spreadsheets, and database managers. About three out of four PCs are used to write documents. Word processors range from simple put-the-letter-on-the-screen programs to multifaceted programs that can take a document, format its printed appearance, run the printer, or set up the modem to send the text electronically. The programs now routinely include spelling checkers, and thesauruses to aid the writer. The market leaders are WordPerfect 4.2 a product of WordPerfect Corp., Microsoft Word 3.0 from Microsoft Corp., XyWrite III from Xyquest, and WordStar from MicroPro.

The Users of Word Processing in Business

Types of Users

Consider for a moment four different kinds of business personnel who could easily benefit from using work processing software. First, the executive or top level manager in a business or the academic professor in the his/her field of study, who does his/her own word processing and spends roughly one third of each day writing. Second, the technical writer or the editor, who spends at least three-quarters of his/her time writing and editing. Third, the middle manager in business or a staff person like a city planner or a supervisor, who draft reports from notes and then give them to a secretary or an aid to

finish them into acceptable form for filing or sending up the chain of command. Fourth, the secretary, who spends at least fifty percent of the time finishing all the reports and documents that must go out of the office, including the form letters to be mailed.

Not everyone needs the powerful packages.[4] Some of the easier-to-use programs can make great learning tools, especially for computer novices. These software packages also work nicely if the major word processing application is to produce short letters and memos. Enticed with a friendly word processing software program, "computerphobics" are much more likely to make a stab at mastering the personal computer, and even go on to try a variety of other software.

However, if the personal computer user's needs require a great deal of tabular typing or production of hundreds of form letters or many long reports, the businessman might be better off sacrificing some of the user-friendly features in favor of powerful capabilities that will make these tasks easier. On long reports, for example, production goes faster with software that automatically writes the table of contents, makes an index, numbers pages, and makes lists for the operator. The ability to put text into columns is also an important feature for some business reports.

Several recent articles have focused positively on professional and executives' use of word processing software.[5] There is a camp of professional word processors who argue that improved documentation and

[4] Ann Sussman, "Frustrating Mounting for Corporate PC Users," PC Week, August 18, 1987, p. 12.

[5] Paul Karon, "Law Firm Makes a Fine Case for PCs," PC Week, July 21, 1987. pp. 43-52.

tutorials now make the most powerful software usable by anyone, while others believe that many powerful software manuals are not written for the novice or beginner.6 These profess that the stripped-down versions of the powerful programs are the most usable. Whichever camp is correct, business organizations will not wait long to question any manager's use of his/her own high-priced hours to do word processing.

Assistants now do many tasks that managers used to do themselves. Mich Wilding, Chief Executive Officer of MicroTrek, a personal computer consulting and training firm, says that these assistants' functions "complement" those of the managers much more today than they did in the past.7 Possible benefits include training which is more sound and the development of broader skills for assistants. Attainment of this more extensive training may translate into faster promotions. Drawbacks include potential loss of managerial expertise at crucial decision points and of managerial "presence" in crucial office situations. To minimize the user's learning curve, saving time and money, planners will usually want to recommend the simpler versions of a software program to users such as one whose main task is not word processing.

Needs of Business Personnel Users

With the wide variety of products that run on IBM and compatible

6 Paul Karon, "In One Lawyer's World, A Portable Word Processor Is Just The Write Stuff," PC Week, July 21, 1987, p. 43.

7 Carol J. Mullins, "Word Processing in the Age of Specialization," Information Center, April, 1986, p. 48.

personal computers, there is a good chance the businessman can find a word processor that adequately fills all needs of the user. What he/she has to do first, though, is determine who will be using the product and how it will be used so that the advantages and disadvantages of easy packages versus powerful packages can be assessed in order to come up with the best selection.

Each program is aimed at a slightly different type of user. As users become more sophisticated in their uses of word processing software, the subtle differences among packages become important. Fortunately there is enough variety among word processing products to provide features that appeal to almost everyone.

Word processing and text processing are changing the shape of office work and helping writers and their publishers to be more productive. Information utilities store text and graphics in their databases and are communications way stations, joining remote computer users to the central databases to each other.

If a person were to do a survey of successful microcomputer users and asked, "What do you use your microcomputer for?", 9 out of 10 would say word processing. Word processing software is the most popular applications software used on microcomputers, and for good reason. Word processing frees the operator from tedious and time consuming retyping and other editing chores. Word processing gets rid of all those excuses for not having a perfect term paper, letter, memo, resume, or report. Just a few commands and the word processing applications software will change the spelling of a word throughout the document.

In formal terms, word processing is the automated processing or

manipulation of words using a specialized applications program designed to compose, revise, print and file written documents. Word processing is a specialized form of data processing where the data are characters and words. In order to use word processing, the user needs to understand how and who it works. Computers can process soft (electronic) words. The word stored within the primary storage of a word processing system (the microcomputer system) are termed "soft" because they are not in a physical form. They are merely electrical impulses. Each keystroke is converted by the computer into a series of zeros and ones. Every letter the operator types becomes a string of eight binary digits (bits), or one byte. Each byte of primary storage has a unique address. The microcomputer, aided by word processing software, can directly access each character you create. Individual characters or groupings of characters in words, sentences, or paragraphs can be moved around and processed with ease. For instance, to erase (delete or overstrike) a typed character, the user instruct the work processor to enter another keystroke character into the same byte, replacing the old letter or character with the new. RAM (Randon Access Memory) has a feature called destructive write. That is, writing a new character to a byte causes what was previously stored in that byte to be destroyed (actually just replaced) by the new entry. Other electronic word processing tricks include changing an entire document from single spacing to double spacing with one simple command, replacing every occurrence of a word such as "quarterly" with "monthly," and exchanging one paragraph with another.

Spelling Checkers

Many people who use word processing software also use spelling checkers. A spelling checker is a program that compares each word in a document to a list of properly spelled words called a dictionary. If a word cannot be found in the dictionary, the spelling checker records it as a mismatch. The work is either misspelled, or is missing from the dictionary. The spelling checker marks or writes a list of mismatched words that is then reviewed by the user for further action. The word can be correct, ignored, or added to the dictionary. Some spelling checkers will assist in the decision by showing the content of the word in the text, or suggesting possible spellings for the word. The dictionaries used by spelling checkers commonly contain 80,000 or more frequently used words, plus the capacity to add more. In addition to the main dictionary, some spelling checkers permits the user to set up specialized dictionaries for technical terms used only in particular documents. This keeps the main dictionary to a reasonable size and saves time when the computer searchers through it. The operator can specify which dictionary is needed to check a particular file. Some spelling checkers are designed to work with specific software, while others can be used with just about any word processing software. Popular brand include CorrectStar, The Word Plus, SpellGuard, Office Speller, EasySpeller, and The Benchmark Spelling Checker.

CHAPTER III

Purpose of the Study

In an attempt to sort out the cost and type of word processing computer software that keep popping up and disappearing from the marketplace, there have been a massive number of books and magazines articles printed about micro word processing computing software for the IBM PC or the many compatible machines. Among all theses well-prepared analyses, there are none that tell a business which word processing software is the most efficient and correct for his/her type of business. The business which has limited knowledge about either the personal computer or the word processing software which is available for purchase. Computer software consulting firms are not always interested in the wisest choice of alternatives, but rather concentrate on the best word processing software with which they are familiar or push the software for which they receive a commission from the sale. In a search of the current literature there is a lack of information on the cost of the software, the cost of the training, the training available for the firm, and the knowledge of where the business would start to find this information. If one reads and studies all the literature available from the software companies or just word processing software companies only, there is no mention of why a particular software should be chosen

over another brand. Many will give a rating as proposed by some so called expert. One thing is apparent, there is a lot of competition in the word processing software market. There are nearly one hundred new word processing software or revisions of word processing software added to the market each week. Every company is advertising a faster, a more powerful software when perhaps that is not the type of software that is needed in a particular case.

This study will attempt to explore the possibility of providing business with a method or methods of determining the best word processing software available to them at the present time. The major problem appears to be the ability of the author to obtain a working copy with documentation of the word processing software available on the market to the business. Many firms are very helpful while others either did not respond or flatly refused to cooperate. This study is an information search to aid businesses to develop a sound approach to choosing among the alternatives in word processing software for the IBM PC or compatible machines available for purchase.

Statement of the Problem

The main question to be examined is: How to determine the best word processing software for the business taking into account the types of users which will be using the software, the types of manipulations which will be required of the software, and the resources of the firm which are available?

Justification of the Problem

The most significant fact that prevails is that businesses, particularly small businesses, have one of their greatest problem in choosing word processing software package for their personal computers. Most of the business leaders have knowledge in the area that there are word processing software packages available, but few have any idea of where to start to find the software for their business. This study could help lessen that gap of knowledge. This study was also meant to be a current compilied informational guide to give businesses, particularly small businesses a method and guidance to choosing a word processing software best suited for their business. This study does not propose to answer all the questions that a business could have about word processing software or about any software may would be under consideration. It could, however, lead a small business through a process of the investigation to determine which word processing software to consider for purchase.

Scope

In this study one hundred sixty-three word processing software packages are chosen to be included. Of that number, only thirty-four different word processing software packages are included in the final

analyses. There are three hundred fifty different features selected to examine in each of these word processing software packages. If a particular selected feature was not contained in at least one of the remaining software packages it was eliminated from the study. This reduced the number of different features to two hundred. The features are chosen for many and varied reasons. The features are grouped into classifications and then into categories within these classifications. Classifications selected are as follows:

(1) Text Entry and Editing,

(2) Editing Screen Displays,

(3) Formatting Features For Final Text,

(4) File Handling,

(5) Special Features,

(6) Printer Support, and

(7) Software Information.

At the time a category or feature was selected into the classification, no particular consideration was given to the type of user which would be using the word processing software, but only to the task being accomplished.

Limitations

Several restrictive limitations need to be made because of the structure of the study. First, the different brands of word processing software is constantly changing with more that fifty different packages

entering the market each year. A time frame had to be set, with only the packages available during that time considered. Second, the brands which are actually tried personally, and the manuals read was dependant upon the generosity of the software companies themselves. Third, it was assumed that the computers which ran these programs are stable, matched, with similar clock speed, and equivalent in all maneuvers and operations. Fourth, it was assumed that the business person reading this study and making the judgement was completely ignorant of the terms of computers, software, editing, and word processing. The price of the software is listed at retail as listed by the manufacturer. Street prices for this software is as much as seventy percent lower. There are many catalogs and magazines available which list many of the software at a much lowered price. No attempt has been made to list the street price in this study.

This study makes no attempts to list or discuss the psychological effects of the word processing software.

Methodology

This study is a culmination of information which was gathered from a literature review of the recent publications, replies to direct correspondence with the word processing software companies, telephone conversations with the salespersons and representatives at the different software and computer conventions, and from the printed manuals of the different word processing software.

To organize and compare the different software packages different features are examined and subgrouped. The ninety-one features listed under the Text Entry and Editing classification the entries are grouped into categories: (A) Typing and Editing, (B) Deletion Formats, (C) Cursor Movements, (D) Character Features, (E) Blocking Editing Tools, (F) Search and Replace, and (G) Undo Utilities.

In the Editing Screen Displays there are fourteen features listed under two categories (A) Text Display and (B) Nontext Display.

The seven categories in the Formatting Features for Final Text classification are: (A) Character Formats, (B) Line Spacing, (C) Margins, (D) Tabulation Formats, (E) Multiple Columns, (F) Page Formats, and (G) Header/Footer. There are thirty-eight features investigated in this classification.

Thirty-eight different features are found in the three categories, (A) Document File Strategy, (B) Document Saving, and (C) File Import and Export are contained in the File Handing classification.

The classification of Special Features contains the information on seventeen features about the spelling checker and itemizes sixteen foreign language support, if available. In addition to this information there are categories of Other Features with twenty-seven features and DOS Facilities with eight features.

The last two classifications (1) Printer Support and (2) Software Information will give the businessman information on seventeen facts to help determine if the software they are considering is compatible with the printer they already own, if the software is compatible with the printer they are considering purchasing. If the particular software is

within the parameters of the personal computer which is available, and
if the software they are considering is within the budget.

CHAPTER IV

Analysis of Available Word Processing Software Packages

In addition to the many different products available for the word
processing software selection, many vendors and producers of word
processing software are making several options of their software
available. In 1982, after adding IBM PCs to its collection of machines
which could use Wang Word Processor Software, Connecticut Mutual Life
Insurance Company hired a software-development company to transform its
microcomputers into Wang Writers.[8] The development company was W. H.
Jones and Associates. When MultiMate International founder Wilton H.
Jones learned through a survey of users that forty-four percent of the
actual users held advanced degrees, his firm marketed only MultiMate
Professional, a Wang "work-alike" designed for typists, not writers.[9]
MultiMate's designers promptly set about developing the features needed
by serious writers. The results began to appear in mid-1985 with the
release of MultiMate Advantage (the top of the line). Executive
MultiMate (for managers) and Just Write (for occasional users). In
addition, the company continues to support MultiMate Professional.

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[8] C. J. Puotinen, "Software Review: Leading Edge and MultiMate,"
Byte, November, 1984, p. 288.

[9] Carolyn J. Mullins, "Word Processing in the Age of
Specialization," Information Center, April, 1986. pp. 44-48.

Other vendors have followed suit with both new products and upgrades. The trend at this time is toward different versions of the same software, with each product tailored to a specific market segment. The text that is produced from the low-end products is usually upward compatible and can be edited by a high-end product within the same vendor's products. Samna Corporation offers <u>Samna I</u> (the simplest version) <u>Samna II</u>, <u>Samna III</u>, and <u>Samna+</u>. Satellite Software International offers <u>Personal WordPerfect</u> (for the occasional users), and <u>WordPerfect Jr.</u>, (for the educational market) in addition to <u>Word Perfect 5.0</u> (the most sophisticated).

Vendors have also made text transfers between incompatible programs easier. In addition to ASCII translation, which permits text transfer without format codes, most major products now offer or plan to offer translations to DCA format (IBM's Document Content Architecture), which is used by the IBM mainframes. Wang work-alike <u>MultiMate</u> or <u>OfficeWriter</u> by Office Solutions provide for text swapping between the personal computers and the Wang systems.[10] Samna Corporation provides <u>Dart</u>, a mainframe product that translates uploaded text (a document which is transferred from the personal computer to the mainframe) between popular but incompatible word processors, both dedicated and PC-based. Unlike ASCII, the newer translators preserve not only text but many format codes as well.

Furthermore, the vendors watch each other with all the intensity of athletic scouts watching next week's opponent. Let one vendor add a

[10] Janet Cameron, "World Processing Revisited," <u>Byte Guide To The IBM PC</u>, Fall, 1984, p. 165.

unique feature to its product, and the others soon do likewise. For instance, <u>WordPerfect 4.2</u>'s thesaurus and onscreen columns were unique on the date when their product was released, but they are not any more. Planners, buyers, and users can think of this as the "me too" generation of word processing software with two crucial benefits. First, although the number and variety of features is rising, the prices have not. Second, as the graphics, text-oriented DBM (Data Base Management), and text search capabilities show, modern word processing software packages are seldom just word processors. Think of them, instead, as a new type of integrated program, whereby each vendor is moving to claim some of the new turf. An example of a very sophisticated software package is Ashton-Tate's <u>Framework 2.0</u>. This software program is a very effective and potent word processor with very potent utilities attached. The marketeers make their software sound like heaven — buy all the power you can.

In contrast, users like a writer or editor, whose major task each day is writing and editing, may prefer a word processing software package like <u>Microsoft Word</u>. It is a new powerful word processing package which one would choose because of its careful attention to style and format (achieved through style sheets) and its exploration of laser and other printers for quick desktop publishing. Other staff members would then send drafts of their documents which have been translated to ASCII first to be edited or incorporated into another document by the writer or editor.

The middle manager, meanwhile, provides an illustration of a least-cost option. This person might use a desktop organizer software package

such as <u>Sidekick</u> which is produced by Borland International, and would be supplied with enough word processing for a draft of a short letter or a memo, make notes for future reference, or maintain a list of tasks. Because the program resides in memory along with the other software being used, the word processing function is always available. These middle managers will already know how to use this software package, so additional training would not be necessary. Most software package desktop organizers offer a simple word processing feature. Another memory resident software package would be Microsoft Corporation's <u>Windows</u> which comes with <u>Microsoft Write</u>.

<u>Personal WordPerfect</u> might suit the middle manager or the staff employee just fine for drafting reports, proposals, and memos. The secretary might do editing and other finishing work, such as generating table of contents and indexes using <u>WordPerfect 4.2</u>. A graphic artist might design displays following the managers instructions. One key feature of all Macintosh run word processors has been their ability to inject charts, pictures, and other graphics into a document. This ability in word processing is beginning to appear in machines running MS-DOS/PC-DOS as well. However, MS-DOS/PC-DOS systems still lag behind; they can rarely show anything but rudimentary graphics on the screen with the text.[11] The ability to draw lines and boxes on the screen is also important. Surprisingly, this feature is more common among the IBM PCs and compatible systems than Macintosh systems. If the artist used a program other than the word processor software, either the secretary or

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[11] Charles Weston, "A Day in the Life of a Technical Writer," <u>Byte</u>, November, 1986, pp 94-95.

the artist could be responsible for including the graphics in the text.

Persons who are in charge of training can use different versions of the same software for training to conserve their own time as well as that of their staff. For instance, organizations that use <u>Samna+</u> or <u>WordPerfect 4.2</u> would want to keep <u>Samna I/II/III</u> or <u>Personal WordPerfect</u> on hand for new users. The less sophisticated programs usually offer the same user interface as the most powerful programs. one caution, though, particularly as more vendors market custom tailored programs, one needs to verify both the identity of interface and upward compatibility of text so users can upgrade easily, if necessary, as they become proficient. Micro's <u>Easy</u>, for instance, produces text which is usable either directly by <u>WordStar 3.xx</u> or after conversion by <u>Word Star 2000</u>, but <u>Easy</u>'s user interface differs from those of the other two programs. [12]

As conversion facilities improve, buyers will have still another option available: buying the best program for each task without having to worry about file sharing. Today, for instance, buyers might choose <u>Volkswriter 3</u> for users whose main task is typing tables and <u>MultiMate Advantage</u> for users who need heavy-duty mail merge capability. Limited site licenses becoming more widely available, may make such options economical if the MIS (Management Information Systems) staff and training staff can supply the needed support.

When file sharing is required, one should check into options other than ASCII which preserve formats as well as text, such as DCA translation. <u>WordPerfect 4.2</u>, converts files to and from DCA, from

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[12] Malcom C. Rubel, "<u>WordStar 2000</u>," <u>Byte</u>, September, 1985, p. 291.

WordStar and MultiMate formats. Before purchasing an expensive software package, it is wise to test typical sample files to assure that what emerges from the conversion is usable and that the process is not too cumbersome or complicated for regular use.

Organizations that use Wang equipment and Wang work-alike, such as MultiMate products and OfficeWriter, can swap files between PCs and dedicated Wang hardware preserving most format codes. A bonus of shorter learning curves is the result. Glenn H. Watts, Director of the Office of Budget, Planning and Analysis at the University of Wisconsin-Madison, reported that Wang users usually need no more than 30 minutes to become productive on OfficeWriter. [13]

Where speed is concerned, power users — such as those whose work involves mainly writing or editing on the word processor —might find slow products create a severe hindrance, other users may not notice. For instance, Samna+ and other similar counterparts justly have been accused of being extremely slow, but their in-context help ranks with the best available. Samna products are very user friendly and are almost self-teaching, making them quite valuable for occasional users.

Some packages such as WriteNow, allow both parallel and snaking columns and display them on the screen. Snaking columns are sometimes called newspaper-style columns. A single story can run to the bottom of one column and then continue at the top of the next. Nota Bene can handle multiple columns in different languages side by side, with some words wrapping left to right and others right to left, depending on

which is appropriate to the language. Manuscript which is produced by Lotus Development Corporation makes it easy to re-size, move, and swap columns.[14]

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[13] Carolyn J. Mullins, "Word Processing in the Age of Specialization," Information Center, April, 1986, p.48.

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[14] George A. Stewart, "Lotus Manuscript," Byte, November 1986, pp. 91-101.

CHAPTER IV

ALLEGORY

Allegory is a word processing program which resembles the Wang word processor. It offers much of the editing ability of Multimate Advantage or Multimate. It is a page-oriented program, which means that the operator breaks pages precisely as it is written and changes which affect the length of the page require that a repaginate command be issued before the print command is given.

Allegory keeps the document in memory to the extent that it can even though it shows only one page at a time. Only one page is available in the screen buffer at any one time, but the operator can minimize visual discontinuity by creating a "long" pages as the text is being entered or edited and then breaking these pages into standard-size pages when ready to print the document. The operator is not interrupted by disk activity when he/she crosses a page boundary, movement between pages is more or less instantaneous, and repagination is faster than in MultiMate. But should the extra security afforded by a save-as-you-go-style of page orientation be wanted, switching to the program's optional "auto save" mode will accommodate this task.

Allegory does not use the menus within its editor, opting instead for a separate key for each command. It employs a separate Execute key (not the Return key) as a command terminator. It uses the gray plus key

for "Execute" and the gray minus key for "Cancel." These choices seem more logical than Multimate's use of the F1Ø key for "Execute" and the Esc key for "Cancel." It also frees the use of the F1Ø key for other functions which the user might want to assign.

The program's normal operating mode is overstrike, which means that new keystrokes replace existing ones in their path. To make insertions, the operator presses the Ins key. The characters ahead of the cursor drop down to the next line, returning after the operator has typed the insertion and pressed the "Execute." For deletions the operator presses the Del key to highlight the unwanted text and then presses the "Execute." The program accommodates extended text delation by pressing the Del key and then highlighting by use of the key which ends the operation. For example, if the operator wanted to delete the rest of the paragraph, first press the Del key, then press the Return key, and finally the "Execute" key.

Like the Wang, Allegory attaches a summary screen to each document the operator creates. The document's author, the word processing operator, as well as also presenting system-generated statistics concerning date and time of the most recent edit, printing, and the number of keystrokes are recorded into this summary screen. The system also creates "index documents" from these summary screens, which means the program can do such things as print a list of documents created by a given word processing operator.

Allegory does the same thing many other word processors do — it gives the user a special area in which to enter the header or footer string. Headers and Footers are declared in separate "page frame" that

is, issue a "Goto" Page H command to set up a header or a "Goto" Page F command to set up a footer. This approach has the virtue of not making one position the cursor at the bottom of the page before declaring the footer (as one must do in MultiMate), but it limits one to a single pair of headers and footers per document.

The program's ways of searching and replacing are unconventional, but they work.[15] As soon as one types the first character of the search string, Allegory follows through the text from the point of the cursor and finds the search string in the text. When the operator types the second character, the program locates the first occurrence of character 1 and character 2 together, so that by the time the operator has finished entering the entire search string, Allegory has highlighted what is being search. When one issues a Replace command, Allegory assumes the cursor is already on the text that is to be replaced. After highlighting that text and the "Execute"key is pressed, the program types the replacement string.

The program does not have a window function, but it does offer a "Super Edit" command that lets one switch quickly from one document to another. One can easily place a document in memory and begin working on a second document. When the operator quits the second document, the program returns to the place in the first document which was previously being edited.

Other noteworthy features include password options at the library and document levels, an "Exchange" command that transposes two letters

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[15] E. Atkinson, "Allegory," PC Magazine, February, 29, 1988, pp. 92-106.

with a single keystroke, text macros for creating boilerplate, and command macros for automating routine chores. It supports thirty-six printers and offers a "generic" printer driver to accommodate printers not on that list.

If Wang word processing is what is needed and keystroke-for-keystroke compatibility with MultiMate is not required, Allegory offers a lot of value for a very personably price.

Benchmark Word Processor

Benchmark Word Processor has many advanced features: footnote handling, built-in math, text and command macros, a spelling checker, and even a graphics feature that lets the user draw simple charts. The program is part of a family of Benchmark programs, including a graphics program, a spreadsheet, and a database manager, which can all be run from a menu-driven program called the Benchmark Administrator. Choosing the word processor gives a menu of editing and printing options. If one is to revise an existing document or create a new one, data screen is created which describes the document being created or worked on. The program then goes to the editing screen where the operator chooses between insert mode for text entry or editing mode for text revision. The program works hard to make sure one knows what mode is being used. When beginning an insert, the program opens a large gap in the text in front of the cursor. A secretary might enjoy this feature because it clearly marks the insert point in the text.

Perhaps the program's strongest point is its print formatting. At any point in the document, one can change margins, tabs, and other print parameters with little effort. Its math function is also impressive, allowing one to add a column of figures using just a few keystrokes. It includes a full range of arithmetic functions. Also a powerful column manipulation feature with which one can move or swap columns of text or numbers.

There are several weak points to Benchmark Word Processor. There is no way to save the document onto a disk without interrupting the editing session. Saving a document returns the operator to the main menu, then the computer has to reread the document into memory to go on editing. This is a nuisance and makes it less likely that one will save the document at frequent intervals, a practice that should be adhered to. The reference manual is poorly organized and inadequately indexed. Even basic program functions like copying and deleting lack index entries. The manufacturer recommends a hard disk for running this program. Hard disk users will be inconvenienced by the fact that all of the documents produced must reside in the same directory as the program.

DisplayWrite Assistant

DisplayWrite Assistant is a corporate word processor that mimics the dedicated workstation predecessor, the IBM Displaywriter. The program is powerful in many areas and lacking in others. DisplayWrite Assistant relies on numerous menus, the function keys, and a few Ctrl-

alphabetic combinations for its command structure. The text entry screen contains useful information such as the name of the document, the page number, and the line number.

The program's formatting capabilities are powerful. One can choose to display the formatting codes for editing and change the format anywhere in the document. System defaults can be changed at will. The file handling is average. The document must be named before it is started and a files directory is available for choosing a document for editing. The document name is the usual eight or less characters. The programs automatically adds the extension .TXT if the author did not assign an extension.16

The display is not a WYSIWYG software program. For example, double spacing is not shown on the screen but boldface and underlining are displayed. The movement of the cursor is very limited. The cursor cannot be moved by word, sentence, or paragraph, to the beginning or end of a document.

When writing one must manually end each page if an accurate representation of the page count is wanted. If changes are then made to previous pages or new formatting coeds are inserted, the document must be repaginaged for it to be printed correctly. The block command allows the operator to underline or boldface text, but it will not allow one to save blocked text to another file or to append one file to another.

Blocking text for cut-and-paste operations are accomplished easily and logically. The search and replace commands are case-sensitive but

16 Carol Ellison and Marcelline A. Brown, "DisplayWrite Assistant," PC Magazine, February 29, 1988, pp. 118-122.

requires many keystrokes. <u>DisplayWrite Assistant</u> includes right, left, centered, and decimal tabulation, overstrike, prompted or automatic hyphenation, subscript and superscript options, text columns but not snaked, math columns with calculations, and a mail-merge option. The program is not copy protected.

The most frustrating option is the spell checker. It will not check words during editing. One must tell the speller the document that is to be checked and the page range. The speller relies on the operator to make the corrections and will not suggest word spellings.

There is no provision for saving the document in memory under a different name, nor is there a quick save feature. To save any changes the edit mode must be exited and the entire document is saved automatically.

<u>DisplayWrite Assistant</u> is packed with useful features that any word processing department or professional can use. But getting these features to work smoothly is another matter because there are just too many menus and keystrokes necessary for even the simplest of tasks. It may be recommended for an office or professional who had been using the IBM Displaywriter on a mini-frame or main-frame.

Displaywrite 4

<u>DisplayWrite 4</u> unlike its little sister <u>DisplayWrite Assistant</u>, is a capable, powerful, corporate word processor. The program is not copy protected and can be installed easily in any personal computer system.

The program is menu driven and its menu commands depend on function keys and a few Ctrl-alphabetic key combinations. The main menu gives the operator numerous choices: Create, Revise, Paginate, Print, Profile, Spelling, and Merge Documents to name a few. The Profile allows the user to change the system defaults such as formatting, printing, and color choices for the screen if a color monitor is used.[17]

The printing options using the paper feeding, switching fonts and formats, and other details is managed very easily. The blocking of text to be moved or copied is easy. Multiple lines are available on the headers and footers and one can turn off the page numbering, the headers and footers for the first page of the document.

The spelling checker can be used during writing and one can check the spelling of a single word or the present page, but it is much faster to exit the document if the entire document is to be checked. Unlike <u>DisplayWrite Assistant</u> this program suggests corrections to the spelling when requested.

The display is not WYSIWYG as double spacing is not shown and the formatting codes are hidden. The bold face and underlining characters do appear on the screen. The cursor can be moved by word, sentence, and paragraph or to the beginning or ending of the document. A very helpful feature is the "Goto" key which gives instant access to specific pages.

The page management is very much the same as the <u>DisplayWrite Assistant</u> program requiring "long" pages and then repagination after any editing has been done. The documentation in the manuals is much better

[17] William H, Stewart, "<u>DisplayWrite 4</u>, Version 1.0," <u>PC Magazine</u>, February 29, 1988, pp. 122-124.

for DisplayWrite 4 than it is for DisplayWrite Assistant, but one must remember that IBM is not noted for having good manuals.

Executive Footnoter VI

This software package is noted for its footnoting feature and is targeted primarily toward academicians and other professionals who need the footing feature.[18] It has the ability to turn the footnoting into a straightforward task. Creating footnotes with this program required that the writer simply place two less-than symbols in front of the footnote and two greater-than symbols after, i. e., <<your footnote>> and the Executive Footnoter VI will complete the rest of the task of placing the footnote at the bottom of the correct page and numbering them. It can also handle endnotes, but the program cannot handle both endnotes and footnotes in the same document. Automatic table-of-contents generation, automatic two-level index generation, and a full range of formatting features for printing are also available. Other advanced features includes soft hyphens, right-justified tabs, and the ability to print text centered as well as in the more common ragged-right or fully justified formats.

The Executive Footnoter VI has a maximum file size of 27 kbytes, but the software package has the ability to chain files and to insert files into the current file at print time. This enables the writer to

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[18] Robert Ausura, "The Executive Footnoter," PC Magazine, February, 29, 1988, pp. 135-138.

fit a long document on a single disk with a series of these short files. There is no pretense to be WYSIWYG screen formatting and there is no color capability if the user is using a colored monitor. Since the program is written in BASIC, the program is very slow when using almost every task, from simply moving the cursor from the top of the screen to the bottom to the search-and-replace feature. The built-in file manager is unable to read any files whose names are not in its list. This causes the program to also be unable to convert or import files from other word processing software programs but it does have the ability to print these foreign files.

Executive Secretary 6

Executive Secretary 6 is a multi-packaged software which contains not only a word processor with a spelling checker, but also a communications package to be used with a modem and telephone and a file manager which can handle mail-merge tasks and file management tasks also. There are a generous amount of features, but most of them seem to be hampered by slow response.[19]

Executive Secretary 6 operates in one of three editing modes. The "edit" mode allows the user to move the cursor, make selections from a menu, and enter commands from the keyboard, but does not allow any actual editing. The user must move to another mode to edit, but loses

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[19] Susan Davis, "The Executive Secretary, Release 6," PC Magazine, February 29, 1988, pp. 138-140.

the ability to move the cursor. The third mode, called "special edit," allows the user to do some of both but is limited to a single line of text. For the accurate typist transcribing final copy, the inability to move back and forth from editing to typing and the relatively slow cursor movement may not pose a problem.

The printing tasks are worked in either of three modes. While in the "edit" mode, the document may be printed from the cursor forward in either draft or letter quality format, but when the final document is printed, the "Fancy Print" mode should be used. This mode provides a menu to choose many parameters such as: line length, top and bottom margins, single or continuous sheets, number of copies, and page numbers.

The package file management section will allow each record to have up to thirteen lines and up to one hundred ninety-nine records per file. This program will allow the user to sort on a single key, but will not let the user specify a compound criteria. For example, the user may get "Sales > 10,000" but could not obtain "Sales > 10,000 and Salesman = Smith."

The low cost of the program and the ability of the program to operate on a machine with 128 bytes of RAM and support for the IBM PCjr operating in 40-column mode are its best selling features.

Executive Writer

The Executive Writer was written for the executive who is on the

run and feels that he/she does not have time to memorize the word processing commands necessary to operate other software packages. There is generous and excellent on-line help and for most writers no template is necessary. There are many features found which are not available on most packages of this price range. Some of which are as follows: footnoting, automatic indexing, table of contents, macros, 1-2-3-graphs, and page headers/footers which contain both odd and even options. The four selections of the main menu allow the user to begin writing or retrieve a document, get the directory for any drive, print a document and quit. The edit or the print sections are separate and the user must move through the main menu to access one from the other.[20]

The prompt lime is one of the notable features of the Executive Writer. The most commonly used commands -- help, text reformat, page layout, margins, centering, special codes, boldface, underlining, document/non-document modes, and cursor jump -- are assigned the function keys F1 through F10 and each is listed on the prompt line at the bottom of the screen. There are also thirty more commands assigned to the ten function keys in combination with the Alt, Shift, and Ctrl keys. In addition the Ctrl-F1 combination allows the user the option of recording ten macros of his/her own choice.

To call an existing document to the screen from the editor, the user must know the name of the file. Otherwise he/she must exit to the main menu, use the directory function to list the files, return to the editor and the enter the name of the file wanted. The more smooth

[20] David L. Hoffman, "Executive Writer," PC Magazine, February 29, 1988, pp. 140-142.

keystroke in some other software packages allows the user to merely highlight the file in the directory listing and retrieve it.

Executive Writer is an easily learned professional word processor and it is powerful enough for most jobs that do not require a lot of fancy margin changes. The sister software package Executive Filer works well with the file management capabilities and also sells for $69.95. The two together will have the user putting together a report quickly by searching through the "file cabinet" for the needed information.

Final Draft

Final Draft is a word processing software package which is easy to master and still has some of the features which are found in the top professional word processors. It offers a spelling checker, a thesaurus, automatic index generation, print merge, limited footnote handling and text macros. It also has a feature appreciated by legal secretaries or editors of manuscripts which keeps track of successive revisions to the document and marks them on the printed copy.[21] By selecting the text which is to be edited, this part of the document is moved to a clean screen with only a ruler line at the top of the screen. The insert mode for entering text or the command mode is then chosen. By pressing the Esc key twice the mode may be changed from one to the other. Final Draft readjusts the current paragraph to match the current

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[21] Barbara Krasnoff, "Final Draft," PC Magacine, February 29, 1988, pp. 142-146.

margins as the revisions are made and when the text is inserted into the document the program readjusts the margins to fit the rest of the document. One of the best features of this method of editing is its speed. It scrolls from screen to screen in less than a second, and if the document will fit entirely into available RAM, jumping from the beginning to end of the document is also instantaneous. There is also a automatic save feature to protect the user's work from a possible system failure.

The thesaurus, which was only usable on a hard disk system, is a handy tool for both the professional and novice writer. The spelling checker contained 80,000 words in its dictionary and gave suggested corrections when a word was found to be misspelled. The headers/footers feature was available only if a hard page symbol had been typed. In addition to this, the system would not override this hard page symbol if text had been added or deleted. This eliminated the use of headers/footers for most writing styles. There is very little printer support or drivers yet available for this software package. For the price, there are others which are more desirable.

FinalWord II

For the business person who is not satisfied with a fixed command structure or the standard keyboard layout, FinalWord II is just the program. This program is one of the most powerful, sophisticated word processors available for the IBM PC and the IBM compatibles on the

market.22 FinalWord II allows the user to set up his/her own formatting commands. The user will have to spend many hours learning and studying the manual to determine FinalWord II's own peculiar programming structure. This manual of over five hundred pages also explains most of all the advanced features: automatic indexing and cross referencing, odd and even headers and footers, search and replace with wildcards, key reassignments, multiple windows, keyboards macros, spelling checker and more.

The software program's text-formatting capabilities are just as flexible as the program itself, though they will also require some effort to learn. FinalWord II has made a commitment to text-embedded formatting commands rather than on-screen commands. Formatting commands begin with the at sign (@). For example, @i tells FinalWord II to print in italics while @foot produces the footnotes. The program will allow the user to redesign or rename any of these delimiters. A disadvantage of the off-screen formatting is that the printed results of the trickier @ commands may result in something that is not expected. Fortunately, the program gives the user a "view" option that presents the text on screen as written, so that the user may check the effect before printing.

Leading Edge Wordprocessor

The Leading Edge Wordprocessor is rich with many features similar

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22 Wayne Harding, "Final Word II, Version 2.2," PC Magazine, February 29, 1988, pp. 146-148.

to those used in Multimate, but much easier to learn and at a considerably less cost. It has the ability to create boilerplate, print from a queue and has a spelling checker included with it. The program is not copy protected and can be easily installed on a hard disk. There is a on-disk tutorial included for the novice. Furthermore, the manual is broken into sections for the experienced user as well as additional sections for the learner. There is an on-screen help as well as a quick-reference pamphlet and a keyboard template. The "help" comes when one presses the key he/she needed to have help with. The difficulty with this system is that the operator must know which key is used for which function. For example, the gray minus key is used to "switch" either disks or drives. If the operator does not have the knowledge of which key is used for which function, the help can become very frustrating as the user presses different keys to learn where the help is located. The management of the files within the program is similar to that used in the DOS system of sub-directories. The user will first make and name a folder. Then the file document is first named and placed within a folder before it is created. The file can be copied or moved into another folder. It can also be copied or moved into another drawer (floppy disk). The menu allows the user to rename, backup, copy, move, create, either a document or the entire folder. File names are not restricted to the regular eight characters plus a three character extension. The menu also gives the number of pages, the time and date of the last edit of each document. The user is allowed to set one "standard document" with in each folder. The tab settings, margins, and other defaults will then become effective for each of the documents

within this folder. The program offers a WYSIWYG display and the text is automatically reformatted with the insertion or deletion of text. Headers and footers may be shown on the screen where page breaks occur if the operator chooses. The program can be set so that the document is backed up prior to any editing as well as periodically saving the edited version as the user progresses through the document. This feature is to guard against a power failure. The user has the best of both worlds because as much of the document is stored in RAM as possible making global functions such as repagination much faster than it is with many other word processors and at the same time the user can edit a document which is larger than memory because the program is not entirely RAM based. Leading Edge avoids the use of alphanumeric keys used with the Ctrl and Alt keys used by many word processors and uses instead a menu system much like that used in Lotus 1-2-3. Macros are available in three choices: (1) text macros stored frequently used words, phrases, or paragraphs, (2) key strokes consisting of data entry, command selection or both, and (3) customizing macros which add to these as user defined macros, prompting for data, which are very helpful when filling out forms and creating standard legal documents. The copy and move functions are a copy of the Macintosh design using a cut-and-paste command. To move a part of text, the text is highlighted and moved into a buffer. The cursor is then moved to where the text is to be placed and then "pasted" from the buffer. The copy function is similar but "pasting" the text before the cursor is moved, and then "pasting" again when the cursor is moved. The text remains in the buffer until it is written over with another "cut-and-paste" function and can be "pasted"

again as many time as wanted. The user can also name this text in the buffer if the operator is to use this same cut several times. Another feature which is a pleasure to use is the restrict search-and-replace operation to whole words as well as strings of letters. This feature allows the user to replace the "son" with "daughter" in the text but at the same time the "son" in Nelson is untouched. The spelling checker contains 80,000 words and the user can add words to the dictionary for permanent use or for use in a particular document only. The other feature which pleased the author was the use of the delete key. This was the only word processor program which the deletion of text from the screen kept pace with the pressing of the del key. All of the other word processors allowed the pressing of the del key to get far ahead of the text removal and excessive text was deleted.

MASS-11PC

The MASS-11PC program is actually a VAX/VMS mainframe program that has been formatted for the personal computer. It is ideal for companies which are already using the VAX system and introducing the IBM PC or compatibles into the business. It has integrated communications software so that the personal computer can act as a VT-100 terminal for the VAX either directly or over the telephone lines. Microsystems Engineering strongly recommends that its new users attend a format training three

day class which is available for $1800 per person.23 They do limit the classes to six persons. There is also a tutorial and supplied sample files which are very useful after attending the classes.

The first four function keys (F1, F2, F3, F4) are assigned commands which have special meaning. The F1 key means to "Initiate", the F2 key means to "Execute", the F3 key means to "Attribute" and the F4 key means to "Cancel." For example, pressing the letter "D" followed by the F1 key will set the program to delete. To delete a block the user would press D key, F1 key, highlight the block, press F2 key. By pressing the F4 key would cause the program to un-delete if it were done before any other series of keystroke operations were initiated.

MASS-11PC uses database-like list processing so that the user can sort and select elements from the data and can also handle macros, footnoting, and mail merge. The draw feature allows the user to draw boxes and then switch into a vertical mode and type a title along the side of the graph. There are also some embedded commands that allow the user to draw circles and arcs if a laser printer is available.

The spelling checker is not a strong feature of this program. Many common words such as computer and mainframe are marked as misspelled even with the 50,000 word dictionary.

For the non-VAX corporate users, the MASS-11PC has some features that can be valuable to the scientific or technical writer. For other users, there are programs which are much cheaper, much easier to learn, and more functional for the general user. A volume discount of $295 is

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23 Frank Becan, "MASS-11PC Word Processor," PC Magazine, February 29, 1988, pp 209-211.

available for those institutions or corporations which purchase 1,000 units or more. The program is updated four times a year, the first update comes with the program but each subsequent update costs $100.

Microsoft Word

Microsoft Word is different than all the other word processors in many ways. To begin, the software program lets the user talk to it with a mouse, and it may talk back to the user in graphics. Both of these features are optional and can be done with the keyboard as well as a non-graphic system. The mouse is convenient for such things as defining text blocks, setting tab stops, opening and sizing windows, scrolling to distant parts of the document, and selecting commands from menus without having to tab through all the options sequentially. Many users find that there are some things for which the mouse is convenient and when it is not, simply ignore the mouse and use the keyboard.24 If the graphics adapter is used, the on-screen formatting characterization shows what is to be seen on the paper: caps and small caps, italic characters, underscored words, double underscored words, uses strikeouts, subscripts and superscripts figures. The only character modes which are not displayed graphically are variations in font width or height and proportional spacing, but in fully justified and proportionally spaced text, the user does get to see where the lines will break.

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24 M. David Stone, "Microsoft Word," PC Magzine, February 29, 1988, pp. 212-216.

The program organizes most of its formatting options under three headings: (1) character, (2) paragraph, and (3) division. Character formatting commands set text attributes such as bold face, underlining, and italic. Paragraph formatting commands govern alignment style (ragged right, centered, or justified), indentation, (first line or entire paragraph, left or right, positive or negative), line spacing, and line spacing between paragraphs. Division formatting commands define overall page specifications including margins, page length, position of headers/footers, and starting page number. All formatting commands can be selected from a menu, but as an alternate, they can also be selected by issuing Alt keystrokes. The formatting commands can be saved into what Microsoft Word calls "Style Sheets." It is a separate entity and can be attached at any time to any document. Hence, the user can make one "Style Sheet" for memos, another for external correspondence, a third for formal papers, and a fourth for personal letters.

Another way that Microsoft Word is closing the gap between word processing and typesetting technology is when the user tells the program which printer he/she is using, the program creates a menu of fonts which are available on that printer. One advantage occurs when a business uses a particular brand of printer for its final documents, because then the author of the document can specify the font selections wanted. The program is copy-protected and does not allow the user the freedom to move software on and off the hard disk. It can be installed on the hard disk only once, and cannot be "de-installed." Another frustrating item is the screen speed. In graphics mode on an 8088 system, Microsoft Word

is slow. Be sure to try it out on the system before purchasing it if speed is one of the concerns. Running the program on an AT personal computer creates no problem.

The on-screen help and tutorial are among the industry's best. The manual is well written and of high quality writing. The mail-merge is very functional and the spelling checker is rapid. The sophisticated memory management scheme that keeps editing changes only in RAM and merges those changes with the disk when editing is complete. This is a disk space saving device as well as keeping a backup protection during the editing.

Microsoft Word's sophisticated features are laid out well in a highly accessible fashion. It is a product that will last the user a long time. The users will probably be discovering new capabilities of the program for a long time.

MultiMate Advantage

This word processor was designed for the corporate business world. MultiMate Advantage was made to emulate the dedicated Wang word processing machine. With each new version more and more features have been added to make the tasks of the clerical help more productive. It is known for its automatization of routine letters, boilerplate text, and form letters.[25] This latest version has incorporated a management

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25 Michael L. Brown, "MultiMate Advantage II, Version 1.0," PC Magazine, February 29, 1988, pp. 217-223.

function to include a set of information handling commands so that the data can be sorted and retrieved. It is probably the closest personal computer word processor to the dedicated Wang word processor.

MultiMate Advantage uses forty function keystrokes as well as thirty-six more Alt key and alphabet key combinations. If the user is starting on MultiMate Advantage without any Wang experience, the learning process is slow, but for the experienced user, these key combination for commands allows the user to move quickly through the entering and editing without having to wait for the menus as in the menu system. The program is page oriented and as the user fills one page it is removed from memory and a new blank page is on the screen. The principle advantage of the page orientation is that it minimizes the risk of accidental data loss. The disadvantage of page orientation is the loss of continuity of thought for the user. The "long" pages trick can be used with this program and allows the user to have up to 150 lines per page.

If the operator is willing to put forth the effort of learning the program, there are a lot of extra features available. Among these features are: (1) macros, (2) a facility that allows pauses for the operator to enter data at positions in a form letter or boilerpoint, (3) math columns and row functions, (4) table of contents and footnote generators, and (5) one is able to purchase alternative keyboards for input of some foreign languages. It is probably one of the most efficient word processing programs available if the user is looking for increasing productivity of the clerical staff.

MultiMate

The design of the MultiMate 3.3 Series Professional Word Processor is based on the Wang dedicated word processor. It is suited for clerical word processing because it closely mimics what a typist must do with a document which has been marked for revision. The manual is divided into three sections: a beginner's book complete with a tutorial, a reference manual, and an advanced user's guide. The manual is well written, but only has an index for the reference manual section. A large clear keyboard poster is included in the manual and would be helpful to have mounted somewhere near the computer to allow the user to know the definition of the function keys, the Shift-function keys, the Alt-function keys, and the Ctrl-function keys.

If the user wants to edit a document by inserting some text, the user must place the cursor at the position where the text insert is to be placed, then by pressing the Ins key the text from that point to the bottom of the screen drops down and leave a half screen for the insertion. For the user who is editing their own document, this process can be discerting because the rest of the text is not on the screen to help with a continuous thought process. The operator also is unable to make an insert in an insert without first completing the first insert, then proceeding to the second insert.

MultiMate 3.3 is a page oriented word processor. The program keeps only one page of a document in memory at any one time and moving from one page to another requires disk access. On a floppy disk system this

takes about 4 or 5 seconds for a single-spaced page. Some of this can be avoided by making "long" pages, but there is a limit of 6,000 characters-per-page and exceeding this limit will cause a "page full" message to be displayed on the screen. This page orientation also required the user to repaginate after each editing to restore the pages to the correct length for printing. With MultiMate 3.3 the problems of having footers moving to the top of the next page during repagination has been fixed by making the headers and footers page associated. There is no feature in the package to allow the user to make a table or a paragraph remain on the same page without actually going through the document page by page and putting hard page breaks where the user wants them. Upon editing the document again, these hard page breaks must be removed and the entire process repeated.

If one plans to have this word processing program in the office setting be reminded that it is not a good word processing program for the user who is entering and editing their own text, but is excellent for the clerical worker as long as everyone is working with this same package who will need access to the document.

My Word!

My Word! is a word processing software package which closely emulates WordStar but leaves out some of WordStar's advanced features such as backward search. One place where My Word! differs from WordStar is in its approach to menus and help screens. It has only one help

screen, turned off and on by pressing F1 and F2.[26] My Word!'s main menu offers just four choices: (1) Edit, (2) Print, (3) Change Drive, and (4) Exit. The search-and-replace is claimed to run eight to ten times faster than WordStar because My Word! holds the entire file in memory at once. The files can be chained together with the program's Link File command, but the largest individual file is about 50 Kbytes even with a 640K-byte machine.

My Word! uses the straight ASCII files rather than using the high-order character bit for its own purposes. The program comes with utility modules for converting files in both directions. Other utilities include a word-counting program and a customized program for setting colors and other defaults. The spelling checker, which is optional to purchase, is very slow. There are other limitations like not showing page breaks.

The manual is written in straightforward, conversational English, which makes it suitable for even a first-time computer user. The manual infers that most users would rather not move their hands from the keyboard when editing, not even to use the arrow keys; the magic diamond — E, X, S, and D — as four points of the compass for up, down, left, and right — is much faster for touch-typists to use than a mouse or commands. For those who disagree, My Word! makes use of the cursor keypad, including the Home and End keys. The tutorial section of the manual anticipates and explains most problems a new user might encounter. This section covers such details as device time-out errors

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[26] Robin Raskin, "My Word!," PC Magazine, February 29, 1988, pp. 223-224.

on printers and how to eliminate them. The price of the word processor alone is $35. At this price users of the WordStar may find it a worthwhile purchase for the manual alone. According to the manual, MyWord! will store up to 32,767 keystrokes in a single macro, and the program will store as many sets of macros on disk as needed and can read or write a macro file at any time while editing. One other feature worth mentioning is the way the program uses the full IBM character set. Enter Alt-P, and everything typed after that will be high-order characters. Enter another Alt-P, and typing is back to normal ASCII characters. If the user is looking for an inexpensive scientific or foreign-language word processor, My Word! may do the job.

NewWord

NewStar Software's latest version of its WordStar-compatible word processor is NewWord. It is more than just an upgrade from NewWord. It has a lot of features added, including a spelling checker, macros, math capability, index and table of contents generation, faster operation, and a higher price tag from $249 to $349.[27] Floppy disk users will be happy to know that the entire program including the spelling dictionaries still fits on a single double-sided floppy disk. This ability to use the spelling checker without swapping disks is a floppy-disk user's dream. This spelling checker can check the spelling of a

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[27] Sylvia Helm, "The New NewWord," PC Magazine, February 29, 1988, pp. 224-228.

word or an entire document. When it finds a word that it does not recognize, the checker proposes alternative spellings that can be swapped into the document with a single keystroke.

The new math is impressive. The program has the ability to add up all the numbers in a given block of text. The user simply defines the column as a block, presses a couple of keys and the sum appears. This feature also works if the user wants to add a series of numbers embedded in the text. The program is smart enough to find the numbers and give the sum. In addition, one can write simple programs that calculate individual results for each letter, invoice, or proposal in a mailing list.

The indexing features offers a novel twist. The user may compile a quick index be telling the program to index every word in the document. Working with this initial index, an exclusion list of words not to be indexed are removed on the next pass. The program also allows an index to be created in the conventional method of marking words and phrases in the document that are to be included in the index. The program's table of contents feature allows up to nine separate tables to be compiled.

The program lacks many of the high powered features such as footnoting. But for anyone who is familiar with WordStar word processing and/or has to contend with a floppy disk system, this software package might be worth considering.

Nota Bene

Nota Bene has so many academic writing features that the MLA

(Modern Language Association) has endorsed its use—the first program so honored. The program has a built-in text-searching function that lets it handle reams and reams of notes. · It has so many features that the user can still finding new powers and potentials buried in the encyclopedic manual even though he/she has been using Nota Bene for some time.

Nota Bene is based on two previous programs, XyWrite 3.1 and FYI 3000 Plus. Dragonfly Software licensed those programs, modified them substantially, and combined them into Nota Bene. XyWrite itself is a formidable word processor. FYI 3000 Plus is a free-form text-retrieval program that lets the user search through disks, full of information, for the exact text that one wants. Together, their features make Nota Bene ideal if the user collects lots of notes and then write papers or books. This feature lets the operator make huge note bases on a disk, and then permits the user to automatically search them, even employing Boolean expressions to pinpoint what is wanted more accurately.

The text-based manager in Nota Bene lets the user index quotes, outlines, or any sort of text files for rapid retrieval. It accepts Boolean expressions to search through 750 to 1000 pages of notes in a single floppy text base or 50,000 pages on a hard disk, in as many as eight subdirectories. The user can make every word a key if files are limited to four pages per document, or can make up to 500 keywords per entry. The user can re-index and extend text bases over multiple disks. Therefore, from within the word processor, one can search for related material by content and then read it directly without leaving the word processing program.

Nota Bene can turn out many different types of lists on a document. It can make a table of contents up to five levels deep, generate an index, and make one or two bibliographies per document. The program has lots of standard functions like undelete, widows (up to nine), list sorting, four-function math, macros, context-sensitive help, box graphics, widow and orphan control, on-screen underlining and boldfacing, and mail merge. It also has style sheets like those in Microsoft Word for the PC for saving document formats.

With its academic emphasis, Nota Bene also has some predefined style sheets for MLA (Modern Language Association), Chicago Manual of Style, and other standard style. It has a file-comparison feature for delineating the differences between documents. For foreign-language use, Nota Bene has multilingual keyboard layouts with access to all western European language characters and specific layouts for Britain, France, Germany, Italy, and Spain. For high-resolution displays, there will soon be Nota Bene versions that handle biblical and modern Hebrew (with right-to-left wordwrap), classic Greek, old and middle English, eastern European, and transliterated eastern and Asian languages. Dragonfly Software has demonstrated Nota Bene running multiple column with different languages side by side in different columns, some of which read, and therefore wrap, from right to left and some from left to right. For printing such complete texts, contains improved laser-printer support, including the sue of a virtually unlimited number of fonts per document and variable vertical line spacing.

Finally, Nota Bene offers all the foot notes and end notes a scholar could want. It lets one specify the numbering system for

multiple-level footnotes of any length, which it can then keep on the appropriate page, collect at the end, or change back and forth. A cross-referencing facility automatically updates any comments the operator insert aimed at particular passages in a document to the latest positions of those passages.

"Nota Bene is a bit like the Sunday paper. You can ignore everything except the sections you want, but there are enormous resources available if you need them."28

OfficeWriter

The OfficeWriter is another word processing package which copies the Wang dedicated word processor. It is easier to learn than either MultiMate or MultiMate Advantage.29 The program contains a tutorial which allows the user to experiment with a pre-entered document and learn by experimenting on this document. The gray plus key is used as the "Execute" key. To delete some text the operator presses the Del key, blocks the text to be deleted, then presses the "Execute" key. OfficeWriter has the drop down feature when the operator is using the insert function and also has included the push-ahead insert mode as well. This feature allows more usage of the program in the executive office as well as the clerical office.

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28 Edward Mendelson, "Nota Bene," PC Magazine, February 29, 1988, pp. 228-229.

29 Catherine D. Miller, "OfficeWriter," PC Magazine, February 29, 1988, pp. 230-256.

The program is another page oriented program, but the entire document is kept in memory during the editing processing so moving from one page to another is no longer a problem. With this feature the user no longer has the security of not losing the entire document upon a power failure or other catastrophe. This program is often compared with the MultiMate programs. Although they share some of the same structures, they were independently developed. One of the main differences between the programs is that OfficeWriter is much faster during the editing mode because the document is kept in memory. The main differences between these programs is that OfficeWriter is easier to use and to learn. If a business manager is looking for a Wang type of word processor this is one that should be seriously considered.

PC-Write

This may not be the fastest and fanciest word processing software package around, but it is definitely the cheapest. Written by Bob Wallace in 1983, he started selling his word processor for just ten dollars, or $75 as the registered user price, For that price it is easy to overlook its few shortcomings. PC-Write is a shareware program which means that one can get a copy of the disk which is on disk manual for free from local user groups, or it can be ordered from Quicksoft. If the decision is made to use the software, the registered user fee is $75. This fee entitles the user to a complete, printed manual, a quick-

reference card, telephone support, a newsletter, and two free updates.[30]

The features chart includes: the ability to create headers, footers, table of contents, footnotes, handle mail merge and split-screen editing. These capabilities are accessed either through embedded dot commands, or through the many function and special key commands. The user can automatically transpose characters, undo the last block deletion or move, create macros to automate repetitive tasks, and set and reset temporary margins. If the user is so inclined, he/she may redefine the entire keyboard. PC-Write produces a standard ASCII text files, so it is suitable for program coding. This also makes it fairly easy to import and export the work to and from other word processing software programs.

Peachtext 5000

Peachtext 5000 is part of a software package which includes a 20,000 word spelling checker, a manager which lists the documents on the disk, and an electronic spreadsheet program as well as the word processor itself. It is a rather easy to learn, but the limitations of the soft-ware make it more suited for a personal word processor rather than for office use. Upon entering the program, a menu allows the choice of edit, print, and display directory. A second menu is then provided to the user when choosing the edit. This menu allows the user

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[30] Mike Falkner, "PC-Write," PC Magazine, February 29, 1988, pp. 264-267.

to set the format using tabs and margins. Embedded commands such as LM10, SP2 (left margin set at 10, double spacing) may be set or changed at any time. These embedded commands are logically named with full words; however, the program uses some of the ASCII characters such as the ampersand (&) and the at symbol (@). The program also uses the function keys for such functions such as F1 for backward and F2 for forward while leaving the PgUp and PgDn unassigned and unused. The spelling checker is inadequate with only 20,000 words listed, and the program lacks such functions as backward search and decimal tabs. The printer support and drivers for a number of dot matrix and daisywheel printers is excellent. The directory manager works well, as does the printing of mail labels and printing of lists. There are more valuable word processing packages available for the buyer which do more and cost less.

Perfect Writer

This word processing software package has pop-up menus to guide the user thorough the processing of simple documents. This word processing software package also uses a complex hierarchy of embedded commands to give the user advanced formatting features. Perfect Writer serves as an excellent role model for a complete word processing package. It comes on three disks which can be integrated with the other command modules: Perfect Calc, Perfect Filer, Perfect Link, Perfect Graph, and Perfect Speller and Thesaurus. The documentation for the entire set is also

very complete.

For the simple writing tasks, <u>Perfect Writer</u> is very easy to use but much too slow with the pop-up environment except for the novice user. From the main menu the user proceeds through a series of menus that are activated by using the arrow keys with a Return key or typing in the first letter of the command. This facility is foolproof for the novice, but the intermediate user will tire of the long delays between menu selections and the length of the typical menu-driven command sequence. In conjunction with the menus, each of the ten function keys has two associated functions. A function key overlay template is supplied with the program.

The search-and-replace feature are easy to use, yet powerful. Provisions exist for backward and forward searching as well as the ability to search other documents and to use the <u>Thesaurus</u> program. At the time of the insertion or deletion of text from the document, the document must be manually reformatted, and only a paragraph can be reformatted at a time. This is also true when the user wishes to change the document's margins.

<u>Perfect Writer</u> tries to be two different word processors to two different target markets. If one is seeking a simple word processing software, there are others available at a better price, and as a sophisticated word processing software it just does not make it. The 50,000 word spelling checker is inadequate and sometimes records embedded commands as spelling errors. The Thesaurus works rather quickly, completing a search for a synonym in about ten seconds.

PractiWord

<u>PractiWord</u> is a <u>WordStar</u> twin, but it sells for much less. The list price of $99 makes it a bargain. The editing environment has some constraints. The ruler line has exclamation points to discriminate tabs, but no numbers. Instead, the page, line, and character counts are kept at the bottom of the screen. One idiosyncrasy here is that although the dot command is set for double spacing, the counters will still be calculating pages on the basis of single spacing.[31] Also, when changing the margins in some text, the document will have to be reformatted paragraph by paragraph. The program also does not distinguish between soft and hard returns in a editing process. The program does not offer a change of pitch, but does allow the user to use combinations of bold, underlining, double spacing, superscripts and subscripts. Each of these features are shown on the screen in bright colors with one color for the letters and often a second color for reverse video blocks for those using a color monitor.

When editing on <u>PractiWord</u> the name of the file to be edited on the main menu must be typed on the screen. If misspelled, the program informs the user that the file cannot be found and directs the user to press any key to continue. When doing so, the program opens a new file using the misspelled name. There is no way around this procedure. Perhaps it will improve the typing or spelling of the user. The manual

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[31] Tamara Johnson, "<u>PractiWord</u>, Version 1.09," <u>PC Magazine</u>, February 29, 1988, pp. 292-293.

needs to demonstrate some features, especially macros, more completely. The index needs to be much more thorough and specific. For example, words like Move and Replace are not listed. The tutorial assumes that the user already has read the manual, though going through a tutorial first is usually an easier introduction to new software.

Professional QWERTY Word Processor

Professional QWERTY Word Processor tries hard to act like a typewriter, making the transition from the typewriter to the word processor nearly painless. The program is somewhat a WYSIWYG with the ruler line at the bottom of the screen. Instead of a blinking cursor, a large upside down U appears above the line, acting like the old margin indicator of an IBM Selective typewriter. In fact, the only thing that seemed to be missing is the paper advance lever. This program is easy to learn and use. The function keys follow a logical order and work in pairs.[32] F1 and F2 move forward and backward by character, F3 and F4 move forward and backward by word. The function keys also work in pairs with the Shift, Ctrl and Alt keys. For example, the F10 is the search function and Shift-F10 is the search and replace function. The number keypad is used solely for character attributes such as underlining, bold, subscripts, and others. If the numbers are needed, they are typed from the top line, much like a typewriter. The margins and tabs are set

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[32] Robin Raskin, "Personal QWERTY," PC Magazine, February 29, 1988, pp. 268-270.

in the ruler line, and the rest of the printer codes are set via dot commands such as those used in WordStar. The program has such features as automatic widow and orphan control. It also has a sophisticated mail-merge feature which can use such programs as dBASE III and other database files. There is no spelling checker, but since it uses ASCII files, a generic stand-alone spelling checker will usually work. However, this would involve an additional cost. There is no automatic file saving feature or a reminder to save one's work. One may exit the program before saving the document, but the program asks the user whether the program should be saved before exiting. There is limited printer support for the program and only one print driver is attached to the program at any one time. When a new printer is purchased, the company will furnish a new print driver upon request. It is a good word processor for the secretary who is frightened of the computer since it mimics the typewriter more than any other word processor discussed in this paper.

The Professional Writer's Package

The Professional Writer's Package is a combination of Edix (text editor), Wordix (text formatter and table-of-contents generator), Spellix (spelling checker), and Indix (index generator) united under The Professional Writer's Package shell. Because it is designed to provide the quickest route to accomplish a task, the program surrenders nothing to the demands of self-explanatory menus and WYSIWYG formatting. The program makes it easy to perform many operations, but it is very

demanding to learn.

The program contains features that are foreign to many word processing software packages as well as the features found in many deluxe word processing packages. It can move columns, several at a time, and move or copy them elsewhere. The program has a 50-line undo buffer and allows multi-line headers/footers, decimal tabs and automatic hyphenation.

Some of the differences between The Professional Writer's Package and the other word processing software are imposed by the lack of on-screen formatting. If the user wishes to insert text into the document, the cursor is placed where the insert is to start, pressing the Return key makes a line for the new text to be typed. There is need to re-justify the lines on the screen. This is done by the software. Another difference occurs when the user prints the document, then edits the paper copy, then returns to the screen to enter the changes. Because formatted printed and unformatted on-screen versions of text can appear very differently, the user may find it more difficult to locate text on the screen when working from a printed document than when working with a WYSIWYG-oriented program. This document may be imported as an ASCII file into a word processor with WYSIWYG, but there will be carriage returns at the end of each line which must be removed before the word processor can reformat the file. Some word processing software allows the user to use a search-and-replace feature, but others require it to be done manually.

The Professional Writer's Package is best used when complex features are required such as: (1) serpentine, (2) index, (3) table-of-

contents generation, and (4) word counting. The macros facility goes far beyond those in other word processing software packages. For those who want or require no on-screen formatting, this could be a package to consider.

Samna Word Plus IV

Samna Word Plus IV is a very powerful word processor which includes many features such as macros, line and box drawing, windowing, table of contents and index generator, math, undo, column block moves, cursor jumps forward and backward by word, sentence, line paragraph, screen and page which are present on the more powerful word processors. The program uses a safety-first approach to word processing every nine seconds it writes to the disk every time the user creates or edits a document.[33] Samna Word is a program which is easy to learn and a pleasure to use. The use of the function keys has a set pattern. The odd numbered keys are the start of a sequence which responds which a prompt on the screen. The even numbered keys are attributes such as underline, bold, and caps. The Shift key when used with the numbered function keys removes the attribute. For example, where the F8 key starts the bold, Shift-F8 ends the bold attribute. The program uses the Esc key for the "help" menu. The format of the program sets up a different toned margin and page breaks, but everything else is WYSIWYG.

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[33] Rubin Rabinovitz, "Samna Plus IV," PC Magazine, February 29, 1988, pp. 302-305.

The program does not have an automatic save or backup while the user edits the document. If the user does not make a backup copy before editing, the original document is gone should the user want to change his mind. The program may be set to automatic backup, but there is no reminder in the manual or screen to do so. The spelling checker is slow. It must check the dictionary for alternative spellings when such simple errors such as transposing two letters is the error. The dictionary allows additional words and allows them to have only capitals as well. The move and the copy features are also slow as well as the search and replace feature. Samna Word also requires that the user press the Return key to answer a prompt as the writers of this program believe that the operator should be physical with the responses. Reviewers of previous versions said that this program was much faster since it was written in C rather than assembler language. They must have really been slow to respond.

The Smart Word Processor

The Smart Series from Innovative Software, Inc., is a control program which contains a communications program, a built-in calculator that does simple math, a time-management module for scheduling appointments and prioritizing tasks, a line editor for writing programs and a full featured word processor that includes mail-merge, spelling correction, and footnoting. The Smart Word Processor can be purchased either as part of the Smart integrated series of software (a spreadsheet

and graphics, database, word processor, time manager, and communications programs) or as a stand-alone program with the communications, time manager, and calculator programs still attached). The Smart Word Processor provides two operating modes: (1) test entry and (2) command selection. If the user selects any of the five basic menus to execute commands, the program suspends text entry mode. The program devotes a large amount of the screen space to keeping the user informed. When appropriate, pop-up menus appear that supply variable information, i.e., when Load command is selected, a pop-up window will display the names of available files. When the Smart series is purchased as an integrated productivity package, it competes head to head with heavyweights such as Symphony and Framework. This requires Smart to pay attention to such things as merging the graphics created with the separate Smart spreadsheet module into text. The word processing software package should be considered as a stand-alone as well as an integrated package.

Spellbinder

This word processing software package's heritage goes back to the very beginnings of micro-computing. It was originally designed for Exidy Sorcerer, one the very first home computers. Spellbinder is of particular interest if the user wishes to run the same program on a number of different types of computers.

This program can be very difficult to learn to master. For example, before a file can be printed it must first "Get" it (or "Read"

it). To "Get" a file, one must first go into command mode, though the cursor continues to sit in its edit mode position. The user can not "Get"<filename> but must first "Get" and then respond to the prompt for "Read" <filename>. Then it is learned that the cursor must be at the top of the text before the print command "PA" is given, for the program is set to print from the cursor to the end of the document. Typing only a "P" would have produced the first page of the document. To exit the document the command "GD" (get done) is given. Other unfamiliar usage of syntax is "Hold" rather than moving a block of text and then "Unhold" at its new location.

In addition to the learning problem, the program is considerably slower that most of the other packages. To scroll up a page takes approximately two seconds. To insert text in a document, Spellbinder defaults to the overwrite mode, then drops the remaining text to the bottom of the screen. The cursor keys cause the document to move differently then other word processor packages such as, PgDn key will get a full 25-line scroll of text but will lose the last line of the previous screen. End key moves the cursor to the end of the text, but the Home key simply shuttles the cursor back and forth on the same line. The Back Space key duplicates the left cursor arrow and deletes nothing, but Shift-BackSpace deletes the character at the cursor's left.

The program was designed to incorporate numerous user-defined tables and macros. If the information in the reference manual should prove to be insufficient for a particular application, the company will supply the more advanced technical/macro manual.1 The manual has 460 pages divided into 11 chapters, 5 appendixes, an index, and a 45 page

IBM PC supplement. Reading the manual is similar to reading a mathematics textbook, where every word and line is important and not to be skipped.

SuperWriter

This word processing software package is suitable not only for the day-to-day memos, letters, and mass mailings, but also is very suitable for the academic or professional who writes long documents. SuperWriter has over one hundred embedded commands which let the user choose between broken or solid underlining or set the intensity of boldface. Another important design feature of the program is its underlying flexibility.

The manual suggests that if the operator uses several standard formats the user can set up several program disks, each with its own set of files which would use SW.LTR for letters, SW.MEM for memos, and choose the correct SW.xxx file before starting to create document.

SuperWriter has one of the better mail-merge features. The mail-merge function automatically reformats text to adjust to the length of data being inserted. It even allows conditional commands so that the user can select specific groups of files from a database. The mail-merge feature works with data files that use fixed length fields, commas, or carriage returns to indicate fields. This covers a wide range of database programs, including dBASE II, dBASE III, and R-base.

The spelling checker is more of a typo finder. All it does is find words it doesn't recognize, show them to the user, and let the user tell

it which ones to mark in the file. The file is then searched for marked words and manually corrected.

SuperWriter was designed originally before the IBM PC came into dominance in the micro-computer field. Unfortunately, it was written for a CP/M program and much of its heritage shows. The manual also carries much of the CP/M writing also and can be distracting to the novice computer operator. The tutorial consists of a fifteen page pamphlet giving a whirlwind tour of how to use SuperWriter. This gives the software package a rating of hard to learn, but easy to use. The one caution is that if one's work tends to use a lot of numeric tables or tends to use different formats in the same document, then SuperWriter may not be the appropriate choice.

Volkswriter Deluxe Plus

One of the very first word processing software packages written for the IBM PC was Volkswriter. The latest version is still one of the outstanding, combining one of the fastest editors with an easy-to-use set of print-formatting codes and a competent print-merge module. The setup is almost automatic, the tutorials are a set of on-disk interactive which allow the user to experiment with the program while learning, and there is a good well-written well-indexed manual.[34]

Volkswriter Deluxe Plus uses the function keys to invoke all

[34] William H. Stewart, "Volkswriter Deluxe Plus, Version 1.0," PC Magazine, February 29, 1988, pp. 314-318.

editing commands, so the user does not have to keep track of modes. When an alphabetic or numeric key is pressed, text is entered; press a function key and a command is issued. The program scrolls from screen to screen at top speed. By the time the key is released, the command is complete. If the user is a lightening-fast typist, the utility program will speed up the keyboard almost three fold. Because Volkswriter Deluxe Plus uses straight ASCII files, it functions easily as a program editor and has little difficulty in accepting files from other programs.

The 170,000 word dictionary with a smart hyphenation that knows where to hyphenate words by itself, on-screen math, column sorting, print-queue management, and print-formatting features such as automatic reformatting option that will realign jagged lines with a paragraph when inserting or deleting text has been done.

One of the lacking features in this program is the Undo; therefore a slip of the fingers can cause a large block of text to be lost, or the entire document itself. Another weak feature is the search-and-replace feature.[35] It is case sensitive, causing the operator to search-and-replace the same document several times to complete the task.

WordPerfect 4.2

WordPerfect has a long list of word-processing features. If it had an integrated outline processor and more windowing flexibility, it would

[35] Robert Kendall, "Volkswriter," PC Magazine, February 29, 1988, pp. 318-320.

stand alone at the top of the heap. In portability, WordPerfect far surpasses Microsoft Word for the personal computer, its closest competitor in this respect; WordPerfect runs on a huge variety of computers. It is currently available on IBM computers, MS-DOS computers, the Apple II series, and some minicomputers, and WordPerfect Corporation is busy porting it to everything from the Macintosh to IBM mainframes. The software package even comes with a toll-free phone number for technical assistance.

WordPerfect has a mail-merge function, a built-in spelling checker with a 115,000 word customizable dictionary, and a thesaurus. It can do in-text math, sort lines or paragraphs, captures and handle macros, drive a myriad of printers (including laser and PostScript printers), and work with up to 24 columns of text or figures in either of two styles: snaking newspaper columns or tabular columns. WordPerfect has an undelete feature, a document-summary page, line numbering, an on-line tutorial, and a document preview function. The commands that perform most of these functions are implanted in the document and can be hidden or displayed for direct editing.

The user can specify blocks of text that he/she wishes to protect from editing; center blocks vertically on a page; employ headers and footers (including on alternating pages); draw lines; use overstrike, strike-out, and redline (vertical bars) markings, and automatically renumber outlines. Compiling a table of contents and an index is a simple matter of marking the desired passages and striking some function keys. The footnoting feature allows both footnotes and end notes and many options for numbering and positioning these notes. "Widow" and

"Orphan" control alleviates the problem of stranded text at the end or beginning of a page.

WordPerfect's macro facility is extensive, and it lets the user chain macros and include commands for repetition and conditional execution. Its sorting feature can work on up to nine keywords. The manual contains a section called "Flights of Fancy" that suggest some complex operations the operator can direct by combining the mail-merge and macro features.

The program has a timed backup feature—the user specifies the length of time—that periodically and automatically saves the work to WordPerfect files. The import and export facility can read and write WordStar, MultiMate, DCA, FFT, DCA/RFT, Navy DIF, and ASCII files.

WordMARC 4.1.1

WordMARC 4.1.1 is aimed at word processing departments and other corporate groups that want to use a single word processor on several different brands of personal computer. The program's additional capabilities for using alternate character sets and for designing special fonts also make it a contender for scientific word processing and foreign language use. The program's menus are the "point to the command, press Enter" although an accomplished user can speed things up be removing the menus and typing in the menu selection names instead.

Nearly all the features for formatting the final text are part of WordMARC 4.1.1's format line, including line spacing, margins, and page

length. The header and footer features of the format line enable the user to set top and bottom margins as well as any number of header and footer lines that can be centered or forced flush left or right. The user can use the format line to designate the placement of periods, commas, and hyphens for aligning columns of numbers of text.

WordMARC 4.1.1 has some interesting file handling capabilities. It easily converts files between WordMARC 4.1.1 format and ASCII formats and can also encrpt the document, after which the user must enter a password to retrieve it. The spelling checker can create a listing of misspelled words as well as flag them in the text, but the user has to correct the misspellings himself. Other special features include a very workable mail merge and the availability of Greek/math and chemistry/math character sets. The user can take advantage of WordMARC 4.1.1's superscript and subscript capabilities when creating scientific or mathematical characters within these fonts or when designing his/her own alternative character sets.

The manual is divided into a tutorial which is extremely thorough, a user's guide which is a model reference text, and a technical reference which suggests that it is intended for use in a corporate setting where a systems person would set up the program for the users.

The next version of WordMARC 4.1.1 will revamp the numeric keypad according to IBM PC conventions. It will also incorporate more streamlined methods for deleting word and moving the cursor to the ends of lines and documents.

Word Result

If the user is looking for an international word processor, the Word Result from Sweden might be the solution. Only the English version was reviewed. It is an extremely powerful processor with some very powerful features. It is multilingual so the operator can choose between different languages, and then the prompts and commands are in the chosen language. The program can also be purchased with Calc Result, a spreadsheet program. The main menu has a series of twenty commands which are started with either the function or Shift-function keys. These twenty commands are at the bottom of the screen, but the user must press the Ctrl key to find out which key goes with which feature since they are not displayed on the screen at the same time. This powerful program is not always the most convenient. For example, to center a title the user selects justify, text center, and then all text below this command is centered. When the title is complete, the user then must justify, text left to "uncenter" the rest of the text.

The block and copy feature is like the Leading Edge WordProcessor where the text is first highlighted and then removed into a buffer. If the text is to be copied, it must be first moved back to where it was originally, and then the cursor may be moved and copied into the second position. The search and replace features, called Find and Change, will only do one change at a time, but pressing the F1 key causes the function to repeat the process.

This program can use only disks which have been first formatted

using the Word Result program. Any document which has been saved on a PC-DOS/MS-DOS must first be copied to the other format, and then using a ASCII file command it is entered into the program for editing. This bit of information is not in the manual, so there are probably other glaring errors in the manual as well.

The main objection to using of this program is the customer support, which is in Sweden. It is expensive, and with the time difference the programers are not always available to answer questions. More programs are becoming available with multilingual capabilities which would be perhaps more workable. There are many features in this software package, but the ease of learning and poor documentation are not complementary.

WordStar Professional

A leader in the word processing software field, and almost ancient by micro-computer standards (nine years old), WordStar Professional is still considered by many as the best choice for the business man. This software package comes with a word processing program, WordStar 3.31; with a MailMerge 3.31, for form letters; CorrectStar 3.3 for spelling checking; and StarIndex 1.0 for specialized printing, including automatic generation of indexes and tables of contents.36

WordStar is a classic word processor. Because it was originally

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36 Bruce Brown, "WordStar Professional, PC Magazine, February 29, 1988, pp. 326-327.

designed for a generic CP/M computer, the user can operate WordStar using only the central array of white keys on the PC keyboard, plus Shift and Ctrl keys. This is particularly suitable for speed typists since it eliminates most hand movement. It is ideal for people who must sometimes work on CP/M or non-IBM compatible DOS systems. Another positive feature is that MicroPro International Corp. offers site licensing plans, corporate discounts, and local area network agreements.

The world famous "WordStar diamond" of the S, D, E, and X keys controls simple left-right-up-down cursor movement. Typing Ctrl and the first letter brings up another menu with all the possible second letters. In this modern era these are called pull-down menus. Although the WordStar menus are not as good in appearance as those of slicker, more-modern programs, the command strategy is virtually identical to the power mode of Framework.

WordStar retains very little formatting information with the saved file. It does not remember, for instance, whether spaces that precede a line are the result of manual spacing, a tab, or a centering command. The user cannot globally change a paragraph indentation throughout a document by any method except a clever search-and-replace.

Users of the nearly obsolete SpellStar spelling checker will find a real marvel in the fancy and modern CorrectStar. With a 65,000 word dictionary, suggested corrections, and full menu control, this spelling checker can stand with the best stand-alone or integrated spelling checker. The text-editing screen shows both dot formatting commands and mail-merge form. For those users who prefer the WYSIWYG screen these dot commands can be quite confusing. The program is usually preferred

by those persons who like to revise or individualize their programs.

The extensive tutorial with an introduction to computers, a quick lesson, and six more detailed lessons is complete. The two disk set does not use the cursor keys and makes the user choose instead the Ctrl-letter combinations.

WordStar 2000 Plus

This nearly new word processing software package from MicroPro is more logical and easier to learn, but oldtimers do not think there is enough of the old WordStar to remind the user where it came from.[37] It now has seven disks, a reference guide, a training guide, an installation guide, and an advanced features guide. The editing screen is now divided into two windows. The upper third of the screen holds the editing menu that lists all the command categories and is divided from the working area by a ruler line. The experienced users can eliminate the main and secondary editing menus from the screen, which makes more room for the document. This windowing function that MicroPro has added provides another definite plus by allowing the user to view two or three different documents at the same time.

One of the attractive features is that the user is able to assign long phrases to keys and avoid some typing strokes. For example, the phrase, "WordStar 2000 Plus" can be entered into this document by

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[37] Wayne Harding, "WordStar 2000 Plus, PC Magazine, February 29, 1988, pp. 327-330.

pressing Ctrl-F4 each time the phrase is needed. The mail-merge and the spelling checker are also quickly and easily assessed from the editing menu.

This software package also includes the CorrectStar spelling checker and MailMerge; TelMerge, a communications program; MailList, a pre-formatted mailing list utilities; and Starindex, which creates an index and/or table of contents from the document.

There is some doubt that the old WordStar users will change willingly to it. MailList seems to be well received, but the TelMerge is only an ordinary communications program. The complaint that the program is extremely slow may not be entirely justified. The old users who are operating on the old WordStar with the menus removed, might not be the best judges of the speed of the new program. Operators have complained that if the cursor is moved too fast down a document, the screen goes blank until the words actually catch up.

XyWrite III Plus

This word processor is totally command driven, and while its tutorials make use of such full words as SAVE, these quickly give way to the more cryptic abbreviations (SA) that power users prefer. The program employs functional keys with Alt, Shift, and Ctrl combinations in order to implement commands and makes full use of the keypad's cursor and scrolling functions. The user executes XyWrite III Plus commands from a command line at the top of the three-line screen header that

includes a convenient prompt line and user-controllable ruler. The Ins key toggle between the default insert and overwrite modes.

The normal text display is almost a perfect WYSIWYG. Fully windowed two file operations are possible, and the user may choose either a vertical or horizontal split screen.[38] DOS command can be executed with leaving the program. The speed is one of the plus factors in choosing this program. The forward and backward scrolls are nearly instantaneous, including from top to bottom of the document. Another factor which may cause the user to choose this program is the ease with which the user can customize its operations at a number of different levels. If the user is not pleased with the arrangement of the function key assignments, he/she simply calls up the keyboard table and edits it just like one would any file of text. Perhaps a Dvorak layout or a Portuguese layout is needed for some users in a business, here is another use of the key assignments. The advanced features are excellent, including a block move which includes numeric columns; index and table-of-contents generators; an excellent mail-merge which is easy to learn; a performing calculator arithmetic which can perform either on its command line or within the text; and footnoting capabilities which can even show different separators for footnotes that wrap between pages.

The weakness of the program is in the printer control. It does not support proportional printing, vertical margins cause troubles, and snaking text for multiple-column printing is not supported.

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[38] Robert Kendall, "XyWrite III Plus, Version 3.52," PC Magazine, February 29, 1988, pp. 338-342.

Chapter VI

The Trend for Future Word Processing Software Packages

When examining the many word processing packages available at the present time, the business manager should be aware of the trends created by the newest word processors on the market. That is not to say that the word processing package which is purchased for every business should contain all of the latest and complex features. But knowledge of what is available should be used to help determine whether a special feature is important for meeting a particular organization's needs.

One of the most obvious trend in word processing is the injection of desktop publishing features into both old and new word processors. These features are likely to include merging graphics into documents, controlling type style and size, controlling character positioning by such processes as micro-justification, and driving laser printers. The combination of word processing and desktop publishing is sometime called "document processing."

A second trend is the combination of word processors with other applications in integrated business-oriented packages. These can handle almost any sort of writing short of a full book or an extremely long academic paper. The word processors often provide the benefit of easy transfer of data between text documents and the other application in the

package. For example, a combination word processor and data base is useful if the operator spends much time switching about database results. Combining word processing with a spreadsheet is helpful if one needs to incorporate spreadsheet tables or charts into business proposals.

A third trend is the use of RAM-resident notepads for simple writing such as jotting down a note, preparing a paragraph to send on-line, or capturing text to merge with another document. Also, the writers of word processing software are always striving to be as WYSIWYG (what you see on the screen is what you get on the printed paper) as possible. Most of the users understand more from an exact picture of what is to be printed than from a page of special codes. With WYSIWYG the operator sees a graphic page break such as a line of dashes across the entire screen instead of a page-break symbol such as a dot (.) or a symbol such as the circle with a cross attached at the bottom of the circle at the left margin. Superscript characters would be raised to their appropriate position instead of highlighted or tagged.

Most word processing software packages now include a feature which checks the spelling of the edited document. The size of the "spelling checker" list of words may vary and their dictionaries may differ, but the user can customize most of them with words from their own situation and expertise. This is particulary helpful if the document contains many technical words which are not common to a regular dictionary. Also available on many software packages in addition to the dictionary is the thesaurus.

Buyers who are considering multilingual word processing software

face many problems. New criteria to be considered include the ability to type words, to hyphenate and check spelling in more than one language and to swap text files back and forth regardless of whether they are written in English, American or British, French, Norwegian, or another language. According to WordPerfect Corporation's Bruce Bastion, president of the international division, "Translating software is easier than keeping manuals up to date."[39] Although the difficulties involved in manufacturing multilingual word processing software may be great, market growth, both in the United States and abroad, clearly shows that manufacturers are slowly but surely overcoming them. Forty-seven different software packages were listed in the August 18, 1987 issue of PC Week.[40]

In an article by Merv Andrian, a major attempt has been made to rank the word processing software into three groups.[41] The three mainstream categories are: corporate, professional, and personal. At the same time he divides each of these main categories into four specialties: scientific, integrated, outline processors, and those requiring special operating systems. He goes on to define the professional classification as being for writers, analysts, executive secretaries, and academic personnel. These programs are rich in features but are difficult to learn. The average cost of these

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[39] Maureen Faust and Carolyn J. Mullins, "Programs Must Be Multicultural to Work Effectively," PC Week, August 18, 1987, pp. 61-64.

[40] "Firms that Manufacture Word Processing Software for Multiple Language," PC Week, August 18, 1987, p. 67.

[41] Merv Adrian, "A Taxonomy of Word Processors," PC Magazine, May 26, 1987, p. 203.

processors is four to five hundred dollars although the street price is about two hundred and fifty dollars. The corporate classification of word processing software will meet the needs of clerical staffed word processing departments typically found in large companies. Many of these companies have graduated their secretary pool for the IBM Selective typewriters to the Wang word processors. They are often page oriented which means that each page is treated as a single document in a string of documents to form a larger document. Non-page oriented processors treat the document as a single flowing document. These word processing software programs are priced similarly to those in the professional classification. The personal word processor software classification is for executives who produce their own memos and are otherwise occasional users. These typically are priced at about one hundred dollars, but available on discounts ranging from fifty to one hundred dollars.

Conclusions

The decisions regarding which package to choose often revolve around how long a learning curve one can afford and which sophisticated functions need to be preformed. Some of the more powerful packages require extensive training and practice before users become comfortable with their use and find them easy and almost automatic to use. The friendlier packages will save learning time but probably will cost time in the long run precisely because they don't automate many production

tasks that are required.

One should resist the temptation, though, to select a word processing software package with all the latest and most powerful features because the new power exacts a price. Past a certain point, ease of learning declines as the number of features rises. In WordPrefect 4.2 for instance, the number of new features far exceeds the number of function keys, Satellite Software International piled features on the sub-menus invoked from function keys; but some of these features are not intuitively associated with the main task of the function key used to invoke them. MultiMate products use both function key and alphanumeric keys combined with "Ctrl" and "Alt," but the results defy easy recall except by frequent users. Volkswriter 3 produced by Lifetree Software in contrast, remains fairly easy to use, largely because it has not reached that crucial point at which the function keys offer double and triple possibilities.

When purchasing a new package, one should keep in mind that new features may translate into greater training needs. Documentation, which is much improved from that of earlier eras, frequently suffers from having been rushed to market. For instance, the manual for WordPerfect 4.2 lacks critical reference information that has caused many users to loose many of their documents which are in the computer and also to damage or destroy the software program itself. Some products, such as Microsoft Corp.'s Microsoft Word 4.0, Volkswriter 3, and WordPerfect 4.2 come with good tutorials; others do not.

Lack of speed also plagues some products. WordStar 2000,[42] MultiMate Advantage, and Samna+ work much more slowly than do OfficeWriter, WordPerfect 4.2, and Volkswriter. Microsoft Word 4.0 lies between the two groups.[43] If laser quality printing or other fancy output is required, set-up for final printing could be handled by the publications department. As the quality of desktop publishing improves, using the skills of trained typesetters and other specialists will become increasingly important for enhancing the quality of the document's appearance. The staff involved may need to learn some new skills, but teaching them conserves managers' time and preserves benefits from the special talents of artists and typesetters.

Overall, the most important consideration remains the potential user's job within the organization and the potential tasks to be carried out. Persuading some individuals to select less sophisticated software package rather than a more powerful product may require tact. Nevertheless, information center planners who keep the organizational context in mind will be rewarded with less demand for support and no loss of users' productivity.

The word processor market continues to be a battlefield. It has defied efforts at long-term domination by several of the largest firms in the software industry. After years at the top, WordStar has dropped

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[42] Barbara Kransoff, "WordStar 2000 Picks Up Speed," PC Magazine, April 29, 1986, P.46.

[43] John Dickinson, "The Business Words of Professional Word Processors," PC Magazine, January 28, 1986, pp.135-174.

out of the race.[44] Instead of a club of insiders, about six programs and companies share three-quarters of the market and another 75 programs compete for the remaining quarter. The leading companies, are WordPerfect Corporation with WordPerfect, Microsoft Corp. with Microsoft Word, Ashton-Tate with MultiMate Professional Word Processor, MicroPro International Corp. with WordStar and WordStar 2000, IBM Corp. with DisplayWrite and Writing Assistant, and Software Publishing Corp. with Professional Write, First Choice, and PFS:Write.

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[44] Merv Adrian, "Major Word Processors Bet Better," PC Magazine, May 26, 1987, pp. 202-204.

GLOSSARY

Access - To locate the data desired.

Acoustical coupler - A device that holds the telephone receiver and permits the phone to be connected to a modem for sending and receiving messages by telephone.

Algorithm - A sequence of precisely stated instructions for solving a problem.

Alphageometric transmission - A method of sending graphics images from a videotext database through codes for individual pixels. This method produces clearer graphics images than alphamosaic transmissions can provide.

Applications software - A set of programs that direct the computer to solve problems or applications for a user. Some applications software include electronic spreadsheets, word processing, and data base management systems.

Artificial Intelligence (AI) - The branch of computer science concerned with making computers behave in ways that resemble intelligent human behavior.

ASCII (American Standard Code for Information Interchange) - A 7-bit code used in computers to represent numbers, letters, and special characters.

Attributes - In relational data base terminology, the parts of a tuple

or record. Attributes describe/identity entries in a relation.

Auxiliary storage - Storage outside of the central processing unit, sometimes called secondary storage. Magnetic disk and magnetic tape devices are the most common forms of auxiliary storage.

Automatic backup - A feature of some word processing programs, in which the SAVE command results in the program's storing two copies of a file on disk.

Backup or back up - To copy or duplicate one or more files, for use if the original is destroyed or damaged.

BASIC (Beginner's All-purpose Symbolic Instruction Code) - A high-level interactive programming language designed for ease of learning and use.

Baud - A Unit, roughly equal to one bit per second, for measuring the speed at which data is transmitted and received through modems and other communications devices.

Baud rate - An approximation of the number of bits per second being transmitted in a data communications activity. Common Baud rates are 300, 1200, 2400, and 9600.

Binary Search - The technique of searching for a specified item on a list of items by splitting the list in half, then in half again, and so on, rapidly narrowing the search space of the list until the item sought is found. Contrast sequential search.

Bit - A contraction for binary digit. A bit is referred to as either a 0 or a 1. Bits are stored in a computer as a charge of electricity. Usually eight bits are used to make one byte.

Block - A segment of text such as a line, paragraph, page and so

forth.

Block menu - This word processing menu briefly illustrates the commands used to save files, exit from the editing function, and perform other disk, file, marker, and block operations while editing.

Block move - In word processing, a method of revision by marking off a block of text and moving it from one location in a document to another. With some word processors, blocks of text can also be moved between documents.

Block printing - The printing of a group of adjacent blocks that make up a part of the document.

Boilerplate - A form letter or document which is used in the merge process. The blanks are filled with the information entered into the second document and merged before printing.

Buffer - A temporary storage device between two other devices, such as the computer and a disk or printer.

Bug - An error in a computer program which prevents the program from performing as intended.

Bundled software - Software sold as a package with the purchase of a microcomputer.

Bus - A group of parallel conductors used as a path over which data can be transferred between the primary memory, disks, printers, modems and other devices.

Byte - The fundamental storage unit in a computer. A byte is usually made up of eight bits. A byte can store a number, a letter, or a special character.

CAD (Computer-Aided Design) - A graphics editor with which a design

engineer or other specialist can modify a design by using computer techniques. CAD is the graphics equivalent of word processing and could be called designed processing.

CAD/CAM (Computer-Aided Design and Computer-Aided Manufacturing) - An automated system for discrete-products industries which uses CAD to design the product. CAE to analyze its engineering, and CAM to manufacture it.

CAE (Computer Aided Engineering) - A graphics design program which produces an engineering analysis of a design.

CAI (Computer-Aided Instruction) - Interactive use of computers, computer networks, and computerized educational materials to help students learn.

CAPS LOCK key - A key that causes letters to be entered as capital letters rather than as lower case letters without having to continually press the shift key.

Central processing unit (CPU) - The part of the computer where the processing of data and instructions is performed.

Character - Any letter, number, or symbol you can type into one printed document.

Character field - A field that can contain any symbol that can be typed on the keyboard. Character fields cannot be used in arithmetic operations.

Character string - A series or group of characters. "$300" is a character string; so are the words "computer" "abe" "12388" and so on.

Chip - A collection of integrated semiconductor circuits contained

within a wafer-thin slice of silicon. A microcomputer will have 20 or more chips.

Circuit board - A fiberglass or plastic resin board containing an assemblage of silicon chips printed with integrated circuits and mounted in a computer. Sometimes called a card or board.

Code - Program statements written in a computer language.

Coding - The actual writing of a computer program.

Cold boot - The process of starting the computer when it is first turned on. Also called a cold start.

Color plane - Each of the three areas of memory (red, green, and blue) in the display memory of a computer equipped with an RGB video board.

Command-driven system - A software system that allows the user to direct operations by writing program commands rather than selecting from a menu of choices.

Communications program - A program which allows the user to transfer files to and from other computers by means of English-language instructions. Also called a terminal program.

Communications software - A communications program.

Compatible - The quality of one type of hardware or software that enables it to operate on another system.

Compiler - A program that changes a high-level programming language into a machine language.

Computer Bulletin Board Service (CBBS) - A computerized data base users access to post and to retrieve messages.

Computerized typesetter - An electronic programmable typesetter which

formats text for printing according to computerized instructions concerning margins, spacing, type fonts and sizes, placement of graphics, page numbering, and all other typesetting requirements.

Computer mailbox - Storage space in a computer network's central computer reserved for messages sent (data transmitted) to a specific name and computer address. Also called electronic mailbox.

Computer program - A set of instructions that cause the computer system to perform specific actions.

Configured - Software customized to the specifications of the hardware being used.

Control key - An important key on the computer that causes other keys to have a different meaning or use. Many commands begin with pressing CONTROL. Also indicated by ^ or CTRL.

Control character - A character typed in combination with the CONTROL key. Control characters do not appear in a printout.

Copy - The process of making a duplicate file from the original file.

Copy protected - Feature built into the software so that a file cannot be copied from one disk to another disk.

Creating a document - The opening, naming, and original typing or keystroking of a document.

Cursor - An indicator on the screen that shows where the next character to be entered will be placed.

Cursor keys - Keys that control the movement of the cursor on the screen.

Daisy wheel printer - A letter-quality printer that used a solid-font

printing mechanism shaped like a flower.

Data — Unorganized facts or figures that are not yet processed into information.

Data base — A collection or related files stored on a direct access storage device.

Data base management system (DBMS) — Software designed to aid in the creation of, maintenance of, manipulation of, and reporting from a data base.

Data communications — The transmission of data from one location to another, generally over telephone lines.

Data entry — The process of putting text (labels), numbers (values), or formulas into a document.

Data redundancy — The repetition of the same data in several different computer files.

Debugging — Finding and removing the errors in a computer program.

Dedicated cursor control keys — Keys marked with an up, down, left or right arrow.

Default drive (primary disk drive) — The drive where the operating system and the applications software are normally located. On most microcomputers, the primary disk drive is designated as Drive A.

Default setting — Settings the software automatically used if the user does not put in other instructions. For example, the margins are set at a certain place unless the user changes them.

Delete key — Key used to delete the character to the left of the cursor.

Deletion — The removal of a character, a word, or a line from the

file.

Demodulation — The process of transforming phone signals into a digital form that can be used by a computer.

Destructive write — The process of destroying the contents of a byte of storage by entering or writing in a new character in the same byte. The new character replaces the character that was originally in the byte.

Direct asses filing system — A filing system that allows the user to access or retrieve data records selectively from anywhere within the file.

Directory — A list of the files available on the disk currently being used.

Disk — A secondary storage medium consisting of platters made of rigid metal or flexible plastic (floppy disk).

Disk drive — A mechanical device attached to a microcomputer and used to read to or write from disks.

Diskette — A small disk made of a flexible mylar plastic and coated with a substance that can be magnetized. The most popular size for microcomputers is the 5 1/4 inch disk. It is called "floppy" because the disk proper is no more rigid than photographic film.

Disk-loading program — A small program of about 20,000 characters. The entire program is loaded into main memory which in turn means that any and all word processing functions are accessed very rapidly.

Disk map — A technique used by microcomputers to relate disk sectors and tracks to addresses.

Document - In word processing, a collection of one or more lines of text that can be named and saved as a separate entity.

Document files - Files with special commands embedded in them that help control the printer.

Document handling - Copying, deleting, or renaming files using special systems commands.

Documentation - Manuals, tutorials, and other printed materials accompanying computers, computer peripherals, and applications programs which explain there use. These procedures and other program descriptions that have been written, evaluated, and approved.

Dot commands - Commands used with many word processing languages to insert print formatting commands within the text of a document.

Dot matrix printer - A printer that forms characters with dots.

Double density disks - A disk on which data can be written and read from both the top and bottom sides.

Dvorak keyboard - An arrangement of the keyboard that makes keystroking more efficient. Some microcomputers have the ability to switch from the Qwerty keyboard to the Dvorak keyboard.

Download - To send a file from a large computer to a microcomputer.

Dumb terminal - A keyboard-and-screen combination whose only function is to communicate with a computer.

EBCDIC (Extended Binary Coded Decimal Interchange Code) - An 8-bit code that allows 255 different characters to be stored in one byte. The character set or code used by large IBM computers.

Editing - The correction of spelling, grammar, sentence structure, and

other errors.

Editing a document - The deletion, overwriting, and insertion of additional text into a previously prepared word processing document.

Editor - The part of a word processing program which allows the user to create, revise, and store text.

Electronic bulletin board - An electronic data base used as a bulletin board where messages are left.

Electronic mail - Correspondence and data files which have been entered at a dumb terminal or personal computer, sent through a communications software package via the telephone lines to another dumb terminal or personal computer which is attached to a modem.

Embedded computer - A computer that is part of another machine and serves a narrowly specialized purpose. Embedded computers are found in household appliances, automatic cameras, and automobiles.

Encryption - Enciphering of sensitive data, either by programs or by electronic encryption devices which "scramble" data.

End - The bottom of a file. Some microcomputers have a END key that moves the cursor to the bottom the file or the bottom of the page.

Entity - An item, person, or activity around which data is grouped into records.

ESCAPE (ESC) key - A key that serves as a break or cancel key, interrupting or canceling a command.

Executive workstation - An office terminal as used by executives, for the creation of reports and proposals integrating financial calculations, graphics, design, and word processing.

Expansion board — A printed circuit board that is inserted into a microcomputer to enable the microcomputer to carry out additional functions.

Expert systems — A type of artificial intelligence that approaches a problem-solving situation in a manner similar to that used by people who are experts in that type of problem solving.

External memory — A name given to a computer's secondary memory, because the information is stored on disks, magnetic tapes, or other storage media which may be outside the computer.

File — A collection of information stored as a named unit in a computer's secondary memory.

Filename — The name assigned to a file that is to be saved on a disk.

Fixed text — That portion of a document that will not be changed, or example, the unchanged part of a form letter.

Fixed disk — A solid disk sealed in a disk drive unit. Also called a hard disk or a Windchester disk.

Floppy disk — A small disk made of a flexible mylar plastic and coated with a substance that can be magnetized. The most popular size for microcomputers is the 5 1/4 inch disk. It is called "floppy" because the disk proper is no more rigid than photographic film.

Footer (page footing) — What is printed at the bottom of every page.

Format utility — Program that prepares blank disks to accept files.

Formatting a document — Alignment or positioning of text in the document including changing margins, line spacing, page breaks, and other placement options.

Full screen editing — The ability to move about the entire screen using the cursor movement keys or arrow keys deleting items and inserting new items.

Function keys — Keys whose function is defined by the software. Usually found on the left of the key board or across the top of the keyboard. Usually named F1, F2, ..., F10.

Global — In word processing, the command that enables a certain function to be carried out throughout the entire document.

Global replacement — A word processing feature that automatically changes all occurrences of a particular character, group of characters, a word or phrase throughout the document.

Hard disk — A metal disk sealed within a disk drive unit. Holds more data than a floppy disk.

Hard sectored disk — A disk that contains tiny holes punched near the center to mark starting point for each sector.

Hard copy — A printed document.

Hard disk — A magnetic storage disk that is rigid, or "hard" in contrast to the physical flexibility of the floppy disk. the hard disk stores far more data than the floppy, and access is far more rapid.

Hardware — The physical computer equipment and its related parts.

Hard-wire — To connect communicating devices, as for example computer terminals and a host computer, by means of a permanent data-transmitting wire. Local networks are usually hard-wired, while long-distance networks use impermanent connections such as modems, which switch on and off.

Header (Page heading) — The title or other text printed on the pot of every page.

Heuristic search — Looking for the solution to a problem by applying heuristic techniques (as opposed to algorithmic methods) to the exploration of the search space.

Home — The top line of a file. Some microcomputers have a HOME key that moves the cursor to the top of the file.

Home key — A key that move the cursor from wherever it is to the upper left-hand corner of the screen.

Host computer — The principal computer in a network, to whose processor other computers are connected as terminals.

Icon — A small picture of a familiar object shown on the screen in the programs of some microcomputers. Each picture corresponds to some keyboard command: for instance, a picture of a trash basket corresponds to ERASE FROM MEMORY or DELETE. Computers which display icons usually have a mouse to activate the icon and instruct it where to operate. See mouse.

Impact printer — A printer which transfers ink onto the page by striking a ribbon with a print wheel or print head. Print wheels (daisy wheels or thimbles) produce letter-quality copy resembling a typewriter's. Print heads strike the ribbon with a set of wires, producing a matrix of dots to form alphanumeric characters and print graphics.

Infinite loop — A program or set of instructions which the computer carries out in the same order again and again without achieving an end result. See loop.

Ink-jet printer — A printer that sprays ink in either a continuous stream or droplets onto the paper to form characters.

Input — The process of getting data into the computer for processing.

Insert function — Function that enables the entering of text. If the insert function is on, inserted characters are placed between already existing material, pushing the material to the right. If the insert function is off, new material replaces the original material rather than pushing it to the right.

Intelligent printer — A printer which has a microprocessor enabling it to search, sort, and otherwise act as a computer.

Intercolumn — The area between columns on the document.

Internal control unit — The part of the computer that regulates the execution of instructions.

Interpreter — Program that reads a high-level programming language and converts it in a statement-by-statement fashion into machine language.

Justification — The alignment of text flush against a margin. Text is usually left justified, but with some word processing software it can also be right justified.

K — 1,024 bytes. It is usually rounded off to 1,000 bytes. A K is used because it refers to a kilo, which is 1,000. However, technically, 1 K is equal to 1,024 bytes in a computer.

Keyboard — A set of keys that permits users to type data and programs into a computer.

Keyboard templates — Small plastic sheets that fit over the keyboard or a portion of the keyboard as guides to the commands performed

by certain keys.

Laser disk — A secondary-memory storage medium in which a laser records information by burning holes in a disk and then reads the information by detecting the holes. Laser disks store data at a far higher density than magnetic disks, and the laser beam accesses data far more rapidly than a magnetic disk's read-r=write head.

Laser printer — A printer that used a laser beam to trace an image onto a photosensitive drum which is then transferred to paper.

Letter quality printer — A character printer, such as a daisy wheel printer, with output suitable for business correspondence.

Level of menus — Groups of menus including a main menu from which the user can get to several lower-level menus.

LEXIS — A public access legal encyclopedic data base.

Line editing — The process of editing text or other material line at a time.

Line printer — A printer for large-volume use, which can print a line at a time rather than a character or a dot at a time.

Local area networks (LANS) — A system of connected microcomputers located within one building or several close buildings.

Logged disk drive — The disk drive accessed automatically by the microcomputer when a file action such as saving a file takes place.

Logic board — The name for the arithmetic and logic unit, when it is on a circuit board.

Loop or Looping — To repeat a step or procedure in a program until

the desired result if obtained.

Machine language — The actual binary code used by a computer.

Magnetic disk — Computer device used to store data that can later be retrieved in random fashion.

Magnetic tapes — A secondary-memory storage medium similar to the tapes used in cassette recorders, but of much greater capacity. The industry standard for magnetic tapes is 2400 feet wound on a 10-inch reel, the equivalent in storage capacity of several hard disks.

Mail-merge program — A program which creates personalized form letters by combining information from various files at printout.

Main edit menu — The top level word processing menu on which other menus are listed.

Magnetic tape — A tape coated with magnetic material and used to store data and instructions in a series of magnetic spots.

Marking a block — The process of putting a mark at the beginning and end of a block of text to be copied, moved, or processed.

MEDLINE — An encyclopedic database for physicians.

Memory — The part of a computer system in which instructions and data can be stored and from which they can later be retrieved. Main memory, also called primary memory or volatile memory, is for temporary high speed storage and retrieval. Secondary memory, also called external memory, is made up of such recording devices as magnetic tapes and disks. It stores the results on operations that have been preformed in main memory.

Memory-loading program — A huge program of almost 100,000 characters.

All the files in this program have to stay on disk, and the file that you need for any given word processing function has to be accessed from disk, which is a very slow operation.

Merge-print program - Any program which assembles and merges text from two or more different files during printout. See mail-merge program and report-generator program.

Menu - A choice of commands available to the user.

Menu driven system - A software system that gives the user choices or selections of commands and provides a set pattern the user must follow.

Microcomputer - The smallest member of the computer family, the size of a typewriter or smaller, with a microprocessor and facilities for storage and input/output devices. It is the computer most characteristic of the present generation of computers.

Microprocessor - A silicon chip containing the central processing unit of a computer.

Microspacing - A way of improving the appearance of right-and left-justified lines of print by regularizing the spacing between words to within microspaces, or multiples of 1.120 inch. See proportional spacing.

Minicomputer - A general-purpose computer, smaller and less powerful than a mainframe, but with similar multiuser capabilities.

Modem - A device for converting the electrical signals from a computer into signals that can be transmitted over telephone lines and vice versa.

Modulation - The conversion of the computer's digital signals into a

form that can be transmitted by telephone.

Monitor - A TV_like screen used for video display sometimes called a Cathode Ray Tube (CRT) or a Video Display Terminal (VDT).

Monochrome - A monitor that used only one color (white, green, amber, or red) against a dark background.

Motherboard - In a computer, the clopped circuit board into which all the other circuit boards are fitted.

Mouse - An input selector device; as it rolls about on a flat surface, its movements control an onscreen pointer and other input functions. See joystick.

MS-DOS (Microsoft Disk Operating System) - Popular operating system for 16-bit microcomputers.

Network - An interconnection of computers, peripherals, communications lines.

Nondocument files - Word processing files that do not contain embedded commands to control the printer. A no document file could be used to store a computer program.

Null string - A string which is 0 characters in length.

Numeric field - A field that can hold only numbers. Only numeric field can be used in arithmetic calculations.

Numeric pad - A group of keys numbered zero through nine, generally located to the right of the keyboard.

Object code - A program in machine language.

On-demand menus - Menus that appear on the screen only if they are specifically requested by the user.

On-screen justification - Word processing feature that shows the

justification on the screen as well as on the printed copy.

On-screen menu - A guide to the commands used in word processing to set up the appearance of the screen including margins, justification of lines, and centering of text.

Opening a document - The process of setting up disk space for a new document.

Operating system - A set of programs that allows the computer to manage the hardware and programs under its control.

Operating system prompt - A signal to the user that the operating system has been loaded and is ready to be used. On several microcomputers it appears as A>.

Optical character recognition (OCR) - Computer ability to identify printed character by means of light-sensitive devices.

Outdent - Causing the first line of a paragraph to move into the margin. The opposite of indent.

Output - The act of getting information out of the computer on devices such as a printer, screen, or disk.

Output device - Any device, a printer or a display screen - that translates information produced by the computer into a form suitable for human consumption.

Overwriting - A technique for changing (replacing) letters or characters in a document by keying in new material over the old or incorrect characters.

Packaged software - A set of programs that maybe purchased for a specific application such as accounting or word processing.

Page break - Word processing command to end a page of printing and

start a new page.

Page footing (footer) - What is printed at the bottom of every page.

Page heading (header) - The title or other text printed on the pot of every page.

Page number omission - Shuts off the automatic page numbering, usually used on single-page word processing documents.

Page number setting - Word processing feature that allows the user to start numbering printed pages at some number other than one.

Page offset - Word processing features that allows printing to be shifted to the left on the printer.

Password - A unique group of characters which the user of a terminal connected to a large computer must type in order to gain access to its files.

PC DOS - A version of the MS-DOS operating system developed especially for the IBM-PC microcomputer.

Permanent storage - Medium such as a floppy disk on which data is saved and stored for retrieval and use later.

Personal computer - A microcomputer used for personal tasks.

Peripherals - The input-output equipment of a computer system, such as disk drives, printers, and modems.

Phosphor - A substance which glows when struck by electrons. The inside of a computer screen is coated with phosphor.

Physiological primaries - Red, green, and blue. Any color of light the human eye recognizes can be described by mixing these three primaries.

Pixel - The smallest area of a microcomputer display screen that can

be assigned a color.

Port — A point of connection for communications lines joining the computer to external devices – other computers, printers, modems, other communications lines.

Primary disk drive (default drive) — The drive where the operating system and the applications software are normally located. On most microcomputers, the primary disk drive is designated as Drive A.

Primary memory — That part of a computer's memory which is built into the computer and is immediately available to the processor when the computer is turned on. It is sometimes called main memory. All computer operations are performed in primary memory.

Primary storage — The part of the computer in which data and instructions are internally stored before, during, and after processing. This area is sometimes called internal storage, primary memory, or main memory.

Print formatting — Word processing feature that causes the text to be adjusted for the printer, but not necessarily on the screen

Print menu — Word processing feature that gives the user the options available for special printing effects.

Printer — A device used to transform the binary digits into the microcomputer into hard copy on paper.

Printing — The process of making a hard copy of the text currently in the computer.

Printing a document — The process of getting a word processing document from electronic storage onto paper using special format instructions to position the text.

Privacy Act of 1974 — A law passed in 1974 which gives individuals the right to access and if necessary change or update information about themselves in most federal data banks.

PRO DOS — The operating system developed by Apple for use on their Apple IIe microcomputer. It allows easy use of a Windchester hard disk drive.

Processing — Calculations and other manipulation of data.

Program — A set of instructions in a specific order designed to accomplish a specific task with the computer.

Prompt — A message from a computer's operating system which indicates that the computer is waiting for a command.

Proofreading program — A program which searches a document for typographical or spelling errors. See spelling checker.

Proportional spacing — A way of regularizing a justified line of print by allotting more space to wide letters and less to narrow ones. This method is more sophisticated than microspacing and produces a point out more closely resembling a typeset printed page.

Purge — The process of removing a file from a disk.

Qwerty — The standard arrangement of the keys on a keyboard. The letters "Qwerty" refer to the location of the keys on the left side of the their row of keys.

RFT/DCA — The name of the language used on the IBM mainframes.

Random access memory (RAM) — A chip in the microcomputer that stores data and instructions.

Reading machine — A machine, invented by Raymond Kurzweil, which by combining the technologies of optical character recognition and

the voice synthesizer can read books and magazines to the blind.

Read only memory (ROM) -- A form of nonvolatile memory used to store programs that cannot be erased by the user. The user can read from this memory area but cannot write to this area.

Read-write heads -- A device to read and/or write magnetic spots to or from a disk.

Reboot -- To turn off the computer and them turn in back on again.

Reformat -- To alter the format of text which has been automatically formatted onscreen so that it conforms to the user's preference. See onscreen formatting.

Registers -- Small storage areas used to temporarily hold data being processed in the microcomputer.

Rename -- The process of giving a file a different name.

Repaginate -- To use the computer to automatically re-number the pages of a document after editing.

Report-generator program -- A program which creates a report incorporating material from other reports. See merge-print program.

Resolution -- In graphics, the number of points or pixels per line. the greater the number of points, the higher the resolution or clarity of the image.

Retrevability -- The ability of data to be accessed from storage.

RETURN (RET) key -- A key used to either enter data or to cause a nonautomatic line return. In word processing, it is used at the end of paragraphs rather than at the end of each line of text.

Revising -- The deletion, replacing, and insertion of data in an

document.

ROM (Read-only memory) -- Memory containing information permanently carved into the computer's chip at the factory. Information in ROM can be viewed by the user but cannot be altered or added to. See nonvolatile memory.

Routine -- A procedure or function that may be useful in many different programs. For example, a sorting routine may be used as a procedure in a variety of programs, to do numerical sorting or alphabetizing. Some commonly used routines, such as the function that gives the absolute value of a number, are build into programming languages.

RS232 interface -- A serial port which sends and receives data in accordance with the RS232 (Recommended Standard 232) specifications. Most serial cards incorporate an RS232 interface for communication with external devices that follow the same standard.

Ruler line -- A word processing feature shown at the top of the screen indicating the left margin (L) and the right margin(R) and showing all of the tab stops.

Save or Saving -- The process of putting the text in working storage onto a disk file.

Screen -- The face of the microcomputer, sometimes called the Cathode Ray Tube (CRT) or Video Display Terminal (VDT).

Scrolling -- Moving text up, down, or from side to side so the user can see various parts of the document on the screen.

Search -- A computer command to find a given piece of data in primary

or accessible secondary memory.

Search and replace - Word processing editing feature that finds a word, or phrase and replaces it with a different word or phrase.

Secondary memory - Permanent storage for files created on a computer. See memory.

Sectors - A portion of a track on a disk.

Security - The protection of data against unauthorized disclosure, modification or destruction.

Semantics - The study of the meanings of words in terms of their relationships to other words in a sentence; the study of context.

Sequential access filing system - A filing system that requires all the records to be read in order up to the one being retrieved. Files on magnetic tape are usually sequential access files.

Sequential search - The technique of searching for a specified item on a list by going through the list from beginning to end, repeating this process for each item. Contrast binary search.

Serial port - A connector through which data enters and leaves the computer one bit at a time; the RS232 interface is an example.

Serial transmission - The sending of data serially, or one bit at a time, as occurs in communication between a computer and a modem or a serial pointer and in all long-distance transmissions.

Silicon - An element with semiconductive properties used in the manufacture of microcomputer chips.

Slash commands - Commands entered by a / (slash) and a letter indicating a specific function.

Soft sectored disk - A disk that just one index hold. Sectors are

determined by the software. Most microcomputers use soft sectored disks.

Soft boot (Warm boot) - Re-starting the microcomputer after it is already in use by pressing down the Ctrl key, the Alt key and the Del key all at the same time rather than turning off the machine and then turning on the machine again. This takes less time because the system does not go through its checking process again. Also called a ward start.

Software - The programs used with the computer. User's guides and manuals are sometimes considered to be part of the software.

Soft words - Words stored electronically as opposed to physically such as on paper. The words stored within the primary memory of a word processing system (the microcomputer system) are termed soft because they are not in a physical form.

Source code - A program written in a high-level language such as COBOL, BASIC, or FORTRAN to be converted into object code before execution.

Special print effects - Word processing print enhancements such as double strike, underscoring, and overprinting.

Special print features - Word processing commands that control special printing enhancements to customize and improve the appearance of a document.

Speech recognition - In computers, the ability to understand human speech.

Speech synthesizer - Using computers to create a noise which is understood by the human.

Spelling checker - A program that compares each word in a word
processing document to a list of properly spelled words. Each
misspelled word is marked for review by the user.

Spreadsheet - In accounting, an extra wide piece of paper divided into
rows and columns to give an organized presentation of financial
data and calculations. Also called a worksheet.

Spreadsheet program - A program designed for accounting procedures,
typically consisting of 255 to 8192 rows and 63 to 256 columns in
which data and formulas are entered into the cell.

State of the art - Designed according to the most advanced techniques
available at the time.

Status line - A word processing feature that indicates such things as
what file is being used, the current page number, the line number,
the column number, the character insert status, and/or how much
room is remaining in primary memory to collect text.

Storage - Memory in the microcomputer or on disk.

System command - A communication to the microcomputer's operating
system. It is a way to ask the operating system to carry out some
function such as giving a disk directory, deleting a file, or
saving a file.

Systems software - A set of programs that coordinate the operations of
the various hardware components. systems software is commonly
supplied by the manufacturer of the microcomputer being used.

Tab - In word processing a point indicated on the ruler line where
the cursor will stop when the TAB key is depressed.

Telecommunications - (1) the transmission of data between computers in

different locations. (2) networking from the communications
system point of view, which sees the computers in the network as
no more than switching devices.

Terminal - The input/output combination of keyboard and screen.

Text - Characters (information) entered on a word processing file.

Text analysis - Computerized literary, classical, and historical
research scholarship, which makes used of computer's ability to
compare, organize, sort, and search through large numbers of
references. typical applications are the construction of
concordances and the analytical comparison of tests and have
scholarly interest because they are ancient, fragmentary, corrupt,
or of disputed authorship.

Text editor - The part of a word processing program which allows the
user to create, revise, and store text.

Text file - A file that contains information in text form, organized
into lines.

Text mode - The normal mode of a computer, in which the keyboard
produces the usual typewriter characters.

Text processing - Treating a text to make it more readable or useful (
or both) for humans beings or for computers. Text-processing
operations include proofreading, merging texts, indexing,
comparing texts, and typesetting.

Thermal printer - A printer which produces characters by burning small
dots onto specially treated paper.

Top of the file - The first line of a file, also called the home
position.

Touch screen – A computer screen which has been modified to accept some instructions communicated by a touch of the user's finger to the screen, as well as instructions communicated through the keyboard.

Tracks – An electronic circle on a disk. A floppy disk has 40 concentric tracks on each side. Data is stored on the tracks.

TRS DOS (Tandy Radio Shack Disk Operating System) – Operating system used for several models of Radio Shack microcomputers.

Tuple – In a relational data base a collection of attributes about one entity, also called a record.

Turn-key – Software that requires no user programming.

Tutorial – A sample session in a word processing or other applications program in which the user is taught the skills necessary for efficient use of the program.

Unconditional page breaks – Word processing command instructing the printer to start printing on a new page.

Undelete – A word processing feature for recalling a character or characters that have been deleted from the screen.

Undo – Word processing feature for retrieval of the last deletion that was made.

UNIX – An operating system developed for use on minicomputers when several users would be using the minicomputer at the same time. Now it has been adapted for use on several microcomputers.

Upload – To move data from a microcomputer or terminal to a large computer.

User-friendly – Comprehensible to the person using the computer.

User's groups – Clubs of people who share an interest in a particular microcomputer or software.

Utilities – Programs used to maintain, update, and manipulate files and directories stored on disks.

Variable text – That portion of a word processing document that is changed each time the document is used. For example, the address on a form letter.

Voiceprint – The tiny modulations of the tones of speech unique to every individual.

Voice recognition – In computers, the ability to understand human speech.

Voice typewriter – A voice recognition device designed to accept dictation from human speakers; also called a talkwriter.

Volatile memory – A name sometimes given to primary or main memory in conventional computers, because the contents of that memory disappear when the computer is turned off.

Warm boot (soft boot) – Re-starting the microcomputer after it is already in use by pressing down the Ctrl key, the Alt key and the Del key all at the same time rather than turning off the machine and then turning on the machine again. This takes less time because the system does not go through its checking process again. Also called a ward start.

Windchester disk – Hard disks sealed inside a disk drive.

Window – The portion of the document currently visible on the screen. Notice that the entire screen is a window. The screen may for example show 25 lines of a 1000-line document that is in memory.

Word — The larger-than-byte-size group of bits used by a given computer to represent numbers. Typical word sizes are 16,32, and 64 bits.

Word and line deletion — A word processing feature that allows deletions of one word or an entire line at a time.

Wordcount program — A program designed to count the number of words in a text written with a word processor and stored in the computer's memory.

Word processing — The automated processing or manipulation of words using a specialized application program designed to help compose, revise, print, and file written documents.

Word processor — (1) A word processing program which enables the user to create, edit, store, retrieve, and print text. (2) A microcomputer which is so organized as to accept only text as input and to produce only text as output to a printer.

Word wrap — (1) The enhanced form of wraparound found in most word processing programs. With word wrap, a word at the end of a line which is too long to get on that line is automatically carried to the beginning of the next line. (2) A word processing feature in which the text being inserted is automatically moved to a new line when it goes past the right margin.

Working storage — Another name for primary memory.

Wordstation — A desktop terminal or microcomputer used for word processing and other computer applications in a modern office.

Wraparound — A word processing program's automatic ending of a line at a preset right hand margin. With wraparound, text is continued

from the end of one line to the beginning of the next — even if a word is broken off in midcareer.

WYSIWYG — "What You See Is What You Get"

APPENDIX

TABLES OF OBSERVED FEATURES ON INDIVIDUAL SOFTWARE

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TEXT ENTRY AND EDITING
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Typing and Editing:	Allegory	Benchmark	DisplWr-Asst
Background Auto Insert Reformat	no	no	yes
Constant Auto Insert Reformat	no	no	no
Constant Insert with Man. Reformat	no	no	no
Drop-down Insert, Auto Reformat	yes	yes	no
Either Is Default	no	yes	no
Insert Is Default	no	no	yes
Overstrike Is Default	yes	no	no
Toggle Insert/Overstrike	no	yes	yes
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:			
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	no	no
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	yes
Cursor to End of Document	no	yes	no
Cursor to End of Line	no	yes	no
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	no	no
Cursor to End of Sentence	no	yes	no
Cursor to End of Word	no	yes	no
Entire Document	no	yes	no
Entire Line	no	no	no
Entire Page	no	no	no
Entire Paragraph	no	no	no
Entire Sentence	no	no	

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================================================================
                    TEXT ENTRY AND EDITING
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Typing and Editing:	Allegory	Benchmark	DisplWr-Asst
Background Auto Insert Reformat	no	no	yes
Constant Auto Insert Reformat	no	no	no
Constant Insert with Man. Reformat	no	no	no
Drop-down Insert, Auto Reformat	yes	yes	no
Either Is Default	no	yes	no
Insert Is Default	no	no	yes
Overstrike Is Default	yes	no	no
Toggle Insert/Overstrike	no	yes	yes
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:			
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	no	no
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	yes
Cursor to End of Document	no	yes	no
Cursor to End of Line	no	yes	no
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	no	no
Cursor to End of Sentence	no	yes	no
Cursor to End of Word	no	yes	no
Entire Document	no	yes	no
Entire Line	no	no	no
Entire Page	no	no	no
Entire Paragraph	no	no	no
Entire Sentence	no	no	no
Entire Word	no	no	no

Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	yes	no	yes
Cursor Keys with Cursor Mode	no	yes	yes
Jump Cursor to Character	no	no	yes
Jump Cursor to Line	no	no	no
Jump Cursor to Paragraph	no	yes	yes
Jump Cursor to Place Marker	no	no	no
Mouse	no	no	yes

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Cursor Movement (continued):	Allegory	Benchmark	DisplWr-Asst
Move to Begin/End Document	yes	no	no
Move to Begin/End Line	yes	yes	yes
Move to Begin/End Page	yes	no	yes
Move to Begin/End Paragraph	no	no	no
Move to Begin/End Screen	yes	yes	yes
Move to Begin/End Sentence	no	no	no
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	yes	no	yes
Move to Next/Previous Paragraph	no	yes	no
Move to Next/Previous Screen	yes	yes	yes
Move to Next/Previous Sentence	no	yes	no
Move to Next/Previous Word	yes	yes	no
Scroll Screen Down	yes	yes	no
Scroll Screen Left	no	yes	yes
Scroll Screen Right	no	yes	yes
Scroll Screen Up	yes	no	yes
Special Keys (e.g., Crtl + Alpha)	yes	yes	no

Character Features:			
Alter Case	yes	no	no
Hard Hyphens	no	yes	yes
Hard Spaces	yes	yes	yes
Soft Hyphens	no	yes	yes

Block Editing Tools:			
Arbitrary (Begin/End)	yes	no	yes
Automatic Reformat as Block Insert	yes	yes	yes
Begin of Document to Cursor	yes	no	no
Block Highlighted	yes	yes	yes
Block Unmarked	no	no	no
Character	yes	no	yes
Copy	yes	yes	yes
Copy/Delete to Disk File	yes	no	no
Copy/Delete to Hold Area	yes	no	no
Copy/Delete to Text Macros	yes	yes	no
Copy/Move to Alternate Window	yes	yes	no
Copy/Move to Footnote	no	no	no
Copy/Move to Header/Footer	yes	no	no
Cursor to End of Document	yes	no	no
Delete	yes	yes	yes

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Block Editing Tools (continued):	Allegory	Benchmark	DisplWr-Asst
Entire Document	yes	no	no
Format Block Characters	no	no	yes
Format Block Page	no	no	no
Format Block Paragraph	no	no	no
Format Block Tabs	no	no	no
Line	yes	yes	yes
Manual Reformat as Block Insert	no	no	no
Marked by Beg/End Character	no	no	no
Move	yes	yes	yes
Page	yes	no	no
Paragraph	yes	no	no
Sentence	yes	yes	no
Swap	no	yes	no
Vertical Block or Column	no	no	no
Word	yes	yes	yes

Search and Replace:			
Any String	yes	yes	yes
Backward	no	no	no
Case Insensitive	yes	no	no
Case Sensitive	yes	yes	yes
Forward	yes	yes	yes
Preserve Case on Replace	no	yes	yes
Replace Format Codes	yes	yes	yes
Replace Wildcards	yes	yes	no
Replace with Verify	yes	yes	yes
Search for Format Codes	yes	yes	yes
Search for Wildcards	no	yes	no
Whole Word	yes	yes	yes

Undo Utility:			
Refresh Page or Other Unit	no	no	no
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	no	yes	no
Undoes Last Delete	yes	no	no
Undoes Last "Edit Action"	no	no	no

EDITING SCREEN DISPLAYS

Text Display:	Allegory	Benchmark	DisplWr-Asst
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	no	yes	yes
Full Justification On-screen	no	yes	no
Maximum Text Characters (Horizontal)	78	80	80
Maximum Text Lines (Vertical)	19	19	20
Snake Text Columns On-screen	no	no	no

Nontext Display:			
Cursor Character Column	yes	yes	yes
Cursor Line Number	yes	yes	yes
Cursor Page Number	yes	yes	yes
Document File Name	yes	yes	yes
Document File Directory	yes	no	no
Document File Disk	yes	yes	no
Ruler Line Constant	yes	yes	yes
Ruler Line Optional	no	no	no

FORMATTING FEATURES FOR FINAL TEXT

Character Formats:	Allegory	Benchmark	DisplWr-Asst
Bold	yes	yes	yes
Character Translate Table for Print	no	no	no
Combination Formats	yes	yes	yes
Full IBM Character Set	yes	no	no
Italic	yes	yes	yes
Pitch Change Adjusts Margins	no	no	yes
Print Wheel or Font Specification	yes	yes	yes
Proportional Spacing	no	yes	yes
Specify Strike-through Character	no	yes	yes
Standard ASCII Character Set	no	yes	yes
Strike-through	yes	yes	yes
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	yes

Line Spacing:	Allegory	Benchmark	DisplWr-Asst
Fractional Lines per Inch	9	yes	yes
Keep Paragraph with Next Paragraph	no	no	yes
Keep Paragraph with Prev. Paragraph	no	no	yes
Range in Lines per Inch	2-24	3-5	1-3
Orphan Control	no	yes	yes
Specify Spacing After Paragraph	no	no	no
Specify Spacing Before Paragraph	no	no	no
Widow Control	no	yes	yes

Margins:			
Automatic Indent	no	yes	yes
Automatic Outdent	no	no	no
Left Lower Limit	1	1	Ø
Right Upper Limit	255	165	999

Tabulation Format:			
Center Tabs	yes	yes	yes
Decimal Tabs	no	yes	yes
Left Tabs	yes	yes	yes
Right Tabs	no	yes	yes
Specify Decimal Tab Character	no	yes	yes
Specify Tab Fill Character	no	yes	no

Paragraph Formats:			
Center Justified	yes	yes	no
Fully Justified/Microspace	yes	yes	yes
Fully Justified/Normal Spaces	yes	yes	yes
Left Justified	yes	yes	yes
Right Justified	no	yes	yes

Multiple Columns:			
Maximum Number of Columns per Page	no	no	no
Numeric Columns	no	yes	yes
Specify Intercolumn Gutter Width	no	no	no
Text Columns	no	no	yes
Unmatched Column Widths	no	yes	yes

Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	yes	yes	no
Align Footer from Left	no	yes	yes

Page Formats (continued):	Allegory	Benchmark	DisplWr-Asst
Align Footer from Right	no	yes	yes
Align Footer from Top	no	no	yes
Align Header from Left	yes	yes	yes
Align Header from Right	no	yes	yes
Align Header from Top	yes	yes	yes
Align Last Text Line from Bottom	no	no	no
Align Last Text Line from Top	yes	yes	yes
Global Left Margin	yes	yes	yes
Global Right Margin	yes	yes	yes
Maximum Lines per Page	200	254	9,990
Maximum Paper Length	100	14	9,990
Maximum Paper Width	51	14	999
Multiple Page Specifications per Doc.	yes	yes	yes

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	yes	yes	yes
Multiple Line	no	no	no
Other Page Number Format	no	no	no
Restart or Override Number	yes	yes	yes
Roman page Number Format	no	no	no
Single Line	yes	yes	yes
Tabs in Header/Footer	no	yes	yes
Unique for Left/Right Page	yes	yes	yes

FILE HANDLING

Document File Strategy:	Allegory	Benchmark	DisplWr-Asst
Comments in Document Information	yes	yes	yes
Comments in Text	yes	yes	no
Comments Usable for Document Search	no	no	no
Document in ASCII Format	no	no	no
Document in Other Format	yes	yes	yes
Edit Document larger than Memory	no	yes	yes
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	yes	yes	no
Maximum Document size (kbyte)	300	NA	NA

Document File Strategy (Continued):	Allegory	Benchmark	DisplWr-Asst
One Document per File	yes	no	yes
Page or Other Unit in Memory	no	no	yes

Document Saving:

	Allegory	Benchmark	DisplWr-Asst
Automatic Backup Created at Start	yes	yes	no
Current Document Edits Lost	yes	yes	yes
Current Page Edits Lost	no	no	no
Disable Automatic Backup	yes	yes	no
Disable Automatic Save	yes	no	no
Document Automatically Saved on Exit	yes	no	yes
Document Intact	no	no	no
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	yes	yes	no
Exit Document Without Saving	yes	yes	no
Manually Save During Edit	yes	yes	yes
Specify Timing for Automatic Save	yes	no	no
"Time to Save" Warning	no	no	no

File Import and Export:

	Allegory	Benchmark	DisplWr-Asst
ASCII Export Requires CR/Line	yes	yes	no
ASCII Export requires CR/Paragraph	no	no	no
ASCII Import requires CR/Line	yes	no	no
ASCII Import Requires CR/Paragraph	no	yes	no
Can Merge Document Files	yes	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	yes	no	yes
Export Other	yes	no	no
Export Wang	yes	no	no
Export WordStar	yes	no	no
Import IBM RFT/DCA	no	no	yes
Import Other	no	no	yes
Import Wang	no	no	no
Import WordStar	no	no	no

SPECIAL FEATURES

Spelling Checker:	Allegory	Benchmark	DisplWr-Asst
Number of Words in Dictionary	80,000	27,000	100,000
Add Word to Dictionary	yes	yes	yes
Checks Defined Block	yes	no	no
Checks Entire Document	yes	yes	yes
Checks Multiple Documents	yes	yes	no
Checks Single Word	yes	no	no
Document User Dictionary	yes	yes	yes
General User Dictionary	no	yes	yes
Ignore Misspellings	yes	yes	yes
Manual Replacement	yes	yes	no
Mark Misspellings in Text	no	yes	yes
Misspellings Shown Alphabetically	yes	no	no
Misspellings Shown in Context	yes	yes	yes
Quit and Keep Corrections	yes	yes	no
Quit and Lose Corrections	yes	yes	no
Special-Purpose User Dictionary	yes	yes	no
Speller Presents Best Guesses	yes	no	no

Foreign Language Support:	Allegory	Benchmark	DisplWr-Asst
Arabic	no	no	no
British English	no	no	no
Danish	no	no	no
Dutch	no	no	no
French	no	yes	yes
French-Canadian	no	no	no
Finnish	no	no	no
German	no	no	yes
Icelandic	no	no	no
Italian	no	no	no
Japanese	no	no	no
Norwegian	no	no	no
Portuguese	no	no	no
Spanish	no	yes	yes
Swedish	no	no	no
Swiss	no	no	no

Other Features:	Allegory	Benchmark	DisplWr-Asst
Abbreviate Glossary (Text Macros)	yes	yes	no
Algorithm-based Hyphenation	no	no	no
Alternate Units of Measure	no	no	no
Automatic Index Generation	no	no	no
Automatic T. of C. Generation	no	no	no
Custom Footnote Formats	no	yes	no
Customize Color Screen	no	no	no
Customize Keyboard	no	no	yes
Date Variable	yes	yes	no
Dictionary-based Hyphenation	no	no	yes
Footnotes at End of Document	no	yes	no
Footnotes on Same Page	no	yes	no
Footnotes Spill to Next Page	no	no	no
Graphics in Text	no	yes	no
Keyboard Macros	yes	yes	no
Mail Merge	yes	no	no
Mail Merge Using Database	no	no	no
Math Works in Tables Only	no	yes	yes
Movement of Numbers and Formulas	no	no	yes
Outline Generator	no	no	no
Scientific Notation Support	no	no	yes
Semiautomatic Hyphenation	no	yes	no
Simple Math (Calculator)	no	no	no
Style Sheets or Named Formats	no	no	no
Telecommunications	no	no	no
Thesaurus	no	no	no
Time Variable	yes	yes	no

DOS Facilities:	Allegory	Benchmark	DisplWr-Asst
Access File from Another Directory	yes	no	yes
Access File from Another Disk	yes	yes	yes
Change Default Directory	yes	no	yes
Change Default Disk	yes	yes	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	yes	no	yes
Files Always in Same Directory	no	yes	no
Files Always on Same Disk	no	no	no

PRINTER SUPPORT

	Allegory	Benchmark	DisplWr-Asst
Number of Printers Supported	3	50	4
Automatic Envelope Format/Print	no	no	yes
Can Insert Printer Codes	yes	no	no
Can Modify/Create Printer Control	yes	no	no
Chain Documents for Printing	yes	no	no
Edit Other Document During Printing	yes	no	yes
Edit Same Document During Printing	no	no	no
Offset for Paper or Pitch Difference	yes	yes	no
Pause to Change Print Wheel	yes	yes	yes
Pause to Insert Single Sheet	yes	yes	yes
Queue Documents for Printing	yes	no	yes

SOFTWARE INFORMATION

	Allegory	Benchmark	DisplWr-Asst
Version	2.21	4.4	1.0
List Price	$395.00	$395.00	$195.00
RAM Required	512	256	256
Minimum DOS Needed	3.3	2.1	2.1
Drive(s) Required	1	2	2
Number of Listed Features	154	160	145
Classification by PC Magazine[1]	Corporate	Corporate	Corporate

Parent Company:

Allegory	Benchmark	DisplyWrite Assistant
Foresight Software	Metasoft 4142	IBM Corp.
P. O. Box 424	6509 W. Frye Rd., #12	Old Orchard Rd.
Truckee, CA 95734	Chandler, AZ 85226	Armonk, NY 1050426

[1]Jim Seymore, "Fast, Flexible & Forward-looking," PC Magazine, February 29, 1988, p. 92.

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TEXT ENTRY AND EDITING
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Typing and Editing:	DisplayW 4	Exe FtNoter	Exe SecVI
Background Auto Insert Reformat	yes	no	no
Constant Auto Insert Reformat	no	no	yes
Constant Insert with Man. Reformat	no	no	no
Drop-down Insert, Auto Reformat	no	yes	yes
Either Is Default	no	no	no
Insert Is Default	yes	yes	yes
Overstrike Is Default	no	no	no
Toggle Insert/Overstrike	yes	no	no
Typing Format Continues Unit Changed	yes	no	yes

Deletion Formats:			
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	no	no
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	yes
Cursor to End of Document	no	no	no
Cursor to End of Line	no	no	no
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	no	no
Cursor to End of Sentence	no	no	no
Cursor to End of Word	no	yes	yes
Entire Document	no	no	no
Entire Line	no	yes	yes
Entire Page	no	no	no
Entire Paragraph	no	no	no
Entire Sentence	no	no	no
Entire Word	no	no	no

Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	yes	no	yes
Cursor Keys with Cursor Mode	yes	yes	no
Jump Cursor to Character	yes	no	no
Jump Cursor to Line	no	yes	yes
Jump Cursor to Paragraph	yes	no	no
Jump Cursor to Place Marker	no	yes	yes
Mouse	yes	no	no

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Cursor Movement (continued):	DisplayW 4	Exe FtNoter	Exe SecVI
Move to Begin/End Document	no	yes	yes
Move to Begin/End Line	yes	yes	yes
Move to Begin/End Page	yes	no	no
Move to Begin/End Paragraph	no	no	no
Move to Begin/End Screen	yes	no	no
Move to Begin/End Sentence	no	no	no
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	yes	no	no
Move to Next/Previous Paragraph	no	no	no
Move to Next/Previous Screen	yes	no	yes
Move to Next/Previous Sentence	no	no	no
Move to Next/Previous Word	no	yes	yes
Scroll Screen Down	no	yes	yes
Scroll Screen Left	yes	no	no
Scroll Screen Right	yes	no	no
Scroll Screen Up	yes	yes	yes
Special Keys (e.g., Crtl + Alpha)	no	no	no

Character Features:			
Alter Case	no	no	no
Hard Hyphens	yes	yes	yes
Hard Spaces	yes	yes	yes
Soft Hyphens	yes	yes	yes

Block Editing Tools:			
Arbitrary (Begin/End)	yes	yes	yes
Automatic Reformat as Block Insert	yes	yes	yes
Begin of Document to Cursor	no	no	no
Block Highlighted	yes	no	no
Block Unmarked	no	no	no
Character	yes	no	no
Copy	yes	yes	yes
Copy/Delete to Disk File	no	yes	yes
Copy/Delete to Hold Area	no	no	no
Copy/Delete to Text Macros	no	no	no
Copy/Move to Alternate Window	no	no	no
Copy/Move to Footnote	no	no	no
Copy/Move to Header/Footer	no	no	no
Cursor to End of Document	no	no	no
Delete	yes	yes	yes

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Block Editing Tools (continued):	DisplayW 4	Exe FtNoter	Exe SecVI
Entire Document	no	no	no
Format Block Characters	yes	no	no
Format Block Page	no	no	no
Format Block Paragraph	no	no	no
Format Block Tabs	no	no	no
Line	yes	no	no
Manual Reformat as Block Insert	no	no	no
Marked by Beg/End Character	no	yes	yes
Move	yes	yes	yes
Page	no	no	no
Paragraph	no	no	no
Sentence	no	no	no
Swap	no	no	no
Vertical Block or Column	no	no	no
Word	yes	no	no

Search and Replace:

	DisplayW 4	Exe FtNoter	Exe SecVI
Any String	yes	yes	yes
Backward	no	no	no
Case Insensitive	no	no	no
Case Sensitive	yes	yes	yes
Forward	yes	yes	yes
Preserve Case on Replace	yes	no	no
Replace Format Codes	yes	no	yes
Replace Wildcards	no	no	no
Replace with Verify	yes	yes	yes
Search for Format Codes	yes	no	yes
Search for Wildcards	no	no	no
Whole Word	yes	no	yes

Undo Utility:

	DisplayW 4	Exe FtNoter	Exe SecVI
Refresh Page or Other Unit	no	no	no
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	yes	no	no
Undoes Last Delete	yes	no	no
Undoes Last "Edit Action"	no	no	no

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                        EDITING SCREEN DISPLAYS
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Text Display:	DisplayW 4	Exe FtNoter	Exe SecVI
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	yes	no	no
Full Justification On-screen	no	no	yes
Maximum Text Characters (Horizontal)	80	79	20
Maximum Text Lines (Vertical)	20	20	78
Snake Text Columns On-screen	no	no	no

Nontext Display:

	DisplayW 4	Exe FtNoter	Exe SecVI
Cursor Character Column	yes	no	no
Cursor Line Number	yes	no	yes
Cursor Page Number	yes	no	no
Document File Name	yes	no	no
Document File Directory	no	no	no
Document File Disk	no	no	no
Ruler Line Constant	yes	yes	yes
Ruler Line Optional	no	no	no

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                   FORMATTING FEATURES FOR FINAL TEXT
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Character Formats:

	DisplayW 4	Exe FtNoter	Exe SecVI
Bold	yes	no	yes
Character Translate Table for Print	yes	no	no
Combination Formats	yes	no	yes
Full IBM Character Set	no	no	no
Italic	yes	no	yes
Pitch Change Adjusts Margins	yes	no	no
Print Wheel or Font Specification	yes	no	yes
Proportional Spacing	yes	no	yes
Specify Strike-through Character	yes	no	no
Standard ASCII Character Set	yes	yes	yes
Strike-through	yes	no	no
Subscript	yes	no	yes
Superscript	yes	no	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	no	yes

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Line Spacing:

	DisplayW 4	Exe FtNoter	Exe SecVI
Fractional Lines per Inch	yes	no	yes
Keep Paragraph with Next Paragraph	yes	no	no
Keep Paragraph with Prev. Paragraph	yes	no	no
Range in Lines per Inch	1-3	1	1
Orphan Control	yes	yes	yes
Specify Spacing After Paragraph	no	no	no
Specify Spacing Before Paragraph	no	no	no
Widow Control	yes	no	no

Margins:

Automatic Indent	yes	no	no
Automatic Outdent	no	no	no
Left Lower Limit	0	0	0
Right Upper Limit	999	255	255

Tabulation Format:

Center Tabs	yes	no	yes
Decimal Tabs	yes	no	no
Left Tabs	yes	yes	yes
Right Tabs	yes	yes	yes
Specify Decimal Tab Character	yes	no	no
Specify Tab Fill Character	no	yes	yes

Paragraph Formats:

Center Justified	no	yes	yes
Fully Justified/Microspaces	yes	yes	yes
Fully Justified/Normal Spaces	yes	yes	yes
Left Justified	yes	yes	yes
Right Justified	yes	no	no

Multiple Columns:

Maximum Number of Columns per Page	no	no	no
Numeric Columns	yes	yes	no
Specify Intercolumn Gutter Width	no	yes	no
Text Columns	yes	no	no
Unmatched Column Widths	yes	yes	no

Page Formats:

Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	no	no	no
Align Footer from Left	yes	yes	yes

Page Formats (continued):

	DisplayW 4	Exe FtNoter	Exe SecVI
Align Footer from Right	yes	no	no
Align Footer from Top	yes	yes	yes
Align Header from Left	yes	yes	yes
Align Header from Right	yes	no	yes
Align Header from Top	yes	yes	yes
Align Last Text Line from Bottom	no	yes	yes
Align Last Text Line from Top	yes	no	no
Global Left Margin	yes	yes	yes
Global Right Margin	yes	no	no
Maximum Lines per Page	9,990	NA	999
Maximum Paper Length	9,990	NA	NA
Maximum Paper Width	999	255	NA
Multiple Page Specifications per Doc.	yes	yes	yes

Header/Footer:

Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	yes	yes	yes
Multiple Line	no	no	no
Other Page Number Format	no	no	no
Restart or Override Number	yes	yes	yes
Roman page Number Format	no	no	no
Single Line	yes	yes	yes
Tabs in Header/Footer	yes	no	yes
Unique for Left/Right Page	yes	no	no

FILE HANDLING

Document File Strategy:

	DisplayW 4	Exe FtNoter	Exe SecVI
Comments in Document Information	yes	no	no
Comments in Text	no	yes	yes
Comments Usable for Document Search	no	no	yes
Document in ASCII Format	no	yes	yes
Document in Other Format	yes	no	no
Edit Document larger than Memory	yes	no	no
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	no	yes	yes
Maximum Document size (kbyte)	NA	271	27

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Document File Strategy (Continued):	DisplayW 4	Exe FtNoter	Exe SecVI
One Document per File	yes	yes	yes
Page or Other Unit in Memory	yes	no	no

Document Saving:

	DisplayW 4	Exe FtNoter	Exe SecVI
Automatic Backup Created at Start	no	no	no
Current Document Edits Lost	yes	yes	yes
Current Page Edits Lost	no	no	no
Disable Automatic Backup	no	no	no
Disable Automatic Save	no	no	no
Document Automatically Saved on Exit	yes	no	no
Document Intact	no	no	yes
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	no	yes	yes
Exit Document Without Saving	no	yes	yes
Manually Save During Edit	yes	yes	yes
No Backup Created at Start	yes	yes	yes
Specify Timing for Automatic Save	no	no	no
"Time to Save" Warning	no	no	no

File Import and Export:

	DisplayW 4	Exe FtNoter	Exe SecVI
ASCII Export Requires CR/ Line	no	yes	yes
ASCII Export requires CR/ Paragraph	yes	no	no
ASCII Import requires CR/ Line	no	yes	yes
ASCII Import Requires CR/ Paragraph	no	no	no
Can Merge Document Files	yes	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	yes	no	no
Export Other	yes	no	no
Export Wang	no	no	no
Export WordStar	no	no	no
Import IBM RFT/DCA	yes	no	no
Import Other	yes	no	no
Import Wang	no	no	no
Import WordStar	no	no	no

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                        SPECIAL FEATURES
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Spelling Checker:	DisplayW 4	Exe FtNoter	Exe SecVI
Number of Words in Dictionary	100,000	24,500	15,000
Checks Defined Block	no	no	no
Checks Entire Document	yes	yes	yes
Checks Multiple Documents	no	no	no
Checks Single Word	yes	no	no
Document User Dictionary	yes	no	yes
General User Dictionary	yes	yes	yes
Ignore Misspellings	yes	yes	yes
Manual Replacement	no	yes	yes
Mark Misspellings in Text	yes	no	no
Misspellings Shown Alphabetically	no	no	no
Misspellings Shown in Context	yes	yes	yes
Quit and Keep Corrections	yes	yes	yes
Quit and Lose Corrections	no	yes	no
Special-Purpose User Dictionary	no	no	no
Speller Presents Best Guesses	yes	no	no

Foreign Language Support:

	DisplayW 4	Exe FtNoter	Exe SecVI
Arabic	no	no	no
British English	no	no	no
Danish	no	no	no
Dutch	no	no	no
French	yes	no	no
French-Canadian	no	no	no
Finnish	no	no	no
German	no	no	no
Icelandic	no	no	no
Italian	no	no	no
Japanese	no	no	no
Norwegian	no	no	no
Portuguese	no	no	no
Spanish	yes	no	no
Swedish	no	no	no
Swiss	no	no	no

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Other Features:	DisplayW 4	Exe FtNoter	Exe SecVI
Abbreviate Glossary (Text Macros)	yes	yes	yes
Algorithm-based Hyphenation	no	no	no
Alternate Units of Measure	no	no	no
Automatic Index Generation	no	yes	yes
Automatic T. of C. Generation	no	yes	no
Custom Footnote Formats	no	yes	no
Customize Color Screen	yes	no	no
Customize Keyboard	yes	no	no
Date Variable	no	no	yes
Dictionary-based Hyphenation	yes	no	no
Footnotes at End of Document	no	yes	no
Footnotes on Same Page	yes	yes	no
Footnotes Spill to Next Page	yes	yes	no
Graphics in Text	yes	no	no
Keyboard Macros	yes	no	yes
Mail Merge	yes	no	yes
Mail Merge Using Database	yes	no	yes
Math Works in Tables Only	yes	no	no
Movement of Numbers and Formulas	yes	no	no
Outline Generator	yes	no	no
Scientific Notation Support	yes	no	no
Semiautomatic Hyphenation	no	no	no
Simple Math (Calculator)	no	no	no
Style Sheets or Named Formats	no	no	yes
Telecommunications	no	no	yes
Thesaurus	no	no	no
Time Variable	no	no	no

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DOS Facilities:	DisplayW 4	Exe FtNoter	Exe SecVI
Access File from Another Directory	yes	yes	yes
Access File from Another Disk	yes	no	yes
Change Default Directory	yes	no	yes
Change Default Disk	yes	yes	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	yes	yes	no
Files Always in Same Directory	no	yes	no
Files Always on Same Disk	no	no	no

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==
PRINTER SUPPORT
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	DisplayW 4	Exe FtNoter	Exe SecVI
Number of Printers Supported	5	19	19
Automatic Envelope Format/Print	yes	no	yes
Can Insert Printer Codes	no	yes	yes
Can Modify/Create Printer Control	yes	no	yes
Chain Documents for Printing	no	yes	yes
Edit Other Document During Printing	yes	no	no
Edit Same Document During Printing	no	no	no
Offset for Paper or Pitch Difference	no	no	no
Pause to Change Print Wheel	yes	no	yes
Pause to Insert Single Sheet	yes	yes	yes
Queue Documents for Printing	yes	no	yes

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SOFTWARE INFORMATION
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	DisplayW 4	Exe FtNoter	Exe SecVI
Version	1.00	6.0	6.0
List Price	$495.00	$89.95	$159.95
RAM Required	384	256	256
Minimum DOS Needed	2.1	2.0	2.0
Drive(s) Required	2	1	1
Number of Listed Features	163	102	126
Classification by PC Magazine[2]	Corporate	Personal	Professional

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Parent Company:

DisplayWriter 4	Executive FootNoter	Executive Secretary VI
IBM Corp.	John Risken & Associates	John Risken & Assoc.
Old Orchard Rd.	P. O. Box 24045	P. O. Box 24045
Armonk, NY 10504	Minnespolis, MN 55425	Minnespolis, MN 55425

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[2]Ibid.

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TEXT ENTRY AND EDITING
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Typing and Editing:	Exe Writer	Final Draft	FinalWord II
Background Auto Insert Reformat	no	no	no
Constant Insert, Auto Reformat	no	no	yes
Constant Insert, Manual Reformat	yes	no	no
Drop-down Insert, Auto Reformat	no	yes	yes
Either Is Default	no	no	yes
Insert Is Default	no	yes	no
Overstrike Is Default	yes	no	no
Toggle Insert/Overstrike	yes	yes	yes
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:			
Beginning of Document to Cursor	no	yes	yes
Beginning of Line to Cursor	no	yes	yes
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	yes
Beginning of Sentence to Cursor	no	no	yes
Beginning of Word to Cursor	no	no	yes
Character	yes	yes	yes
Cursor to End of Document	no	yes	yes
Cursor to End of Line	yes	yes	yes
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	no	yes
Cursor to End of Sentence	no	no	yes
Cursor to End of Word	no	yes	yes
Entire Document	no	yes	no
Entire Line	yes	no	yes
Entire Page	no	no	no
Entire Paragraph	no	no	yes
Entire Sentence	no	no	yes
Entire Word	yes	no	yes

Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	yes	yes	yes
Cursor Keys with Cursor Mode	yes	yes	no
Jump Cursor to Character	no	no	no
Jump Cursor to Line	no	no	yes
Jump Cursor to Paragraph	no	yes	no
Jump Cursor to Place Marker	yes	yes	yes
Mouse	no	no	yes

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Cursor Movement (continued):	Exe Writer	Final Draft	FinalWord II
Move to Begin/End Document	yes	yes	yes
Move to Begin/End Line	yes	yes	yes
Move to Begin/End Page	no	no	no
Move to Begin/End Paragraph	no	no	yes
Move to Begin/End Screen	yes	yes	yes
Move to Begin/End Sentence	no	no	yes
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	no	no	no
Move to Next/Previous Paragraph	no	no	yes
Move to Next/Previous Screen	yes	yes	yes
Move to Next/Previous Sentence	no	no	yes
Move to Next/Previous Word	yes	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	no	yes	yes
Scroll Screen Right	no	yes	yes
Scroll Screen Up	yes	yes	yes
Special Keys (e.g., Crtl + Alpha)	no	no	no

Character Features:			
Alter Case	no	no	yes
Hard Hyphens	no	yes	yes
Hard Spaces	yes	yes	yes
Soft Hyphens	no	no	yes

Block Editing Tools:			
Arbitrary (Begin/End)	yes	yes	yes
Automatic Reformat as Block Insert	no	yes	yes
Begin of Document to Cursor	no	yes	yes
Block Highlighted	yes	no	yes
Block Unmarked	no	no	no
Character	no	no	no
Copy	yes	yes	yes
Copy/Delete to Disk File	yes	yes	no
Copy/Delete to Hold Area	yes	no	yes
Copy/Delete to Text Macros	yes	no	no
Copy/Move to Alternate Window	no	no	yes
Copy/Move to Footnote	no	no	yes
Copy/Move to Header/Footer	no	no	yes
Cursor to End of Document	no	yes	yes
Delete	yes	yes	yes

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Block Editing Tools (continued):	Exe Writer	Final Draft	FinalWord II
Entire Document	no	yes	no
Format Block Characters	yes	no	no
Format Block Page	no	no	no
Format Block Paragraph	no	no	no
Format Block Tabs	no	no	no
Line	no	yes	yes
Manual Reformat as Block Insert	yes	no	no
Marked by Beg/End Character	no	no	no
Move	yes	yes	yes
Page	no	no	no
Paragraph	no	no	yes
Sentence	no	no	yes
Swap	no	no	no
Vertical Block or Column	no	no	no
Word	no	no	yes

Search and Replace:

	Exe Writer	Final Draft	FinalWord II
Any String	yes	yes	yes
Backward	yes	no	yes
Case Insensitive	no	yes	yes
Case Sensitive	yes	no	yes
Forward	yes	yes	yes
Preserve Case on Replace	no	no	yes
Replace Format Codes	yes	no	yes
Replace Wildcards	yes	yes	yes
Replace with Verify	yes	yes	yes
Search for Format Codes	yes	no	yes
Search for Wildcards	yes	yes	yes
Whole Word	yes	no	yes

Undo Utility:

	Exe Writer	Final Draft	FinalWord II
Refresh Page or Other Unit	no	no	no
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	no	no	no
Undoes Last Delete	yes	yes	yes
Undoes Last "Edit Action"	no	no	no

===
EDITING SCREEN DISPLAYS
===

Text Display:	Exe Writer	Final Draft	FinalWord II
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	yes	no	yes
Full Justification On-screen	no	yes	yes
Maximum Text Characters (Horizontal)	79	80	30,000
Maximum Text Lines (Vertical)	18	23	24
Snake Text Columns On-screen	no	no	yes

Nontext Display:	Exe Writer	Final Draft	FinalWord II
Cursor Character Column	yes	yes	yes
Cursor Line Number	no	yes	yes
Cursor Page Number	no	yes	no
Document File Name	yes	yes	yes
Document File Directory	yes	no	yes
Document File Disk	yes	no	yes
Ruler Line Constant	yes	yes	no
Ruler Line Optional	no	no	no

===
FORMATTING FEATURES FOR FINAL TEXT
===

Character Formats:	Exe Writer	Final Draft	FinalWord II
Bold	yes	yes	yes
Character Translate Table for Print	no	no	yes
Combination Formats	yes	yes	yes
Full IBM Character Set	no	no	no
Italic	no	no	yes
Pitch Change Adjusts Margins	no	no	no
Print Wheel or Font Specification	no	yes	yes
Proportional Spacing	no	yes	yes
Specify Strike-through Character	no	no	no
Standard ASCII Character Set	yes	yes	yes
Strike-through	no	yes	yes
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	no	yes
Variable Monospace Pitch	no	yes	yes

Line Spacing:	Exe Writer	Final Draft	FinalWord II
Fractional Lines per Inch	no	no	yes
Keep Paragraph with Next Paragraph	no	no	yes
Keep Paragraph with Prev. Paragraph	no	no	yes
Range in Lines per Inch	1~8	1~3	1~66
Orphan Control	no	no	yes
Specify Spacing After Paragraph	no	no	yes
Specify Spacing Before Paragraph	no	no	yes
Widow Control	yes	no	yes

Margins:			
Automatic Indent	no	yes	yes
Automatic Outdent	no	no	yes
Left Lower Limit	1	1	Ø
Right Upper Limit	240	132	80

Tabulation Format:			
Center Tabs	no	no	no
Decimal Tabs	no	no	yes
Left Tabs	yes	yes	yes
Right Tabs	no	yes	yes
Specify Decimal Tab Character	no	no	no
Specify Tab Fill Character	no	no	yes

Paragraph Formats:			
Center Justified	yes	no	yes
Fully Justified/Microspaces	no	yes	yes
Fully Justified/Normal Spaces	yes	yes	yes
Left Justified	yes	yes	yes
Right Justified	no	no	yes

Multiple Columns:			
Maximum Number of Columns per Page	NA	NA	6
Numeric Columns	no	no	no
Specify Intercolumn Gutter Width	no	no	yes
Text Columns	no	no	yes
Unmatched Column Widths	no	no	no

Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	no	no	no
Align Footer from Left	yes	yes	no

Page Formats (continued):	Exe Writer	Final Draft	FinalWord II
Align Footer from Right	yes	yes	no
Align Footer from Top	no	no	no
Align Header from Left	yes	yes	yes
Align Header from Right	yes	no	yes
Align Header from Top	no	yes	yes
Align Last Text Line from Bottom	yes	yes	yes
Align Last Text Line from Top	no	no	no
Global Left Margin	yes	no	yes
Global Right Margin	yes	no	yes
Maximum Lines per Page	99	NA	NA
Maximum Paper Length	99	1	NA
Maximum Paper Width	240	132	NA
Multiple Page Specifications per Doc.	yes	no	yes

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	no	yes	yes
Margins Unique from Text	yes	no	yes
Multiple Line	no	no	no
Other Page Number Format	no	no	yes
Restart or Override Number	yes	yes	yes
Roman page Number Format	no	no	yes
Single Line	yes	yes	yes
Tabs in Header/Footer	no	yes	yes
Unique for Left/Right Page	yes	yes	yes

FILE HANDLING

Document File Strategy:	Exe Writer	Final Draft	FinalWord II
Comments in Document Information	no	yes	no
Comments in Text	yes	no	yes
Comments Usable for Document Search	no	yes	no
Document in ASCII Format	no	no	yes
Document in Other Format	yes	yes	no
Edit Document larger than Memory	yes	yes	yes
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	no	yes	no
Maximum Document size (kbyte)	NA	327	500

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Document File Strategy (continued):	Exe Writer	Final Draft	FinalWord II
One Document per File	yes	yes	yes
Page or Other Unit in Memory	no	no	no

Document Saving:

	Exe Writer	Final Draft	FinalWord II
Automatic Backup Created at Start	yes	yes	no
Current Document Edits Lost	yes	yes	no
Current Page Edits Lost	no	no	no
Disable Automatic Backup	no	no	no
Disable Automatic Save	no	yes	yes
Document Automatically Saved on Exit	no	no	no
Document Intact	no	no	yes
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	yes	yes	yes
Exit Document Without Saving	yes	yes	yes
Manually Save During Edit	yes	yes	yes
Specify Timing for Automatic Save	no	yes	yes
"Time to Save" Warning	no	no	no

File Import and Export:

	Exe Writer	Final Draft	FinalWord II
ASCII Export Requires CR/Line	no	yes	yes
ASCII Export requires CR/Paragraph	yes	no	no
ASCII Import requires CR/Line	no	yes	yes
ASCII Import Requires CR/Paragraph	yes	no	no
Can Merge Document Files	yes	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	no	no	no
Export Other	no	no	no
Export Wang	no	no	no
Export WordStar	no	no	no
Import IBM RFT/DCA	no	no	yes
Import Other	no	no	no
Import Wang	no	no	yes
Import WordStar	no	yes	yes

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SPECIAL FEATURES
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Spelling Checker:	Exe Writer	Final Draft	FinalWord II
Number of Words in Dictionary	NA	80,000	70,000
Add Word to Dictionary	no	yes	yes
Checks Defined Block	no	yes	no
Checks Entire Document	no	yes	yes
Checks Multiple Documents	no	no	no
Checks Single Word	no	no	yes
Document User Dictionary	no	no	no
General User Dictionary	no	yes	no
Ignore Misspellings	no	yes	yes
Manual Replacement	no	yes	yes
Mark Misspellings in Text	no	no	no
Misspellings Shown Alphabetically	no	no	no
Misspellings Shown in Context	no	yes	no
Quit and Keep Corrections	no	yes	yes
Quit and Lose Corrections	no	yes	no
Special-Purpose User Dictionary	no	yes	no
Speller Presents Best Guesses	no	yes	yes

Foreign Language Support:	Exe Writer	Final Draft	FinalWord II
Arabic	no	no	no
British English	no	no	no
Danish	no	no	no
Dutch	no	no	no
French	no	no	yes
French-Canadian	no	no	no
Finnish	no	no	no
German	no	no	no
Icelandic	no	no	no
Italian	no	no	no
Japanese	no	no	no
Norwegian	no	no	no
Portuguese	no	no	no
Spanish	no	no	yes
Swedish	no	no	no
Swiss	no	no	no

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Other Features:	Exe Writer	Final Draft	FinalWord II
Abbreviate Glossary (Text Macros)	no	yes	yes
Algorithm-based Hyphenation	no	no	no
Alternate Units of Measure	no	no	yes
Automatic Index Generation	yes	yes	yes
Automatic T. of C. Generation	yes	yes	yes
Custom Footnote Formats	no	yes	yes
Customize Color Screen	no	yes	no
Customize Keyboard	no	no	yes
Date Variable	yes	no	no
Dictionary-based Hyphenation	no	no	no
Footnotes at End of Document	yes	no	yes
Footnotes on Same Page	yes	yes	yes
Footnotes Spill to Next Page	no	yes	yes
Graphics in Text	yes	yes	yes
Keyboard Macros	yes	no	yes
Mail Merge	no	yes	no
Mail Merge Using Database	yes	no	no
Math Works in Tables Only	no	no	no
Movement of Numbers and Formulas	no	no	no
Outline Generator	no	no	no
Scientific Notation Support	no	no	no
Semiautomatic Hyphenation	no	no	no
Simple Math (Calculator)	no	no	no
Style Sheets or Named Formats	no	no	yes
Telecommunications	no	no	no
Thesaurus	yes	yes	no
Time Variable	yes	no	no

DOS Facilities:	Exe Writer	Final Draft	FinalWord II
Access File from Another Directory	yes	no	yes
Access File from Another Disk	yes	yes	yes
Change Default Directory	no	no	yes
Change Default Disk	no	yes	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	no	yes	yes
Files Always in Same Directory	no	yes	no
Files Always on Same Disk	no	no	no

PRINTER SUPPORT

	Exe Writer	Final Draft	FinalWord II
Number of Printers Supported	20	1	NA
Automatic Envelope Format/Print	no	yes	yes
Can Insert Printer Codes	yes	yes	yes
Can Modify/Create Printer Control	yes	yes	yes
Chain Documents for Printing	no	yes	yes
Edit Other Document During Printing	no	no	no
Edit Same Document During Printing	no	no	no
Offset for Paper or Pitch Difference	yes	no	yes
Pause to Change Print Wheel	yes	yes	yes
Pause to Insert Single Sheet	yes	no	yes
Queue Documents for Printing	no	no	no

SOFTWARE INFORMATION

	Exe Writer	Final Draft	FinalWord II
Version	1.00	3.00	2.2
List Price	$195.00	$395.00	$395.00
RAM Required	256	256	256
Minimum DOS Needed	2.0	2.0	2.0
Drive(s) Required	1	2	2
Number of Listed Features	113	138	187
Classification by PC Magazine[3]	Personal	Corporate	Professional

Parent Company:

EXECUTIVE WRITER	FINAL DRAFT	FINALWORD
Paperback Software	CYMA/McGraw-Hill	RW Corp.
2830 Ninth Street	1400 E. Southern	P. O. Box 443
Berkeley, CA 94710	Tempe, AZ 85282	Cambridge, MA 02142

[3]Ibid.

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                    TEXT ENTRY AND EDITING
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Typing and Editing:	Leading Edge	MASS-11PC	Msoft Word
Background Auto Insert Reformat	no	no	no
Constant Insert, Auto Reformat	yes	yes	yes
Constant Insert, Manual Reformat	no	no	no
Drop-down Insert, Auto Reformat	yes	no	no
Either Is Default	no	yes	yes
Insert Is Default	no	no	no
Overstrike Is Default	yes	no	no
Toggle Insert/Overstrike	yes	yes	yes
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:			
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	no	no
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	yes
Cursor to End of Document	no	no	no
Cursor to End of Line	no	no	no
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	no	no
Cursor to End of Sentence	no	no	no
Cursor to End of Word	no	yes	no
Entire Document	no	no	no
Entire Line	no	no	no
Entire Page	no	no	no
Entire Paragraph	no	no	no
Entire Sentence	no	no	no
Entire Word	no	no	no

Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	yes	yes	yes
Cursor Keys with Cursor Mode	no	no	no
Jump Cursor to Character	no	yes	no
Jump Cursor to Line	no	yes	no
Jump Cursor to Paragraph	yes	yes	yes
Jump Cursor to Place Mark	yes	no	no
Mouse	no	no	yes

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Cursor Movement (continued):	Leading Edge	MASS-11PC	Msoft Word
Move to Begin/End Document	yes	yes	yes
Move to Begin/End Line	yes	yes	yes
Move to Begin/End Page	yes	no	yes
Move to Begin/End Paragraph	no	no	yes
Move to Begin/End Screen	yes	yes	yes
Move to Begin/End Sentence	yes	no	yes
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	yes	yes	yes
Move to Next/Previous Paragraph	no	yes	yes
Move to Next/Previous Screen	yes	yes	yes
Move to Next/Previous Sentence	yes	yes	yes
Move to Next/Previous Word	yes	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	yes	yes	yes
Scroll Screen Right	yes	yes	yes
Scroll Screen Up	yes	no	yes
Special Keys (e.g., Crtl + Alpha)	no	no	no

Character Features:			
Alter Case	yes	yes	yes
Hard Hyphens	yes	yes	yes
Hard Spaces	yes	yes	yes
Soft Hyphens	no	yes	yes

Block Editing Tools:			
Arbitrary (Begin/End)	no	yes	yes
Automatic Reformat as Block Insert	yes	yes	yes
Begin of Document to Cursor	yes		yes
Block Highlighted	yes	yes	yes
Block Unmarked	no	no	no
Character	no	no	no
Copy	yes	yes	yes
Copy/Delete to Disk File	no	yes	no
Copy/Delete to Hold Area	yes	yes	yes
Copy/Delete to Text Macros	no	yes	yes
Copy/Move to Alternate Window	yes	yes	yes
Copy/Move to Footnote	no	yes	yes
Copy/Move to Header/Footer	no	yes	yes
Cursor to End of Document	yes	no	yes
Delete	no	yes	yes

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Block Editing Tools (continued):	Leading Edge	MASS-11PC	Msoft Word
Entire Document	no	no	yes
Format Block Characters	no	yes	yes
Format Block Page	no	no	yes
Format Block Paragraph	no	no	yes
Format Block Tabs	no	no	yes
Line	no	no	yes
Manual Reformat as Block Insert	no	no	no
Marked by Beg/End Character	no	no	yes
Move	yes	yes	yes
Page	no	no	yes
Paragraph	yes	no	yes
Sentence	no	no	yes
Swap	no	no	no
Vertical Block or Column	no	no	no
Word	no	no	yes

Search and Replace:			
Any String	yes	yes	yes
Backward	yes	yes	yes
Case Insensitive	yes	yes	yes
Case Sensitive	yes	yes	yes
Forward	yes	yes	yes
Preserve Case on Replace	yes	no	yes
Replace Format Codes	no	yes	yes
Replace Wildcards	yes	no	yes
Replace with Verify	yes	yes	yes
Search for Format Codes	no	yes	yes
Search for Wildcards	no	no	yes
Whole Word	yes	no	yes

Undo Utility:			
Refresh Page or Other Unit	no	no	no
Rotating (Undoes Previous Undo)	no	no	yes
Undo Not Available	no	no	no
Undoes Last Delete	no	yes	yes
Undoes Last "Edit Action"	yes	no	no

==
EDITING SCREEN DISPLAYS
==

Text Display:	Leading Edge	MASS-11PC	Msoft Word
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	no	no	no
Full Justification On-screen	yes	no	yes
Maximum Text Characters (Horizontal)	80	80	87
Maximum Text Lines (Vertical)	21	22	44
Snake Text Columns On-screen	no	no	no

Nontext Display:			
Cursor Character Column	yes	yes	no
Cursor Line Number	yes	yes	yes
Cursor Page Number	yes	no	yes
Document File Name	yes	yes	no
Document File Directory	no	no	no
Document File Disk	no	no	no
Ruler Line Constant	yes	yes	no
Ruler Line Optional	no	no	yes

==
FORMATTING FEATURES FOR FINAL TEXT
==

Character Formats:	Leading Edge	MASS-11PC	Msoft Word
Bold	yes	yes	yes
Character Translate Table for Print	no	no	yes
Combination Formats	yes	yes	yes
Full IBM Character Set	no	no	yes
Italic	yes	no	yes
Pitch Change Adjusts Margins	no	no	yes
Print Wheel or Font Specification	no	yes	yes
Proportional Spacing	no	yes	yes
Specify Strike-through Character	no	no	yes
Standard ASCII Character Set	yes	yes	no
Strike-through	yes	yes	yes
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	yes

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Line Spacing:	Leading Edge	MASS-11PC	Msoft Word
Fractional Lines per Inch	yes	yes	yes
Keep Paragraph with Next Paragraph	no	no	yes
Keep Paragraph with Prev. Paragraph	no	no	yes
Range in Lines per Inch	0-3.5	9	22-72
Orphan Control	yes	yes	yes
Specify Spacing After Paragraph	no	no	yes
Specify Spacing Before Paragraph	no	no	yes
Widow Control	yes	yes	yes
Margins:			
Automatic Indent	no	no	yes
Automatic Outdent	yes	yes	yes
Left Lower Limit	1	1	1
Right Upper Limit	200	250	220
Tabulation Format:			
Center Tabs	yes	yes	no
Decimal Tabs	yes	yes	yes
Left Tabs	yes	yes	yes
Right Tabs	no	yes	yes
Specify Decimal Tab Character	yes	yes	yes
Specify Tab Fill Character	no	yes	yes
Paragraph Formats:			
Center Justified	no	no	yes
Fully Justified/Microspaces	yes	yes	yes
Fully Justified/Normal Spaces	yes	yes	yes
Left Justified	yes	yes	yes
Right Justified	no	no	yes
Multiple Columns:			
Maximum Number of Columns per Page	NA	30	10
Numeric Columns	no	yes	yes
Specify Intercolumn Gutter Width	no	yes	yes
Text Columns	no	yes	yes
Unmatched Column Widths	no	yes	no
Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	no	no	yes
Align Footer from Left	yes	no	yes

Page Formats (continued):	Leading Edge	MASS-11PC	Msoft Word
Align Footer from Right	yes	no	yes
Align Footer from Top	no	yes	no
Align Header from Left	yes	no	yes
Align Header from Right	yes	no	yes
Align Header from Top	yes	yes	yes
Align Last Text Line from Bottom	no	no	yes
Align Last Text Line from Top	no	yes	yes
Global Left Margin	yes	yes	yes
Global Right Margin	yes	no	yes
Maximum Lines per Page	88	NA	31.680
Maximum Paper Length	NA	NA	22
Maximum Paper Width	NA	NA	22
Multiple Page Specifications per Doc.	no	no	yes
Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	yes	no	yes
Multiple Line	no	yes	no
Other Page Number Format	no	yes	yes
Restart or Override Number	no	yes	yes
Roman page Number Format	no	yes	yes
Single Line	yes	no	yes
Tabs in Header/Footer	yes	yes	yes
Unique for Left/Right Page	yes	yes	yes

FILE HANDLING

Document File Strategy:	Leading Edge	MASS-11PC	Msoft Word
Comments in Document Information	no	no	no
Comments in Text	no	yes	no
Comments Usable for Document Search	no	no	no
Document in ASCII Format	no	no	yes
Document in Other Format	yes	yes	no
Edit Document larger than Memory	yes	yes	yes
File Folder/Drawer Metaphor	no	yes	no
Full Document in Memory	no	no	no
Maximum Document size (kbyte)	360	25	NA

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Document File Strategy (continued):	Leading Edge	MASS-11PC	Msoft Word
One Document per File	yes	no	yes
Page or Other Unit in Memory	no	yes	yes

Document Saving:

	Leading Edge	MASS-11PC	Msoft Word
Automatic Backup Created at Start	yes	yes	yes
Current Document Edits Lost	no	no	yes
Current Page Edits Lost	no	yes	no
Disable Automatic Backup	yes	no	no
Disable Automatic Save	no	no	no
Document Automatically Saved on Exit	yes	yes	no
Document Intact	yes	no	no
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	no	no	yes
Exit Document Without Saving	no	yes	yes
Manually Save During Edit	yes	no	yes
No Backup Created at Start	no	no	no
Specify Timing for Automatic Save	yes	no	no
"Time to Save" Warning	no	no	yes

File Import and Export:

	Leading Edge	MASS-11PC	Msoft Word
ASCII Export Requires CR/Line	no	yes	yes
ASCII Export requires CR/Paragraph	no	no	no
ASCII Import requires CR/Line	yes	yes	no
ASCII Import Requires CR/Paragraph	no	no	yes
Can Merge Document Files	yes	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	no	no	no
Export Other	no	no	no
Export Wang	no	no	no
Export WordStar	no	no	no
Import IBM RFT/DCA	no	no	no
Import Other	no	no	no
Import Wang	no	no	no
Import WordStar	no	no	yes

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                          SPECIAL FEATURES
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Spelling Checker:	Leading Edge	MASS-11PC	Msoft Word
Number of Words in Dictionary	80,000	50,000	80,000
Add Word to Dictionary	yes	yes	no
Checks Defined Block	no	no	yes
Checks Entire Document	yes	yes	yes
Checks Multiple Documents	no	no	no
Checks Single Word	yes	no	no
Document User Dictionary	no	no	yes
General User Dictionary	yes	yes	yes
Ignore Misspellings	yes	yes	yes
Manual Replacement	yes	yes	yes
Mark Misspellings in Text	no	no	yes
Misspellings Shown Alphabetically	no	no	yes
Misspellings Shown in Context	yes	yes	yes
Quit and Keep Corrections	no	yes	yes
Quit and Lose Corrections	yes	yes	yes
Special-Purpose User Dictionary	no	no	no
Speller Presents Best Guesses	yes	yes	no

Foreign Language Support:

	Leading Edge	MASS-11PC	Msoft Word
Arabic	no	no	no
British English	no	yes	no
Danish	no	yes	no
Dutch	no	no	no
French	no	yes	no
French-Canadian	no	yes	no
Finnish	no	no	no
German	no	yes	no
Icelandic	no	no	no
Italian	no	yes	no
Japanese	no	no	no
Norwegian	no	yes	no
Portuguese	no	yes	no
Spanish	no	yes	no
Swedish	no	yes	no
Swiss	no	no	no

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Other Features:	Leading Edge	MASS-11PC	Msoft Word
Abbreviate Glossary (Text Macros)	yes	yes	yes
Algorithm-based Hyphenation	no	yes	yes
Alternate Units of Measure	no	no	yes
Automatic Index Generation	no	no	no
Automatic T. of C. Generation	no	yes	no
Custom Footnote Formats	no	yes	yes
Customize Color Screen	yes	no	yes
Customize Keyboard	no	no	no
Date Variable	no	yes	no
Dictionary-based Hyphenation	no	no	yes
Footnotes at End of Document	no	no	yes
Footnotes on Same Page	no	yes	yes
Footnotes Spill to Next Page	no	yes	no
Graphics in Text	no	yes	no
Keyboard Macros	no	yes	no
Mail Merge	yes	yes	yes
Mail Merge Using Database	yes	yes	yes
Math Works in Tables Only	no	yes	no
Movement of Numbers and Formulas	no	yes	no
Outline Generator	no	no	no
Scientific Notation Support	no	yes	no
Semiautomatic Hyphenation	no	no	no
Simple Math (Calculator)	no	yes	no
Style Sheets or Named Formats	no	yes	yes
Telecommunications	no	yes	no
Thesaurus	no	no	no
Time Variable	no	yes	no

DOS Facilities:

	Leading Edge	MASS-11PC	Msoft Word
Access File from Another Directory	no	no	yes
Access File from Another Disk	yes	no	yes
Change Default Directory	no	no	yes
Change Default Disk	yes	no	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	yes	yes	yes
Files Always in Same Directory	yes	yes	no
Files Always on Same Disk	no	yes	yes

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PRINTER SUPPORT
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	Leading Edge	MASS-11PC	Msoft Word
Number of Printers Supported	90	12	56
Automatic Envelope Format/Print	no	no	yes
Can Insert Printer Codes	yes	no	yes
Can Modify/Create Printer Control	no	yes	yes
Chain Documents for Printing	yes	yes	yes
Edit Other Document During Printing	yes	no	yes
Edit Same Document During Printing	no	no	yes
Offset for Paper or Pitch Difference	yes	yes	yes
Pause to Change Print Wheel	no	yes	yes
Pause to Insert Single Sheet	yes	yes	yes
Queue Documents for Printing	no	no	yes

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SOFTWARE INFORMATION
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	Leading Edge	MASS-11PC	Msoft Word
Version	1.5	7A	4.0
List Price	$195.00	$395.00	$450.00
RAM Required	320	384	320
Minimum DOS Needed	2.1	3.1	2.0
Drive(s) Required	2	2	2
Number of Listed Features	135	152	194
Classification by PC Magazine[4]	Corporate	Professional	Professional

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Parent Company:

LEADING EDGE	MASS-11pc 5-C	MICROSOFT WORD
Leading Edge Software Products Inc.	Microsystems Engineering Corp.	Microsoft Corporation 16011 NE 36th Way
225 Turnpike nSt.	2400 W. Hassell Rd., #400	Redmond, WA 98073
Canton, MA 02021	Hoffman Estates, IL 60195	

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[4]Ibid.

TEXT ENTRY AND EDITING

Typing and Editing:	Multimate	My Word!	NewWord
Background Auto Insert Reformat	no	no	no
Constant Auto Insert Reformat	yes	no	no
Constant Insert with Man Reformat	no	yes	yes
Drop-down Insert, Auto Reformat	yes	no	no
Either Is Default	no	yes	no
Insert Is Default	no	no	yes
Overstrike Is Default	yes	no	no
Toggle Insert/Overstrike	yes	yes	yes
Typing Format Continues Unit Changed	yes	yes	yes
Deletion Formats:			
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	yes	yes
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	yes
Cursor to End of Document	no	no	no
Cursor to End of Line	no	yes	yes
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	no	no
Cursor to End of Sentence	no	no	no
Cursor to End of Word	no	yes	yes
Entire Document	no	no	yes
Entire Line	no	yes	yes
Entire Page	no	no	no
Entire Paragraph	no	no	no
Entire Sentence	no	no	no
Entire Word	no	no	no
Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	yes	yes	yes
Cursor Keys with Cursor Mode	no	yes	yes
Jump Cursor to Character	no	no	no
Jump Cursor to Line	no	yes	yes
Jump Cursor to Paragraph	yes	no	yes
Jump Cursor to Place Marker	yes	no	no
Mouse	no	no	no

Cursor Movement (continued):	Multimate	My Word!	NewWord
Move to Begin/End Document	no	yes	yes
Move to Begin/End Line	yes	yes	yes
Move to Begin/End Page	yes	no	no
Move to Begin/End Paragraph	no	no	no
Move to Begin/End Screen	yes	yes	yes
Move to Begin/End Sentence	no	no	no
Move to Next/Previous Character	yes	no	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	yes	no	no
Move to Next/Previous Paragraph	no	yes	no
Move to Next/Previous Screen	yes	no	yes
Move to Next/Previous Sentence	no	yes	no
Move to Next/Previous Word	yes	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	yes	no	yes
Scroll Screen Right	yes	no	yes
Scroll Screen Up	yes	yes	yes
Special Keys (e.g., Crtl + Alpha)	no	no	no
Character Features:			
Alter Case	no	no	no
Hard Hyphens	no	yes	yes
Hard Spaces	yes	no	yes
Soft Hyphens	yes	no	yes
Block Editing Tools:			
Arbitrary (Begin/End)	yes	yes	yes
Automatic Reformat as Block Insert	yes	no	no
Begin of Document to Cursor	no	no	no
Block Highlighted	yes	yes	yes
Block Unmarked	no	no	no
Character	no	no	no
Copy	yes	yes	yes
Copy/Delete to Disk File	no	yes	yes
Copy/Delete to Hold Area	no	no	no
Copy/Delete to Text Macros	no	no	no
Copy/Move to Alternate Window	no	no	no
Copy/Move to Footnote	no	no	no
Copy/Move to Header/Footer	yes	no	yes
Cursor to End of Document	no	no	no
Delete	yes	yes	yes

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Block Editing Tools (continued):	Multimate	My Word!	NewWord
Entire Document	no	no	no
Format Block Characters	no	no	no
Format Block Page	no	no	no
Format Block Paragraph	no	no	no
Format Block Tabs	no	no	no
Line	yes	no	no
Manual Reformat as Block Insert	no	yes	yes
Marked by Beg/End Character	no	no	no
Move	yes	no	yes
Page	no	no	no
Paragraph	yes	no	no
Sentence	yes	no	no
Swap	no	no	no
Vertical Block or Column	yes	no	yes
Word	yes	no	no
Search and Replace:			
Any String	yes	yes	yes
Backward	no	no	yes
Case Insensitive	yes	no	yes
Case Sensitive	yes	yes	yes
Forward	yes	yes	yes
Preserve Case on Replace	no	no	no
Replace Format Codes	no	yes	yes
Replace Wildcards	no	no	yes
Replace with Verify	yes	yes	yes
Search for Format Codes	no	yes	yes
Search for Wildcards	no	no	yes
Whole Word	yes	yes	yes
Undo Utility:			
Refresh Page or Other Unit	no	no	no
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	yes	no	no
Undoes Last Delete	no	yes	yes
Undoes Last "Edit Action"	no	no	no

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EDITING SCREEN DISPLAYS
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Text Display:	Multimate	My Word!	NewWord
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	no	no	yes
Full Justification On-screen	no	no	yes
Maximum Text Characters (Horizontal)	80	78	80
Maximum Text Lines (Vertical)	23	23	24
Snake Text Columns On-screen	no	no	no
Nontext Display:			
Cursor Character Column	yes	no	yes
Cursor Line Number	yes	no	yes
Cursor Page Number	yes	no	yes
Document File Name	yes	no	yes
Document File Directory	no	no	no
Document File Disk	no	no	yes
Ruler Line Constant	no	no	no
Ruler Line Optional	no	yes	yes

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FORMATTING FEATURES FOR FINAL TEXT
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Character Formats:	Multimate	My Word!	NewWord
Bold	yes	yes	yes
Character Translate Table for Print	yes	yes	no
Combination Formats	yes	yes	yes
Full IBM Character Set	no	no	no
Italic	no	yes	yes
Pitch Change Adjusts Margins	no	no	no
Print Wheel or Font Specification	no	yes	yes
Proportional Spacing	yes	yes	no
Specify Strike-through Character	yes	no	no
Standard ASCII Character Set	yes	yes	yes
Strike-through	yes	yes	yes
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	yes

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Line Spacing:	Multimate	My Word!	NewWord
Fractional Lines per Inch	yes	yes	yes
Keep Paragraph with Next Paragraph	no	no	no
Keep Paragraph with Prev. Paragraph	no	no	no
Range in Lines per Inch	3	1	1-9
Orphan Control	yes	yes	yes
Specify Spacing After Paragraph	no	no	no
Specify Spacing Before Paragraph	no	no	no
Widow Control	yes	no	no

Margins:			
Automatic Indent	no	no	yes
Automatic Outdent	no	no	no
Left Lower Limit	1	0	1
Right Upper Limit	156	255	255

Tabulation Format:			
Center Tabs	yes	no	yes
Decimal Tabs	no	no	no
Left Tabs	yes	yes	yes
Right Tabs	no	no	yes
Specify Decimal Tab Character	yes	no	yes
Specify Tab Fill Character	no	no	no

Paragraph Formats:			
Center Justified	no	no	no
Fully Justified/Microspaces	yes	yes	yes
Fully Justified/Normal Spaces	yes	yes	yes
Left Justified	yes	yes	yes
Right Justified	no	no	no

Multiple Columns:			
Maximum Number of Columns per Page	no	no	no
Numeric Columns	yes	yes	yes
Specify Intercolumn Gutter Width	no	yes	no
Text Columns	no	yes	no
Unmatched Column Widths	no	yes	yes

Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	yes	yes	no
Align Footer from Left	no	no	no

Page Formats:	Multimate	My Word!	NewWord
Align Footer from Right	no	no	no
Align Footer from Top	no	no	no
Align Header from Left	no	no	no
Align Header from Right	no	no	no
Align Header from Top	yes	yes	yes
Align Last Text Line from Bottom	no	yes	yes
Align Last Text Line from Top	no	no	no
Global Left Margin	yes	yes	yes
Global Right Margin	yes	yes	yes
Maximum Lines per Page	195	NA	255
Maximum Paper Length	NA	NA	NA
Maximum Paper Width	NA	NA	255
Multiple Page Specifications per Doc.	yes	yes	no

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	no	yes	yes
Multiple Line	yes	no	no
Other Page Number Format	no	no	no
Restart or Override Number	yes	yes	yes
Roman page Number Format	no	no	no
Single Line	no	yes	yes
Tabs in Header/Footer	yes	yes	yes
Unique for Left/Right Page	yes	yes	yes

FILE HANDLING

Document File Strategy:	Multimate	My Word!	NewWord
Comments in Document Information	yes	no	no
Comments in Text	no	yes	yes
Comments Usable for Document Search	yes	no	no
Document in ASCII Format	no	yes	no
Document in Other Format	yes	no	yes
Edit Document larger than Memory	no	no	yes
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	no	yes	yes
Maximum Document size (kbyte)	128	NA	NA

Document File Strategy (continued):	Multimate	My Word!	NewWord
One Document per File	yes	no	yes
Page or Other Unit in Memory	yes	no	no

Document Saving:

	Multimate	My Word!	NewWord
Automatic Backup Created at Start	yes	no	yes
Current Document Edits Lost	no	yes	yes
Current Page Edits Lost	yes	no	no
Disable Automatic Backup	yes	no	yes
Disable Automatic Save	no	no	no
Document Automatically Saved on Exit	no	yes	no
Document Intact	no	no	no
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	yes	yes	yes
Exit Document Without Saving	no	yes	yes
Manually Save During Edit	yes	yes	no
No Backup Created at Start	no	yes	no
Specify Timing for Automatic Save	no	no	no
"Time to Save" Warning	no	no	no

File Import and Export:

	Multimate	My Word!	NewWord
ASCII Export Requires CR/ Line	yes	yes	yes
ASCII Export requires CR/ Paragraph	no	no	no
ASCII Import requires CR/ Line	no	no	no
ASCII Import Requires CR/ Paragraph	yes	yes	yes
Can Merge Document Files	no	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	yes	no	no
Export Other	no	no	no
Export Wang	no	no	no
Export WordStar	no	yes	yes
Import IBM RFT/DCA	yes	no	no
Import Other	yes	no	no
Import Wang	no	no	no
Import WordStar	yes	yes	yes

SPECIAL FEATURES

Spelling Checker:	Multimate	My Word!	NewWord
Number of Words in Dictionary	80,000	27,600	45,000
Add Word to Dictionary	yes	yes	yes
Checks Defined Block	yes	no	no
Checks Entire Document	yes	yes	yes
Checks Multiple Documents	no	yes	no
Checks Single Word	no	no	no
Document User Dictionary	no	no	yes
General User Dictionary	yes	yes	yes
Ignore Misspellings	yes	yes	yes
Manual Replacement	yes	yes	yes
Mark Misspellings in Text	yes	yes	yes
Misspellings Shown Alphabetically	no	no	no
Misspellings Shown in Context	yes	yes	yes
Quit and Keep Corrections	yes	yes	no
Quit and Lose Corrections	no	no	no
Special-Purpose User Dictionary	no	yes	yes
Speller Presents Best Guesses	yes	no	yes

Foreign Language Support:	Multimate	My Word!	NewWord
Arabic	no	no	no
British English	no	no	no
Danish	no	no	no
Dutch	no	no	no
French	no	yes	no
French-Canadian	no	no	no
Finnish	no	no	no
German	no	no	no
Icelandic	no	no	no
Italian	no	no	no
Japanese	no	no	no
Norwegian	no	no	no
Portuguese	no	no	no
Spanish	no	yes	no
Swedish	no	no	no
Swiss	no	no	no

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Other Features:	Multimate	My Word!	NewWord
Abbreviate Glossary (Text Macros)	yes	no	no
Algorithm-based Hyphenation	no	no	no
Alternate Units of Measure	no	no	no
Automatic Index Generation	no	no	no
Automatic T. of C. Generation	no	no	no
Custom Footnote Formats	no	no	no
Customize Color Screen	yes	yes	yes
Customize Keyboard	no	no	no
Date Variable	no	no	no
Dictionary-based Hyphenation	no	no	no
Footnotes at End of Document	no	no	no
Footnotes on Same Page	no	no	no
Footnotes Spill to Next Page	no	no	no
Graphics in Text	no	no	no
Keyboard Macros	yes	yes	no
Mail Merge	yes	yes	yes
Mail Merge Using Database	no	yes	no
Math Works in Tables Only	yes	no	no
Movement of Numbers and Formulas	no	yes	no
Outline Generator	no	no	no
Scientific Notation Support	no	yes	no
Semiautomatic Hyphenation	no	no	yes
Simple Math (Calculator)	no	yes	no
Style Sheets or Named Formats	no	no	no
Telecommunications	no	no	no
Thesaurus	no	no	no
Time Variable	no	no	no

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DOS Facilities	Multimate	My Word!	NewWord
Access File from Another Directory	no	no	no
Access File from Another Disk	no	yes	yes
Change Default Directory	yes	no	yes
Change Default Disk	yes	yes	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	no	yes	no
Files Always in Same Directory	no	yes	no
Files Always on Same Disk	no	no	no

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PRINTER SUPPORT
===
	Multimate	My Word!	NewWord
Number of Printers Supported	275	NA	31
Automatic Envelope Format/Print	no	no	yes
Can Insert Printer Codes	yes	yes	yes
Can Modify/Create Printer Control	yes	yes	no
Chain Documents for Printing	no	yes	yes
Edit Other Document During Printing	yes	no	no
Edit Same Document During Printing	no	no	no
Offset for Paper or Pitch Difference	yes	yes	yes
Pause to Change Print Wheel	yes	yes	yes
Pause to Insert Single Sheet	yes	yes	yes
Queue Documents for Printing	yes	no	no

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SOFTWARE INFORMATION
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	Multimate Advantage II	My Word!	NewWord
Version	1.0	2.1	2.15
List Price	$595.00	$60.00	$249.00
RAM Required	384	256	64
Minimum DOS Needed	2.0	2.0	1.1
Drive(s) Required	2	1	1
Number of Listed Features	131	124	141
Classification by PC Magazine[5]	Corporate	Professional	Personal

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Parent Company:
MULTIMATE ADVANTAGE II	MY WORD!	NEWWORD
Ashton Tate	TNT Software Inc.	NewStar Software Inc.
20101 Hamilton Ave.	34069 Hainesville Rd.	1601 Oak Park Blvd.
Torrance, CA 90502	Round Lake, IL 60073	Pleasant Hill, CA 94523

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[5]Ibid.

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TEXT ENTRY AND EDITING
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Typing and Editing:

	Nota Bene	OfficeWriter	PC-WRITE
Background Auto Insert Reformat	no	no	no
Constant Auto Insert Reformat	no	no	no
Constant Insert with Man Reformat	yes	no	yes
Drop-down Insert, Auto Reformat	no	yes	no
Either Is Default	no	no	yes
Insert Is Default	yes	no	no
Overstrike Is Default	no	no	no
Toggle Insert/Overstrike	yes	no	yes
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:

Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	no	yes
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	no	yes
Cursor to End of Document	yes	no	no
Cursor to End of Line	yes	no	yes
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	yes	no	no
Cursor to End of Sentence	yes	no	no
Cursor to End of Word	yes	no	no
Entire Document	no	no	yes
Entire Line	yes	no	yes
Entire Page	no	no	no
Entire Paragraph	no	no	no
Entire Sentence	no	no	no
Entire Word	no	no	yes

Cursor Movement:

Cursor Keys with Alt/Ctrl/Shift	yes	yes	yes
Cursor Keys with Cursor Mode	yes	no	yes
Jump Cursor to Character	yes	no	yes
Jump Cursor to Line	yes	yes	yes
Jump Cursor to Paragraph	yes	yes	yes
Jump Cursor to Place Marker	yes	no	yes
Mouse	no	no	yes

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Cursor Movement (continued):	Nota Bene	OfficeWriter	PC-WRITE
Move to Begin/End Document	yes	no	yes
Move to Begin/End Line	no	yes	yes
Move to Begin/End Page	no	no	yes
Move to Begin/End Paragraph	no	yes	yes
Move to Begin/End Screen	yes	yes	yes
Move to Begin/End Sentence	no	yes	yes
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	no	no	yes
Move to Next/Previous Paragraph	no	no	yes
Move to Next/Previous Screen	yes	yes	yes
Move to Next/Previous Sentence	no	no	yes
Move to Next/Previous Word	yes	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	yes	yes	yes
Scroll Screen Right	yes	yes	yes
Scroll Screen Up	yes	yes	yes
Special Keys (e.g., Crtl + Alpha)	no	no	no

Character Features:

Alter Case	yes	no	yes
Hard Hyphens	yes	no	yes
Hard Spaces	yes	yes	yes
Soft Hyphens	yes	yes	yes

Block Editing Tools:

Arbitrary (Begin/End)	yes	yes	yes
Automatic Reformat as Block Insert	no	yes	no
Begin of Document to Cursor	no	no	no
Block Highlighted	yes	yes	yes
Block Unmarked	no	no	no
Character	no	no	no
Copy	yes	yes	yes
Copy/Delete to Disk File	yes	yes	yes
Copy/Delete to Hold Area	no	no	yes
Copy/Delete to Text Macros	no	no	no
Copy/Move to Alternate Window	no	no	yes
Copy/Move to Footnote	no	yes	yes
Copy/Move to Header/Footer	yes	yes	yes
Cursor to End of Document	no	no	no
Delete	yes	yes	yes

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Block Editing Tools (continued):	Nota Bene	OfficeWriter	PC-WRITE
Entire Document	no	no	yes
Format Block Characters	no	yes	yes
Format Block Page	no	no	no
Format Block Paragraph	no	no	yes
Format Block Tabs	no	no	no
Line	no	no	no
Manual Reformat as Block Insert	yes	no	yes
Marked by Beg/End Character	no	no	no
Move	yes	yes	yes
Page	no	no	no
Paragraph	no	no	no
Sentence	no	no	no
Swap	no	no	no
Vertical Block or Column	yes	no	no
Word	no	no	no

Search and Replace:			
Any String	yes	yes	yes
Backward	yes	no	yes
Case Insensitive	yes	yes	yes
Case Sensitive	yes	no	yes
Forward	yes	yes	yes
Preserve Case on Replace	no	yes	yes
Replace Format Codes	yes	yes	yes
Replace Wildcards	yes	no	yes
Replace with Verify	yes	yes	yes
Search for Format Codes	yes	yes	yes
Search for Wildcards	yes	no	yes
Whole Word	yes	yes	yes

Undo Utility:			
Refresh Page or Other Unit	no	no	yes
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	no	no	no
Undoes Last Delete	yes	yes	yes
Undoes Last "Edit Action"	no	no	no

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                    EDITING SCREEN DISPLAYS
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Text Display:	Nota Bene	OfficeWriter	PC-WRITE
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	yes	no	yes
Full Justification On-screen	yes	no	yes
Maximum Text Characters (Horizontal)	80	80	80
Maximum Text Lines (Vertical)	24	24	24
Snake Text Columns On-screen	no	no	no
	no	no	no

Nontext Display:			
Cursor Character Column	yes	yes	no
Cursor Line Number	yes	yes	no
Cursor Page Number	yes	yes	no
Document File Name	yes	no	no
Document File Directory	no	no	no
Document File Disk	no	no	no
Ruler Line Constant	no	no	no
Ruler Line Optional	yes	no	yes

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=================================================================
                FORMATTING FEATURES FOR FINAL TEXT
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Character Formats:	Nota Bene	OfficeWriter	PC-WRITE
Bold	yes	yes	yes
Character Translate Table for Print	no	yes	yes
Combination Formats	yes	yes	yes

Paragraph Formats:			
Full IBM Character Set	no	no	no
Italic	yes	no	yes
Pitch Change Adjusts Margins	no	no	no
Print Wheel or Font Specification	yes	no	yes
Proportional Spacing	no	yes	yes
Specify Strike-through Character	no	yes	yes
Standard ASCII Character Set	yes	yes	yes
Strike-through	yes	yes	yes
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	yes

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Line Spacing	Nota Bene	OfficeWriter	PC-WRITE
Fractional Lines per Inch	yes	yes	yes
Keep Paragraph with Next Paragraph	no	no	yes
Keep Paragraph with Prev. Paragraph	no	no	yes
Range in Lines per Inch	1-9	3	1-9
Orphan Control	yes	yes	no
Specify Spacing After Paragraph	no	no	no
Specify Spacing Before Paragraph	no	no	no
Widow Control	no	yes	no

Margins:			
Automatic Indent	yes	no	yes
Automatic Outdent	no	no	yes
Left Lower Limit	1	1	1
Right Upper Limit	255	156	255

Tabulation Format:			
Center Tabs	yes	yes	yes
Decimal Tabs	no	no	no
Left Tabs	yes	yes	yes
Right Tabs	yes	no	no
Specify Decimal Tab Character	yes	no	yes
Specify Tab Fill Character	no	no	no

Paragraph Formats:			
Center Justified	no	no	yes
Fully Justified/Microspaces	yes	yes	no
Fully Justified/Normal Spaces	yes	yes	yes
Left Justified	yes	yes	yes
Right Justified	no	no	no

Multiple Columns:			
Maximum Number of Columns per Page	NA	3	NA
Numeric Columns	yes	yes	no
Specify Intercolumn Gutter Width	no	no	no
Text Columns	no	yes	no
Unmatched Column Widths	yes	yes	no

Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	no	no	yes
Align Footer from Left	no	no	yes

Page Formats:	Nota Bene	OfficeWriter	PC-WRITE
Align Footer from Right	no	no	yes
Align Footer from Top	no	yes	yes
Align Header from Left	no	no	yes
Align Header from Right	no	no	yes
Align Header from Top	no	yes	yes
Align Last Text Line from Bottom	yes	no	no
Align Last Text Line from Top	yes	no	yes
Global Left Margin	yes	yes	yes
Global Right Margin	yes	no	yes
Maximum Lines per Page	255	NA	255
Maximum Paper Length	1	NA	300
Maximum Paper Width	255	NA	255
Multiple Page Specifications per Doc.	no	yes	yes

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	yes	no	yes
Multiple Line	no	yes	no
Other Page Number Format	no	no	no
Restart or Override Number	yes	yes	yes
Roman page Number Format	no	no	no
Single Line	yes	no	yes
Tabs in Header/Footer	no	yes	no
Unique for Left/Right Page	yes	yes	yes

FILE HANDLING

Document File Strategy:	Nota Bene	OfficeWriter	PC-WRITE
Comments in Document Information	no	yes	no
Comments in Text	yes	no	yes
Comments Usable for Document Search	no	no	no
Document in ASCII Format	no	no	yes
Document in Other Format	yes	yes	no
Edit Document larger than Memory	yes	no	no
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	yes	yes	yes
Maximum Document size (kbyte)	NA	240 Pages	60

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Document File Strategy:	Nota Bene	OfficeWriter	PC-WRITE
One Document per File	yes	yes	yes
Page or Other Unit in Memory	no	yes	no

Document Saving:

	Nota Bene	OfficeWriter	PC-WRITE
Automatic Backup Created at Start	yes	no	yes
Current Document Edits Lost	yes	yes	yes
Current Page Edits Lost	no	no	no
Disable Automatic Backup	yes	no	yes
Disable Automatic Save	no	no	no
Document Automatically Saved on Exit	no	no	yes
Document Intact	no	no	no
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	yes	yes	no
Exit Document Without Saving	yes	yes	yes
Manually Save During Edit	yes	yes	yes
No Backup Created at Start	no	yes	no
Specify Timing for Automatic Save	no	no	no
"Time to Save" Warning	no	no	yes

File Import and Export:

	Nota Bene	OfficeWriter	PC-WRITE
ASCII Export Requires CR/ Line	yes	yes	yes
ASCII Export requires CR/ Paragraph	no	no	no
ASCII Import requires CR/ Line	no	no	yes
ASCII Import Requires CR/ Paragraph	yes	yes	no
Can Merge Document Files	yes	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	no	no	no
Export Other	no	no	no
Export Wang	no	no	no
Export WordStar	yes	no	no
Import IBM RFT/DCA	no	no	no
Import Other	no	no	no
Import Wang	no	no	no
Import WordStar	yes	no	yes

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SPECIAL FEATURES
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Spelling Checker:	Nota Bene	OfficeWriter	PC-WRITE
Number of Words in Dictionary	145,000	80,000	80,000
Add Word to Dictionary	yes	yes	no
Checks Defined Block	yes	no	no
Checks Entire Document	yes	yes	no
Checks Multiple Documents	yes	no	no
Checks Single Word	yes	yes	no
Document User Dictionary	yes	no	no
General User Dictionary	yes	yes	no
Ignore Misspellings	yes	yes	no
Manual Replacement	yes	yes	no
Mark Misspellings in Text	yes	no	no
Misspellings Shown Alphabetically	yes	no	no
Misspellings Shown in Context	yes	yes	no
Quit and Keep Corrections	yes	yes	no
Quit and Lose Corrections	yes	no	no
Special-Purpose User Dictionary	yes	no	no
Speller Presents Best Guesses	yes	yes	no

Foreign Language Support:

	Nota Bene	OfficeWriter	PC-WRITE
Arabic	no	no	yes
British English	no	no	yes
Danish	no	no	yes
Dutch	no	no	yes
French	no	no	yes
French-Canadian	no	no	no
Finnish	no	no	yes
German	no	no	yes
Icelandic	no	no	yes
Italian	no	no	yes
Japanese	no	no	no
Norwegian	no	no	yes
Portuguese	no	no	no
Spanish	no	no	yes
Swedish	no	no	yes
Swiss	no	no	no

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Other Features:	Nota Bene	OfficeWriter	PC-WRITE
Abbreviate Glossary (Text Macros)	yes	no	no
Algorithm-based Hyphenation	no	no	no
Alternate Units of Measure	no	no	no
Automatic Index Generation	yes	no	no
Automatic T. of C. Generation	yes	no	yes
Custom Footnote Formats	no	no	no
Customize Color Screen	yes	yes	yes
Customize Keyboard	no	no	yes
Date Variable	yes	yes	no
Dictionary-based Hyphenation	no	no	no
Footnotes at End of Document	no	no	no
Footnotes on Same Page	no	yes	yes
Footnotes Spill to Next Page	no	no	no
Graphics in Text	no	no	yes
Keyboard Macros	yes	no	yes
Mail Merge	yes	yes	yes
Mail Merge Using Database	no	yes	no
Math Works in Tables Only	yes	no	no
Movement of Numbers and Formulas	no	no	no
Outline Generator	no	no	no
Scientific Notation Support	no	no	no
Semiautomatic Hyphenation	yes	no	no
Simple Math (Calculator)	yes	no	no
Style Sheets or Named Formats	no	no	yes
Telecommunications	no	no	no
Thesaurus	no	no	no
Time Variable	no	no	no

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DOS Facilities:			
Access File from Another Directory	yes	no	yes
Access File from Another Disk	yes	yes	yes
Change Default Directory	yes	no	yes
Change Default Disk	yes	yes	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	no	no	no
Files Always in Same Directory	no	yes	no
Files Always on Same Disk	no	no	no
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                         PRINTER SUPPORT
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	Nota Bene	OfficeWriter	PC-WRITE
Number of Printers Supported	34	44	137
Automatic Envelope Format/Print	yes	no	no
Can Insert Printer Codes	yes	yes	yes
Can Modify/Create Printer Control	yes	no	yes
Chain Documents for Printing	yes	no	yes
Edit Other Document During Printing	no	yes	no
Edit Same Document During Printing	no	yes	no
Offset for Paper or Pitch Difference	yes	yes	yes
Pause to Change Print Wheel	yes	no	yes
Pause to Insert Single Sheet	yes	yes	yes
Queue Documents for Printing	no	yes	no

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                       SOFTWARE INFORMATION
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	Nota Bene	OfficeWriter	PC-WRITE
Version	3.0	5.0	2.71
List Price	$640.00	$495.00	$75.00
RAM Required	384	256	320
Minimum DOS Needed	2.0	2.0	2.0
Drive(s) Required	1	2	2
Number of Listed Features	158	123	158
Classification by PC Magazine[6]	Professional	Corporate	Personal

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Parent Company:		
NOTA BENE	OFFICE WRITER	PC-WRITE
Dragonfly, Software	Office Solutions Inc.	Quicksoft
1601 Oak Park Blvd.	2802 Coho St.	212 First Ave. N.#224
Brooklyn, NY. 94523	Madison, WI 53713	Seattle, WA 98109
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[6] Ibid.

TEXT ENTRY AND EDITING

Typing and Editing:	Peachtext	PerfWriter	Practiword
Background Auto Insert Reformat	no	no	no
Constant Auto Insert Reformat	yes	no	no
Constant Insert with Man Reformat	no	yes	yes
Drop-down Insert, Auto Reformat	yes	no	no
Either Is Default	no	no	no
Insert Is Default	no	yes	yes
Overstrike Is Default	yes	no	no
Toggle Insert/Overstrike	yes	no	yes
Typing Format Continues Unit Changed	yes	yes	yes
Deletion Formats:			
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	no	no
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	yes
Cursor to End of Document	no	no	no
Cursor to End of Line	yes	yes	no
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	yes	no
Cursor to End of Sentence	no	yes	no
Cursor to End of Word	no	no	yes
Entire Document	no	no	no
Entire Line	no	yes	yes
Entire Page	no	no	no
Entire Paragraph	no	yes	no
Entire Sentence	no	yes	no
Entire Word	yes	yes	no
Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	no	yes	no
Cursor Keys with Cursor Mode	yes	yes	no
Jump Cursor to Character	yes	no	no
Jump Cursor to Line	no	yes	no
Jump Cursor to Paragraph	no	no	no
Jump Cursor to Place Marker	yes	no	yes
Mouse	no	no	no

Cursor Movement (continued):	Peachtext	PerfWriter	Practiword
Move to Begin/End Document	yes	yes	yes
Move to Begin/End Line	yes	yes	yes
Move to Begin/End Page	no	yes	no
Move to Begin/End Paragraph	no	yes	no
Move to Begin/End Screen	no	yes	yes
Move to Begin/End Sentence	no	yes	no
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	no	no	no
Move to Next/Previous Paragraph	no	yes	yes
Move to Next/Previous Screen	yes	no	yes
Move to Next/Previous Sentence	no	yes	no
Move to Next/Previous Word	no	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	no	no	yes
Scroll Screen Right	no	no	yes
Scroll Screen Up	yes	yes	yes
Special Keys (e.g., Crtl + Alpha)	no	no	no
Character Features:			
Alter Case	no	yes	no
Hard Hyphens	yes	no	no
Hard Spaces	yes	no	yes
Soft Hyphens	yes	no	no
Block Editing Tools:			
Arbitrary (Begin/End)	yes	yes	yes
Automatic Reformat as Block Insert	yes	no	no
Begin of Document to Cursor	no	no	no
Block Highlighted	no	yes	yes
Block Unmarked	no	no	no
Character	no	no	no
Copy	yes	yes	yes
Copy/Delete to Disk File	yes	yes	yes
Copy/Delete to Hold Area	no	yes	no
Copy/Delete to Text Macros	no	no	no
Copy/Move to Alternate Window	no	yes	no
Copy/Move to Footnote	no	yes	no
Copy/Move to Header/Footer	no	yes	no
Cursor to End of Document	no	no	no
Delete	yes	yes	yes

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Cursor Movement (continued):	Peachtext	PerfWriter	Practiword
Entire Document	no	no	no
Format Block Characters	no	no	no
Format Block Page	no	yes	no
Format Block Paragraph	no	yes	no
Format Block Tabs	no	no	no
Line	no	no	no
Manual Reformat as Block Insert	no	yes	yes
Marked by Beg/End Character	yes	no	no
Move	yes	yes	yes
Page	no	no	no
Paragraph	no	yes	no
Sentence	no	no	no
Swap	no	no	no
Vertical Block or Column	no	no	no
Word	no	no	no

Search and Replace:			
Any String	yes	yes	yes
Backward	no	yes	yes
Case Insensitive	no	yes	no
Case Sensitive	yes	no	yes
Forward	yes	yes	yes
Preserve Case on Replace	yes	yes	no
Replace Format Codes	yes	no	no
Replace Wildcards	no	no	no
Replace with Verify	yes	yes	yes
Search for Format Codes	yes	no	no
Search for Wildcards	no	no	no
Whole Word	no	yes	yes

Undo Utility:			
Refresh Page or Other Unit	no	no	no
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	yes	no	yes
Undoes Last Delete	no	yes	no
Undoes Last "Edit Action"	no	no	no

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================================================================
                     EDITING SCREEN DISPLAYS
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Text Display:	Peachtext	PerfWriter	Practiword
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	yes	yes	yes
Full Justification On-screen	no	yes	yes
Maximum Text Characters (Horizontal)	80	80	199
Maximum Text Lines (Vertical)	24	24	22
Snake Text Columns On-screen	no	no	yes

Nontext Display:			
Cursor Character Column	no	no	yes
Cursor Line Number	no	no	yes
Cursor Page Number	no	no	yes
Document File Name	no	yes	yes
Document File Directory	no	yes	yes
Document File Disk	no	yes	yes
Ruler Line Constant	no	no	no
Ruler Line Optional	no	yes	yes

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================================================================
                FORMATTING FEATURES FOR FINAL TEXT
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Character Formats:	Peachtext	PerfWriter	Practiword
Bold	yes	yes	yes
Character Translate Table for Print	yes	yes	no
Combination Formats	yes	yes	yes
Full IBM Character Set	no	no	no
Italic	no	yes	no
Pitch Change Adjusts Margins	yes	yes	no
Print Wheel or Font Specification	yes	yes	no
Proportional Spacing	yes	no	no
Specify Strike-through Character	yes	no	no
Standard ASCII Character Set	yes	yes	yes
Strike-through	yes	no	no
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	no

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Line Spacing:	Peachtext	PerfWriter	Practiword
Fractional Lines per Inch	yes	yes	yes
Keep Paragraph with Next Paragraph	no	no	no
Keep Paragraph with Prev. Paragraph	no	yes	no
Range in Lines per Inch	1-6	1-2	1-9
Orphan Control	yes	yes	no
Specify Spacing After Paragraph	no	yes	no
Specify Spacing Before Paragraph	no	yes	no
Widow Control	yes	yes	yes

Margins:			
Automatic Indent	yes	yes	yes
Automatic Outdent	yes	yes	no
Left Lower Limit	0	1	1
Right Upper Limit	132	80	199

Tabulation Format:			
Center Tabs	no	no	yes
Decimal Tabs	no	no	yes
Left Tabs	yes	yes	yes
Right Tabs	no	no	yes
Specify Decimal Tab Character	no	no	no
Specify Tab Fill Character	yes	no	no

Paragraph Formats:			
Center Justified	yes	yes	no
Fully Justified/Microspaces	yes	no	no
Fully Justified/Normal Spaces	yes	yes	no
Left Justified	yes	yes	yes
Right Justified	yes	yes	yes

Multiple Columns:			
Maximum Number of Columns per Page	66	NA	NA
Numeric Columns	yes	no	no
Specify Intercolumn Gutter Width	no	no	no
Text Columns	yes	no	no
Unmatched Column Widths	yes	no	no

Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	yes	yes	yes
Align Footer from Left	yes	yes	no

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Page Formats:	Peachtext	PerfWriter	Practiword
Align Footer from Right	yes	yes	no
Align Footer from Top	no	yes	no
Align Header from Left	yes	yes	no
Align Header from Right	yes	yes	no
Align Header from Top	yes	yes	yes
Align Last Text Line from Bottom	no	yes	yes
Align Last Text Line from Top	yes	yes	no
Global Left Margin	yes	yes	yes
Global Right Margin	yes	yes	yes
Maximum Lines per Page	48	NA	100
Maximum Paper Length	NA	NA	100
Maximum Paper Width	NA	NA	199
Multiple Page Specifications per Doc	yes	yes	yes

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	no	no
Margins Unique from Text	yes	yes	no
Multiple Line	no	no	no
Other Page Number Format	no	no	no
Restart or Override Number	yes	yes	no
Roman page Number Format	no	no	no
Single Line	yes	yes	yes
Tabs in Header/Footer	no	no	no
Unique for Left/Right Page	yes	yes	no

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FILE HANDLING

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Document File Strategy:	Peachtext	PerfWriter	Practiword
Comments in Document Information	no	yes	yes
Comments in Text	yes	no	yes
Comments Usable for Document Search	no	yes	yes
Document in ASCII Format	yes	yes	yes
Document in Other Format	no	no	no
Edit Document larger than Memory	yes	yes	yes
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	yes	no	no
Maximum Document size (kbyte)	360	100	NA

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Document File Strategy (continued):	Peachtext	PerfWriter	Practiword
One Document per File	no	yes	yes
Page or Other Unit in Memory	no	no	no
Document Saving:			
Automatic Backup Created at Start	yes	no	yes
Current Document Edits Lost	yes	yes	yes
Current Page Edits Lost	no	no	no
Disable Automatic Backup	no	no	no
Disable Automatic Save	no	no	yes
Document Automatically Saved on Exit	no	no	no
Document Intact	no	no	no
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	no	yes	yes
Exit Document Without Saving	yes	yes	yes
Manually Save During Edit	yes	yes	yes
Specify Timing for Automatic Save	no	no	yes
"Time to Save" Warning	no	no	yes
File Import and Export:			
ASCII Export Requires CR/ Line	yes	yes	yes
ASCII Export requires CR/ Paragraph	no	no	no
ASCII Import requires CR/ Line	no	yes	no
ASCII Import Requires CR/ Paragraph	yes	no	yes
Can Merge Document Files	yes	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	no	no	no
Export Other	no	no	yes
Export Wang	no	no	no
Export WordStar	no	yes	yes
Import IBM RFT/DCA	no	no	no
Import Other	no	no	yes
Import Wang	no	no	no
Import WordStar	no	yes	yes

SPECIAL FEATURES

Spelling Checker:	Peachtext	PerfWriter	Practiword
Number of Words in Dictionary	20,000	50,000	NA
Add Word to Dictionary	yes	yes	no
Checks Defined Block	no	no	no
Checks Entire Document	yes	yes	no
Checks Multiple Documents	no	no	no
Checks Single Word	no	no	no
Document User Dictionary	no	no	no
General User Dictionary	yes	yes	no
Ignore Misspellings	yes	yes	no
Manual Replacement	yes	yes	no
Mark Misspellings in Text	yes	yes	no
Misspellings Shown Alphabetically	yes	no	no
Misspellings Shown in Context	no	yes	no
Quit and Keep Corrections	yes	no	no
Quit and Lose Corrections	no	yes	no
Special-Purpose User Dictionary	yes	yes	no
Speller Presents Best Guesses	no	no	no
Foreign Language Support:			
Arabic	no	no	no
British English	yes	no	no
Danish	yes	no	no
Dutch	yes	no	no
French	yes	no	no
French-Canadian	no	no	no
Finnish	no	no	no
German	yes	no	no
Icelandic	no	no	no
Italian	yes	no	no
Japanese	no	no	no
Norwegian	yes	no	no
Portuguese	no	no	no
Spanish	yes	no	no
Swedish	yes	no	no
Swiss	no	no	no

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Other Features:	Peachtext	PerfWriter	Practiword
Abbreviate Glossary (Text Macros)	no	no	yes
Algorithm-based Hyphenation	no	no	no
Alternate Units of Measure	no	no	no
Automatic Index Generation	no	yes	yes
Automatic T. of C. Generation	no	yes	yes
Custom Footnote Formats	no	yes	no
Customize Color Screen	yes	yes	yes
Customize Keyboard			no
Date Variable	no	no	no
Dictionary-based Hyphenation	no	no	no
Footnotes at End of Document	no	yes	no
Footnotes on Same Page	no	yes	no
Footnotes Spill to Next Page	no	yes	no
Graphics in Text	no	no	no
Keyboard Macros	no	no	no
Mail Merge	yes	no	yes
Mail Merge Using Database	yes	yes	yes
Math Works in Tables Only	no	no	no
Movement of Numbers and Formulas	no	no	no
Outline Generator	no	yes	no
Scientific Notation Support	no	no	no
Semiautomatic Hyphenation	no	no	no
Simple Math (Calculator)	no	no	no
Style Sheets or Named Formats	yes	no	yes
Telecommunications	no	no	no
Thesaurus	no	yes	no
Time Variable	no	no	no

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DOS Facilities:			
Access File from Another Directory	no	yes	yes
Access File from Another Disk	yes	yes	yes
Change Default Directory	no	yes	yes
Change Default Disk	yes	yes	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	no	yes	no
Files Always in Same Directory	yes	no	no
Files Always on Same Disk	no	no	no

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=====================================================================
                          PRINTER SUPPORT
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	Peachtext	PerfWriter	Practiword
Number of Printers Supported	17	40	24
Automatic Envelope Format/Print	no	no	no
Can Insert Printer Codes	yes	yes	no
Can Modify/Create Printer Control	no	yes	no
Chain Documents for Printing	yes	yes	no
Edit Other Document During Printing	yes	no	no
Edit Same Document During Printing	yes	no	no
Offset for Paper or Pitch Difference	no	no	no
Pause to Change Print Wheel	yes	no	no
Pause to Insert Single Sheet	yes	yes	yes
Queue Documents for Printing	yes	yes	no

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                        SOFTWARE INFORMATION
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	Peachtext	PerfWriter	Practiword
Version	2.11	2.0	1.09
List Price	$295.00	$199.00	$99.00
RAM Required	128	128	256
Minimum DOS Needed	2.0	1.25	2.0
Drive(s) Required	2	2	1
Number of Listed Features	130	153	115
Classification by PC Magazine[7]	Corporate	Professional	Professional

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Parent Cocmpany:		
PEACHTEXT 5000	PERFECT WRITER	PRACTIWORD
Peachtree Software	THORN EMI Computer	Practicorp International
4355 Shackleford Rd	Software	P. O. Box 308
Norcross, GA 30093	1881 Langley Ave.	Newton Upper Falls, MA
	Irvine, CA 92714	02164

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[7] Ibid.

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========================================================================
                    TEXT ENTRY AND EDITING
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Typing and Editing:	Prof QWERTY	ProWriter	Samna+ IV
Background Auto Insert Reformat	yes	no	no
Constant Auto Insert Reformat	no	no	no
Constant Insert with Man Reformat	no	yes	no
Drop-down Insert, Auto Reformat	no	no	yes
Either Is Default	no	no	no
Insert Is Default	yes	yes	no
Overstrike Is Default	no	no	yes
Toggle Insert/Overstrike	yes	yes	no
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:			
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	no	no
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	no
Cursor to End of Document	no	no	no
Cursor to End of Line	yes	yes	no
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	no	no
Cursor to End of Sentence	no	no	no
Cursor to End of Word	yes	yes	no
Entire Document	no	no	no
Entire Line	no	yes	no
Entire Page	no	no	no
Entire Paragraph	no	no	no
Entire Sentence	no	no	no
Entire Word	no	yes	no

Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	yes	yes	yes
Cursor Keys with Cursor Mode	no	no	no
Jump Cursor to Character	no	yes	yes
Jump Cursor to Line	no	yes	no
Jump Cursor to Paragraph	no	no	yes
Jump Cursor to Place Marker	no	yes	yes
Mouse	no	no	no

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Cursor Movement (continued):	Prof QWERTY	ProWriter	Samna+ IV
Move to Begin/End Document	yes	yes	yes
Move to Begin/End Line	no	yes	yes
Move to Begin/End Page	no	no	yes
Move to Begin/End Paragraph	no	no	yes
Move to Begin/End Screen	no	yes	yes
Move to Begin/End Sentence	no	no	yes
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	no
Move to Next/Previous Page	no	no	yes
Move to Next/Previous Paragraph	no	no	yes
Move to Next/Previous Screen	yes	yes	yes
Move to Next/Previous Sentence	no	no	yes
Move to Next/Previous Word	yes	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	no	yes	yes
Scroll Screen Right	no	yes	yes
Scroll Screen Up	yes	yes	yes
Special Keys (e.g., Crtl + Alpha)	no	no	no

Character Features:			
Alter Case	no	yes	yes
Hard Hyphens	yes	no	no
Hard Spaces	yes	yes	yes
Soft Hyphens	yes	yes	yes

Block Editing Tools:			
Arbitrary (Begin/End)	yes	yes	no
Automatic Reformat as Block Insert	yes	no	yes
Begin of Document to Cursor	no	no	yes
Block Highlighted	no	yes	yes
Block Unmarked	yes	no	no
Character	no	no	yes
Copy	yes	yes	yes
Copy/Delete to Disk File	yes	no	yes
Copy/Delete to Hold Area	no	yes	yes
Copy/Delete to Text Macros	no	no	yes
Copy/Move to Alternate Window	no	yes	yes
Copy/Move to Footnote	no	yes	yes
Copy/Move to Header/Footer	no	yes	yes
Cursor to End of Document	no	no	yes
Delete	yes	yes	yes

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Block Editing Tools (continued):	Prof QWERTY	ProWriter	Samna+ IV
Entire Document	no	no	yes
Format Block Characters	no	no	no
Format Block Page	no	no	no
Format Block Paragraph	no	no	no
Format Block Tabs	no	no	no
Line	no	no	yes
Manual Reformat as Block Insert	no	yes	no
Marked by Beg/End Character	no	no	no
Move	no	yes	yes
Page	no	no	yes
Paragraph	no	no	yes
Sentence	no	no	yes
Swap	no	no	no
Vertical Block or Column	no	no	yes
Word	no	no	yes

Search and Replace:			
Any String	yes	yes	yes
Backward	yes	no	yes
Case Insensitive	yes	yes	yes
Case Sensitive	no	yes	yes
Forward	yes	no	yes
Preserve Case on Replace	no	no	yes
Replace Format Codes	yes	yes	no
Replace Wildcards	no	yes	no
Replace with Verify	no	yes	yes
Search for Format Codes	yes	yes	no
Search for Wildcards	no	no	no
Whole Word	no	yes	yes

Undo Utility:			
Refresh Page or Other Unit	no	no	no
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	no	no	no
Undoes Last Delete	no	yes	yes
Undoes Last "Edit Action"	no	no	no

EDITING SCREEN DISPLAYS

Text Display:	Prof QWERTY	ProWriter	Samna+ IV
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	no	yes	no
Full Justification On-screen	no	no	yes
Maximum Text Characters (Horizontal)	79	80	80
Maximum Text Lines (Vertical)	20	22	22
Snake Text Columns On-screen	no	no	no

Nontext Display:			
Cursor Character Column	yes	yes	yes
Cursor Line Number	yes	yes	yes
Cursor Page Number	yes	no	yes
Document File Name	yes	yes	yes
Document File Directory	no	no	no
Document File Disk	no	no	no
Ruler Line Constant	yes	no	yes
Ruler Line Optional	no	no	no

FORMATTING FEATURES FOR FINAL TEXT

Character Formats:	Prof QWERTY	ProWriter	Samna+ IV
Bold	yes	yes	yes
Character Translate Table for Print	no	yes	no
Combination Formats	yes	yes	no
Full IBM Character Set	no	yes	yes
Italic	yes	yes	yes
Pitch Change Adjusts Margins	no	no	no
Print Wheel or Font Specification	yes	yes	yes
Proportional Spacing	no	yes	yes
Specify Strike-through Character	no	yes	yes
Standard ASCII Character Set	yes	no	no
Strike-through	yes	yes	yes
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	yes

Line Spacing:	Prof QWERTY	ProWriter	Samna+ IV
Fractional Lines per Inch	yes	1-3	yes
Keep Paragraph with Next Paragraph	no	yes	no
Keep Paragraph with Prev. Paragraph	no	no	no
Range in Lines per Inch	0-9	NA	1.5-48
Orphan Control	yes	no	yes
Specify Spacing After Paragraph	no	no	no
Specify Spacing Before Paragraph	no	no	no
Widow Control	yes	no	yes

Margins:			
Automatic Indent	yes	no	no
Automatic Outdent	yes	no	no
Left Lower Limit	1	0	1
Right Upper Limit	150	250	250

Tabulation Format:			
Center Tabs	no	yes	yes
Decimal Tabs	no	no	no
Left Tabs	yes	yes	yes
Right Tabs	no	yes	no
Specify Decimal Tab Character	no	yes	yes
Specify Tab Fill Character	no	no	no

Paragraph Formats:			
Center Justified	no	yes	yes
Fully Justified/Microspaces	yes	yes	no
Fully Justified/Normal Spaces	no	yes	yes
Left Justified	yes	yes	yes
Right Justified	no	no	no

Multiple Columns:			
Maximum Number of Columns per Page	NA	NA	60
Numeric Columns	yes	yes	yes
Specify Intercolumn Gutter Width	yes	yes	no
Text Columns	no	yes	yes
Unmatched Column Widths	yes	no	no

Page Formats:			
Align First Text Line from Top	no	yes	yes
Align Footer from Bottom	no	yes	yes
Align Footer from Left	yes	yes	yes

Page Formats (continued):	Prof QWERTY	ProWriter	Samna+ IV
Align Footer from Right	yes	yes	no
Align Footer from Top	no	no	no
Align Header from Left	yes	yes	yes
Align Header from Right	yes	yes	no
Align Header from Top	no	yes	yes
Align Last Text Line from Bottom	no	no	no
Align Last Text Line from Top	no	no	yes
Global Left Margin	yes	yes	yes
Global Right Margin	yes	no	yes
Maximum Lines per Page	NA	NA	NA
Maximum Paper Length	1	NA	NA
Maximum Paper Width	999	NA	NA
Multiple Page Specifications per Doc	yes	yes	yes

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	yes	yes	no
Multiple Line	no	no	no
Other Page Number Format	no	no	no
Restart or Override Number	yes	yes	yes
Roman page Number Format	no	no	yes
Single Line	yes	yes	yes
Tabs in Header/Footer	no	yes	yes
Unique for Left/Right Page	yes	yes	yes

FILE HANDLING

Document File Strategy:	Prof QWERTY	ProWriter	Samna+ IV
Comments in Document Information	no	no	no
Comments in Text	yes	yes	yes
Comments Usable for Document Search	no	no	no
Document in ASCII Format	yes	yes	no
Document in Other Format	no	no	yes
Edit Document larger than Memory	no	no	no
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	yes	yes	no
Maximum Document size (kbyte)	48 pages	520	360

Document File Strategy (continued):	Prof QWERTY	ProWriter	Samna+ IV
One Document per File	yes	yes	yes
Page or Other Unit in Memory	no	no	yes

Document Saving:

	Prof QWERTY	ProWriter	Samna+ IV
Automatic Backup Created at Start	no	no	no
Current Document Edits Lost	yes	yes	no
Current Page Edits Lost	no	no	no
Disable Automatic Backup	no	no	no
Disable Automatic Save	no	no	no
Document Automatically Saved on Exit	yes	no	yes
Document Intact	no	yes	yes
Document Lost on Reboot	no	yes	no
Exit Causes Reminder to Save	no	yes	no
Exit Document Without Saving	yes	yes	no
Manually Save During Edit	no	yes	no
Specify Timing for Automatic Save	no	no	yes
"Time to Save" Warning	no	yes	no

File Import and Export:

	Prof QWERTY	ProWriter	Samna+ IV
ASCII Export Requires CR/ Line	no	yes	yes
ASCII Export requires CR/ Paragraph	yes	no	no
ASCII Import requires CR/ Line	no	yes	yes
ASCII Import Requires CR/ Paragraph	yes	no	no
Can Merge Document Files	no	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	no	no	yes
Export Other	no	no	no
Export Wang	no	no	no
Export WordStar	no	no	no
Import IBM RFT/DCA	no	no	yes
Import Other	no	no	no
Import Wang	no	no	no
Import WordStar	no	no	no

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SPECIAL FEATURES
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Spelling Checker:	Prof QWERTY	ProWriter	Samna+ IV
Number of Words in Dictionary	none	66,000	100,000
Add Word to Dictionary	no	yes	yes
Checks Defined Block	no	no	no
Checks Entire Document	no	yes	yes
Checks Multiple Documents	no	no	no
Checks Single Word	no	no	no
Document User Dictionary	no	yes	no
General User Dictionary	no	yes	yes
Ignore Misspellings	no	yes	yes
Manual Replacement	no	yes	yes
Mark Misspellings in Text	no	no	yes
Misspellings Shown Alphabetically	no	no	no
Misspellings Shown in Context	no	yes	yes
Quit and Keep Corrections	no	no	no
Quit and Lose Corrections	no	no	yes
Special-Purpose User Dictionary	no	yes	yes
Speller Presents Best Guesses	no	yes	yes

Foreign Language Support:

	Prof QWERTY	ProWriter	Samna+ IV
Arabic	no	no	no
British English	no	yes	no
Danish	no	no	no
Dutch	no	no	no
French	no	yes	yes
French-Canadian	no	no	yes
Finnish	no	no	yes
German	no	yes	yes
Icelandic	no	no	no
Italian	no	no	yes
Japanese	no	no	no
Norwegian	no	no	no
Portuguese	no	no	no
Spanish	no	yes	yes
Swedish	no	no	yes
Swiss	no	no	yes

Other Features:	Prof QWERTY	ProWriter	Samna+ IV
Abbreviate Glossary (Text Macros)	no	yes	yes
Algorithm-based Hyphenation	no	yes	yes
Alternate Units of Measure	no	no	no
Automatic Index Generation	no	yes	yes
Automatic T. of C. Generation	no	yes	yes
Custom Footnote Formats	no	yes	yes
Customize Color Screen	no	yes	yes
Customize Keyboard	no	yes	yes
Date Variable	no	yes	no
Dictionary-based Hyphenation	no	no	no
Footnotes at End of Document	no	yes	yes
Footnotes on Same Page	no	yes	yes
Footnotes Spill to Next Page	no	yes	yes
Graphics in Text	no	no	yes
Keyboard Macros	no	yes	yes
Mail Merge	yes	yes	yes
Mail Merge Using Database	yes	no	yes
Math Works in Tables Only	no	no	no
Movement of Numbers and Formulas	no	no	yes
Outline Generator	no	no	yes
Scientific Notation Support	no	yes	no
Semiautomatic Hyphenation	no	no	no
Simple Math (Calculator)	no	no	yes
Style Sheets or Named Formats	no	yes	no
Telecommunications	no	no	no
Thesaurus	no	no	no
Time Variable	no	no	no

DOS Facilities:	Prof QWERTY	ProWriter	Samna+ IV
Access File from Another Directory	no	yes	yes
Access File from Another Disk	yes	yes	yes
Change Default Directory	no	yes	yes
Change Default Disk	yes	yes	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	yes	yes	yes
Files Always in Same Directory	yes	no	no
Files Always on Same Disk	no	no	no

PRINTER SUPPORT

	Prof QWERTY	ProWriter	Samna+ IV
Number of Printers Supported	15	60	44
Automatic Envelope Format/Print	no	yes	yes
Can Insert Printer Codes	yes	no	no
Can Modify/Create Printer Control	no	yes	no
Chain Documents for Printing	yes	yes	no
Edit Other Document During Printing	no	no	yes
Edit Same Document During Printing	no	no	no
Offset for Paper or Pitch Difference	no	yes	yes
Pause to Change Print Wheel	no	yes	yes
Pause to Insert Single Sheet	yes	yes	yes
Queue Documents for Printing	no	yes	yes

SOFTWARE INFORMATION

	Prof QWERTY	ProWriter	Samna+ IV
Version	3H	1.10	1.1
List Price	$149.00	$490.00	$695.00
RAM Required	256	512	512
Minimum DOS Needed	2.1	2.0	2.0
Drive(s) Required	1	2	2
Number of Listed Features	100	155	135
Classification by PC Magazine[8]	Professional	Professional	Corporate

Parent Company:

PROFESSIONAL QWERTY	PROFESSIONAL WRITER'S PACKAGE	SAMNA PLUS IV
HFK Software	Emergine Technology	Samna Corp.
68 Wells, Rd.	Consultsants Inc.	2700 NE Expwy.
Lincoln, MA 01773	4760 Walnut Street	Suite C-700
	Boulder, CO 80301	Atlanta, GA 30345

[8]Ibid.

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                    TEXT ENTRY AND EDITING
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Typing and Editing:	SmartWord	Spellbinder	Superwriter
Background Auto Insert Reformat	no	no	no
Constant Auto Insert Reformat	yes	yes	yes
Constant Insert with Man Reformat	no	no	no
Drop-down Insert, Auto Reformat	no	yes	no
Either Is Default	yes	no	yes
Insert Is Default	no	no	no
Overstrike Is Default	no	yes	no
Toggle Insert/Overstrike	yes	yes	yes
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:			
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	no	no
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	yes
Cursor to End of Document	yes	yes	no
Cursor to End of Line	no	yes	yes
Cursor to End of Page	no	yes	no
Cursor to End of Paragraph	no	yes	no
Cursor to End of Sentence	no	yes	no
Cursor to End of Word	no	yes	yes
Entire Document	no	yes	no
Entire Line	yes	yes	no
Entire Page	no	yes	no
Entire Paragraph	yes	yes	no
Entire Sentence	yes	yes	no
Entire Word	yes	yes	no

Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	yes	yes	yes
Cursor Keys with Cursor Mode	no	yes	yes
Jump Cursor to Character	no	yes	no
Jump Cursor to Line	no	yes	no
Jump Cursor to Paragraph	no	yes	no
Jump Cursor to Place Marker	yes	yes	no
Mouse	no	no	no

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Cursor Movement (continued):	SmartWord	Spellbinder	Superwriter
Move to Begin/End Document	yes	yes	yes
Move to Begin/End Line	yes	yes	yes
Move to Begin/End Page	no	yes	no
Move to Begin/End Paragraph	no	yes	no
Move to Begin/End Screen	no	yes	yes
Move to Begin/End Sentence	no	yes	no
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	no	yes	no
Move to Next/Previous Paragraph	no	yes	no
Move to Next/Previous Screen	yes	yes	yes
Move to Next/Previous Sentence	no	yes	no
Move to Next/Previous Word	yes	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	no	yes	yes
Scroll Screen Right	no	yes	yes
Scroll Screen Up	yes	yes	yes
Special Keys (e.g., Crtl + Alpha)	no	no	no

Character Features:			
Alter Case	no	no	yes
Hard Hyphens	yes	yes	yes
Hard Spaces	yes	yes	no
Soft Hyphens	no	yes	yes

Block Editing Tools:			
Arbitrary (Begin/End)	yes	yes	yes
Automatic Reformat as Block Insert	no	yes	yes
Begin of Document to Cursor	no	yes	no
Block Highlighted	yes	yes	no
Block Unmarked	no	no	no
Character	no	yes	no
Copy	yes	yes	yes
Copy/Delete to Disk File	yes	yes	yes
Copy/Delete to Hold Area	yes	yes	no
Copy/Delete to Text Macros	no	yes	no
Copy/Move to Alternate Window	yes	no	yes
Copy/Move to Footnote	no	yes	no
Copy/Move to Header/Footer	no	yes	no
Cursor to End of Document	yes	yes	no
Delete	yes	yes	yes

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Block Editing Tools (continued):	SmartWord	Spellbinder	Superwriter
Entire Document	no	yes	no
Format Block Characters	no	yes	no
Format Block Page	no	yes	no
Format Block Paragraph	yes	yes	no
Format Block Tabs	no	yes	no
Line	yes	yes	no
Manual Reformat as Block Insert			no
Marked by Beg/End Character	no	no	yes
Move	yes	yes	yes
Page	no	yes	no
Paragraph	no	yes	no
Sentence	no	yes	no
Swap	no	no	no
Vertical Block or Column	no	yes	no
Word	no	yes	no

Search and Replace:

	SmartWord	Spellbinder	Superwriter
Any String	yes	yes	yes
Backward	yes	no	no
Case Insensitive	yes	yes	no
Case Sensitive	yes	yes	yes
Forward	yes	yes	yes
Preserve Case on Replace	no	yes	no
Replace Format Codes	no	yes	yes
Replace Wildcards	yes	yes	
Replace with Verify	yes	yes	yes
Search for Format Codes	no	yes	yes
Search for Wildcards	no	yes	no
Whole Word	yes	no	no

Undo Utility:

	SmartWord	Spellbinder	Superwriter
Refresh Page or Other Unit	no	no	no
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	no	yes	no
Undoes Last Delete	yes	no	no
Undoes Last "Edit Action"	no	no	no

EDITING SCREEN DISPLAYS

Text Display:

	SmartWord	Spellbinder	Superwriter
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	no	no	yes
Full Justification On-screen	yes	yes	no
Maximum Text Characters (Horizontal)	79	80	80
Maximum Text Lines (Vertical)	21	24	24
Snake Text Columns On-screen	no	yes	no

Nontext Display:

	SmartWord	Spellbinder	Superwriter
Cursor Character Column	yes	yes	yes
Cursor Line Number	yes	yes	yes
Cursor Page Number	yes	no	no
Document File Name	yes	no	yes
Document File Directory	no	no	no
Document File Disk	no	no	yes
Ruler Line Constant	no	no	no
Ruler Line Optional	yes	yes	no

FORMATTING FEATURES FOR FINAL TEXT

Character Formats:

	SmartWord	Spellbinder	Superwriter
Bold	yes	yes	yes
Character Translate Table for Print	no	no	no
Combination Formats	yes	yes	yes
Full IBM Character Set	yes	no	yes
Italic	yes	no	yes
Pitch Change Adjusts Margins	no	yes	no
Print Wheel or Font Specification	yes	yes	yes
Proportional Spacing	no	yes	yes
Specify Strike-through Character	no	yes	yes
Standard ASCII Character Set	no	yes	yes
Strike-through	yes	yes	no
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	yes

Line Spacing:	SmartWord	Spellbinder	Superwriter
Fractional Lines per Inch	no	yes	yes
Keep Paragraph with Next Paragraph	no	yes	no
Keep Paragraph with Prev. Paragraph	no	no	no
Range in Lines per Inch	1-8	1-3	1-65
Orphan Control	no	yes	yes
Specify Spacing After Paragraph	no	yes	no
Specify Spacing Before Paragraph	no	no	no
Widow Control	no	yes	yes

Margins:			
Automatic Indent	yes	yes	no
Automatic Outdent	yes	yes	yes
Left Lower Limit	0	0	0
Right Upper Limit	132	159	250

Tabulation Format:			
Center Tabs	yes	yes	no
Decimal Tabs	no	yes	no
Left Tabs	yes	yes	yes
Right Tabs	no	yes	no
Specify Decimal Tab Character	no	no	no
Specify Tab Fill Character	no	no	yes

Paragraph Formats:			
Center Justified	yes	yes	yes
Fully Justified/Microspaces	yes	yes	yes
Fully Justified/Normal Spaces	yes	yes	no
Left Justified	yes	yes	yes
Right Justified	yes	yes	yes

Multiple Columns:			
Maximum Number of Columns per Page	NA	2	NA
Numeric Columns	no	yes	yes
Specify Intercolumn Gutter Width	no	yes	yes
Text Columns	no	yes	yes
Unmatched Column Widths	no	yes	yes

Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	no	yes	yes
Align Footer from Left	no	yes	yes

Page Formats:	SmartWord	Spellbinder	Superwriter
Align Footer from Right	no	yes	yes
Align Footer from Top	no	yes	yes
Align Header from Left	no	yes	yes
Align Header from Right	no	yes	yes
Align Header from Top	no	yes	yes
Align Last Text Line from Bottom	yes	yes	yes
Align Last Text Line from Top	no	yes	yes
Global Left Margin	yes	yes	yes
Global Right Margin	yes	yes	yes
Maximum Lines per Page	120	255	yes
Maximum Paper Length	120	NA	25
Maximum Paper Width	132	NA	NA
Multiple Page Specifications per Doc.	NA	yes	16

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	no	yes	yes
Multiple Line	no	no	no
Other Page Number Format	no	no	no
Restart or Override Number	no	yes	yes
Roman page Number Format	no	no	no
Single Line	yes	yes	yes
Tabs in Header/Footer	no	yes	yes
Unique for Left/Right Page	no	yes	no

FILE HANDLING

Document File Strategy:	SmartWord	Spellbinder	Superwriter
Comments in Document Information	no	no	no
Comments in Text	no	yes	yes
Comments Usable for Document Search	no	no	yes
Document in ASCII Format	no	yes	no
Document in Other Format	yes	no	yes
Edit Document larger than Memory	yes	yes	no
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	yes	yes	yes
Maximum Document size (kbyte)	360	360	NA

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Header/Footer (continued):	SmartWord	Spellbinder	Superwriter
One Document per File	yes	no	yes
Page or Other Unit in Memory	no	no	no

Document Saving:

	SmartWord	Spellbinder	Superwriter
Automatic Backup Created at Start	no	yes	yes
Current Document Edits Lost	yes	yes	yes
Current Page Edits Lost	no	no	no
Disable Automatic Backup	no	no	yes
Disable Automatic Save	no	no	no
Document Automatically Saved on Exit	no	no	yes
Document Intact	no	no	no
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	yes	yes	yes
Exit Document Without Saving	yes	yes	yes
Manually Save During Edit	yes	yes	no
Specify Timing for Automatic Save	no	no	no
"Time to Save" Warning	no	no	no

File Import and Export:

	SmartWord	Spellbinder	Superwriter
ASCII Export Requires CR/ Line	yes	no	yes
ASCII Export requires CR/ Paragraph	no	no	no
ASCII Import requires CR/ Line	yes	no	no
ASCII Import Requires CR/ Paragraph	no	yes	yes
Can Merge Document Files	yes	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	no	no	no
Export Other	no	no	no
Export Wang	no	no	no
Export WordStar	no	yes	no
Import IBM RFT/DCA	no	no	no
Import Other	no	no	no
Import Wang	no	no	no
Import WordStar	no	yes	no

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                           SPECIAL FEATURES
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Spelling Checker:	SmartWord	Spellbinder	Superwriter
Number of Words in Dictionary	80,000	50,000	20,000
Add Word to Dictionary	yes	yes	yes
Checks Defined Block	yes	no	no
Checks Entire Document	yes	yes	yes
Checks Multiple Documents	no	no	no
Checks Single Word	yes	no	no
Document User Dictionary	yes	no	no
General User Dictionary	yes	yes	yes
Ignore Misspellings	yes	yes	yes
Manual Replacement	yes	yes	no
Mark Misspellings in Text	no	yes	no
Misspellings Shown Alphabetically	no	no	yes
Misspellings Shown in Context	yes	yes	no
Quit and Keep Corrections	yes	yes	no
Quit and Lose Corrections	no	no	no
Special-Purpose User Dictionary	yes	no	yes
Speller Presents Best Guesses	yes	yes	no

Foreign Language Support:	SmartWord	Spellbinder	Superwriter
Arabic	no	no	no
British English	no	yes	no
Danish	no	no	no
Dutch	no	yes	no
French	no	yes	no
French-Canadian	no	no	no
Finnish	no	no	no
German	no	yes	no
Icelandic	no	no	no
Italian	no	no	no
Japanese	no	no	no
Norwegian	no	no	no
Portuguese	no	no	no
Spanish	no	yes	no
Swedish	no	no	no
Swiss	no	no	no

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TEXT ENTRY AND EDITING
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Typing and Editing:	Volkswriter	WordPerfect	WordMARC
Background Auto Insert Reformat	no	no	no
Constant Auto Insert Reformat	no	yes	no
Constant Insert with Man Reformat	yes	no	no
Drop-down Insert, Auto Reformat	no	no	yes
Either Is Default	no	no	no
Insert Is Default	no	yes	no
Overstrike Is Default	yes	no	yes
Toggle Insert/Overstrike	yes	yes	yes
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:			
Beginning of Document to Cursor	no	no	yes
Beginning of Line to Cursor	no	no	yes
Beginning of Page to Cursor	no	no	yes
Beginning of Paragraph to Cursor	no	no	yes
Beginning of Sentence to Cursor	no	no	yes
Beginning of Word to Cursor	no	no	yes
Character	yes	yes	yes
Cursor to End of Document	no	no	no
Cursor to End of Line	yes	no	no
Cursor to End of Page	no	yes	no
Cursor to End of Paragraph	no	no	no
Cursor to End of Sentence	no	no	no
Cursor to End of Word	yes	no	no
Entire Document	no	no	no
Entire Line	yes	yes	no
Entire Page	no	yes	no
Entire Paragraph	no	no	no
Entire Sentence	no	no	no
Entire Word	no	yes	no

Cursor Movement:			
Cursor Keys with Alt/Ctrl/Shift	yes	yes	yes
Cursor Keys with Cursor Mode	yes	yes	yes
Jump Cursor to Character	no	yes	no
Jump Cursor to Line	no	yes	no
Jump Cursor to Paragraph	yes	yes	yes
Jump Cursor to Place Marker	no	no	yes
Mouse	no	no	no

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Cursor Movement (continued):	Volkswriter	WordPerfect	WordMARC
Move to Begin/End Document	yes	yes	yes
Move to Begin/End Line	yes	yes	no
Move to Begin/End Page	yes	no	yes
Move to Begin/End Paragraph	no	no	no
Move to Begin/End Screen	yes	yes	yes
Move to Begin/End Sentence	no	no	no
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	yes	yes	yes
Move to Next/Previous Paragraph	no	no	no
Move to Next/Previous Screen	yes	yes	yes
Move to Next/Previous Sentence	no	no	no
Move to Next/Previous Word	yes	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	yes	yes	yes
Scroll Screen Right	yes	yes	yes
Scroll Screen Up	yes	yes	no
Special Keys (e.g., Crtl + Alpha)	no	no	no

Character Features:			
Alter Case	no	yes	yes
Hard Hyphens	yes	yes	yes
Hard Spaces	yes	yes	yes
Soft Hyphens	no	yes	yes

Block Editing Tools:			
Arbitrary (Begin/End)	yes	yes	yes
Automatic Reformat as Block Insert	yes	yes	yes
Begin of Document to Cursor	no	yes	no
Block Highlighted	no	yes	no
Block Unmarked	no	no	yes
Character	no	yes	no
Copy	yes	yes	yes
Copy/Delete to Disk File	yes	yes	yes
Copy/Delete to Hold Area	no	yes	no
Copy/Delete to Text Macros	no	no	no
Copy/Move to Alternate Window	no	yes	no
Copy/Move to Footnote	no	yes	no
Copy/Move to Header/Footer	no	yes	no
Cursor to End of Document	no	yes	no
Delete	yes	yes	yes

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Block Editing Tools (continued):	Volkswriter	WordPerfect	WordMARC
Entire Document	no	no	no
Format Block Characters	no	yes	no
Format Block Page	no	no	no
Format Block Paragraph	no	no	no
Format Block Tabs	no	no	no
Line	no	yes	no
Manual Reformat as Block Insert	no	no	no
Marked by Beg/End Character	yes	no	no
Move	yes	yes	yes
Page	no	yes	no
Paragraph	no	yes	no
Sentence	no	yes	no
Swap	no	no	no
Vertical Block or Column	yes	yes	yes
Word	no	yes	

Search and Replace:	Volkswriter	WordPerfect	WordMARC
Any String	yes	yes	yes
Backward	no	yes	no
Case Insensitive	no	yes	no
Case Sensitive	yes	no	yes
Forward	yes	yes	yes
Preserve Case on Replace	no	yes	no
Replace Format Codes	no	yes	yes
Replace Wildcards			no
Replace with Verify	yes	yes	yes
Search for Format Codes	no	yes	yes
Search for Wildcards	no	no	no
Whole Word	no	yes	no

Undo Utility:	Volkswriter	WordPerfect	WordMARC
Refresh Page or Other Unit	no	yes	no
Rotating (Undoes Previous Undo)	no	yes	no
Undo Not Available	yes	no	no
Undoes Last Delete	no	yes	no
Undoes Last "Edit Action"	no	no	no

EDITING SCREEN DISPLAYS

Text Display:	Volkswriter	WordPerfect	WordMARC
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	yes	no	no
Full Justification On-screen	no	no	yes
Maximum Text Characters (Horizontal)	80	80	163
Maximum Text Lines (Vertical)	24	24	20
Snake Text Columns On-screen	no	yes	no
	no	no	no

Nontext Display:	Volkswriter	WordPerfect	WordMARC
Cursor Character Column	yes	yes	yes
Cursor Line Number	yes	yes	yes
Cursor Page Number	yes	yes	yes
Document File Name	yes	no	yes
Document File Directory	no	no	yes
Document File Disk	yes	no	yes
Ruler Line Constant	no	no	no
Ruler Line Optional	no	yes	yes

FORMATTING FEATURES FOR FINAL TEXT

Character Formats:	Volkswriter	WordPerfect	WordMARC
Bold	yes	yes	yes
Character Translate Table for Print	yes	yes	yes
Combination Formats	yes	yes	yes
Full IBM Character Set	yes	no	no
Italic	yes	yes	no
Pitch Change Adjusts Margins	no	yes	no
Print Wheel or Font Specification	yes	yes	yes
Proportional Spacing	yes	yes	no
Specify Strike-through Character	no	yes	yes
Standard ASCII Character Set	yes	yes	yes
Strike-through	yes	yes	yes
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	yes

Line Spacing:	Volkswriter	WordPerfect	WordMARC
Fractional Lines per Inch	no	yes	yes
Keep Paragraph with Next Paragraph	no	yes	yes
Keep Paragraph with Prev. Paragraph	no	yes	yes
Range in Lines per Inch	1	1-500	1-3
Orphan Control	no	yes	yes
Specify Spacing After Paragraph	no	no	no
Specify Spacing Before Paragraph	no	no	no
Widow Control	no	yes	yes

Margins:			
Automatic Indent	yes	yes	no
Automatic Outdent	no	yes	no
Left Lower Limit	0	0	0
Right Upper Limit	250	250	163

Tabulation Format:			
Center Tabs	no	yes	yes
Decimal Tabs	no	yes	no
Left Tabs	yes	yes	yes
Right Tabs	no	no	yes
Specify Decimal Tab Character	no	yes	yes
Specify Tab Fill Character	no	no	no

Paragraph Formats:			
Center Justified	no	no	no
Fully Justified/Microspaces	yes	yes	yes
Fully Justified/Normal Spaces	yes	yes	yes
Left Justified	yes	yes	yes
Right Justified	no	no	no

Multiple Columns:			
Maximum Number of Columns per Page	NA	NA	80
Numeric Columns	no	yes	yes
Specify Intercolumn Gutter Width	no	yes	yes
Text Columns	no	yes	yes
Unmatched Column Widths	no	yes	yes

Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	no	yes	yes
Align Footer from Left	yes	yes	yes

Page Formats (continued):	Volkswriter	WordPerfect	WordMARC
Align Footer from Right	yes	yes	yes
Align Footer from Top	yes	yes	no
Align Header from Left	yes	yes	yes
Align Header from Right	yes	yes	yes
Align Header from Top	yes	yes	yes
Align Last Text Line from Bottom	no	yes	yes
Align Last Text Line from Top	yes	yes	no
Global Left Margin	yes	yes	yes
Global Right Margin	no	yes	yes
Maximum Lines per Page	99	500	32765
Maximum Paper Length	1	NA	999
Maximum Paper Width	250	NA	163
Multiple Page Specifications per Doc	yes	yes	yes

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	no	yes	yes
Multiple Line	no	no	no
Other Page Number Format	no	no	no
Restart or Override Number	yes	no	yes
Roman page Number Format	no	yes	no
Single Line	yes	yes	yes
Tabs in Header/Footer	no	yes	yes
Unique for Left/Right Page	yes	yes	no

FILE HANDLING

Document File Strategy:	Volkswriter	WordPerfect	WordMARC
Comments in Document Information	no	no	no
Comments in Text	yes	no	no
Comments Usable for Document Search	no	yes	no
Document in ASCII Format	yes	no	yes
Document in Other Format	no	yes	
Edit Document larger than Memory	yes	yes	yes
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	yes	yes	no
Maximum Document size (kbyte)	NA	NA	650 pages

Document File Strategy (Continued):	Volkswriter	WordPerfect	WordMARC
One Document per File	yes	yes	yes
Page or Other Unit in Memory	no	no	no

Document Saving:

	Volkswriter	WordPerfect	WordMARC
Automatic Backup Created at Start	yes	no	no
Current Document Edits Lost	yes	yes	yes
Current Page Edits Lost	no	no	yes
Disable Automatic Backup	yes	yes	no
Disable Automatic Save	no	yes	no
Document Automatically Saved on Exit	no	no	no
Document Intact	no	no	no
Document Lost on Reboot	no	no	yes
Exit Causes Reminder to Save	yes	yes	yes
Exit Document Without Saving	yes	yes	yes
Manually Save During Edit	yes	yes	no
Specify Timing for Automatic Save	no	yes	no
"Time to Save" Warning	no	no	no

File Import and Export:

	Volkswriter	WordPerfect	WordMARC
ASCII Export Requires CR/Line	yes	yes	yes
ASCII Export requires CR/Paragraph	no	no	no
ASCII Import requires CR/Line	yes	no	yes
ASCII Import Requires CR/Paragraph	no	yes	no
Can Merge Document Files	no	yes	yes
Cannot Import ASCII File	no	no	no
Export IBM RFT/DCA	no	yes	no
Export Other	no	yes	yes
Export Wang	no	no	no
Export WordStar	no	yes	no
Import IBM RFT/DCA	yes	yes	no
Import Other	no	yes	yes
Import Wang	yes	no	no
Import WordStar	no	yes	no

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SPECIAL FEATURES
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Spelling Checker:	Volkswriter	WordPerfect	WordMARC
Number of Words in Dictionary	NA	113,000	60,000
Add Word to Dictionary	no	yes	yes
Checks Defined Block	no	yes	no
Checks Entire Document	no	yes	yes
Checks Multiple Documents	no	no	no
Checks Single Word	no	yes	no
Document User Dictionary	no	yes	yes
General User Dictionary	no	yes	yes
Ignore Misspellings	no	yes	yes
Manual Replacement	no	yes	yes
Mark Misspellings in Text	no	no	no
Misspellings Shown Alphabetically	no	no	no
Misspellings Shown in Context	no	yes	yes
Quit and Keep Corrections	no	yes	yes
Quit and Lose Corrections	no	no	no
Special-Purpose User Dictionary	no	yes	yes
Speller Presents Best Guesses	no	yes	no

Foreign Language Support:	Volkswriter	WordPerfect	WordMARC
Arabic	no	no	no
British English	yes	yes	yes
Danish	no	yes	no
Dutch	yes	yes	yes
French	yes	yes	yes
French-Canadian	no	no	no
Finnish	no	yes	no
German	yes	yes	yes
Icelandic	no	yes	no
Italian	yes	yes	no
Japanese	no	no	no
Norwegian	no	yes	no
Portuguese	no	yes	no
Spanish	no	yes	no
Swedish	no	yes	no
Swiss	no	yes	no

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Other Features:	Volkswriter	WordPerfect	WordMARC
Abbreviate Glossary (Text Macros)	no	no	yes
Algorithm-based Hyphenation	no	no	yes
Alternate Units of Measure	no	no	no
Automatic Index Generation	no	yes	no
Automatic T. of C. Generation	no	yes	no
Custom Footnote Formats	no	yes	no
Customize Color Screen	yes	yes	yes
Customize Keyboard	yes	yes	yes
Date Variable	no	yes	no
Dictionary-based Hyphenation	no	no	no
Footnotes at End of Document	no	yes	no
Footnotes on Same Page	no	yes	no
Footnotes Spill to Next Page	no	yes	no
Graphics in Text	yes	yes	yes
Keyboard Macros	no	yes	no
Mail Merge	yes	yes	yes
Mail Merge Using Database	no	no	no
Math Works in Tables Only	no	yes	no
Movement of Numbers and Formulas	no	yes	no
Outline Generator	no	yes	no
Scientific Notation Support	no	yes	yes
Semiautomatic Hyphenation	no	yes	yes
Simple Math (Calculator)	no	no	no
Style Sheets or Named Formats	yes	no	yes
Telecommunications	no	no	no
Thesaurus	no	yes	no
Time Variable	no	yes	no

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DOS Facilities:	Volkswriter	WordPerfect	WordMARC
Access File from Another Directory	no	yes	yes
Access File from Another Disk	yes	yes	yes
Change Default Directory	yes	yes	yes
Change Default Disk	yes	yes	yes
Document or Other Directory Access	yes	yes	yes
File Directory Is Edit Menu	no	yes	yes
Files Always in Same Directory	no	no	no
Files Always on Same Disk	no	no	no

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                         PRINTER SUPPORT
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	Volkswriter	WordPerfect	WordMARC
Number of Printers Supported	113	191	92
Automatic Envelope Format/Print	no	no	no
Can Insert Printer Codes	yes	yes	no
Can Modify/Create Printer Control	yes	yes	yes
Chain Documents for Printing	yes	yes	no
Edit Other Document During Printing	no	yes	yes
Edit Same Document During Printing	no	yes	yes
Offset for Paper or Pitch Difference	yes	no	no
Pause to Change Print Wheel	yes	yes	no
Pause to Insert Single Sheet	yes	yes	yes
Queue Documents for Printing	no	yes	yes

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                       SOFTWARE INFORMATION
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	Volkswriter	WordPerfect	WordMARC
Version	1.0	4.2	4.1.1
List Price	$99.00	$495.00	$495.00
RAM Required	256	256	256
Minimum DOS Needed	2.0	2.0	2.0
Drive(s) Required	2	2	2
Number of Listed Features	118	197	153
Classified by PC Magazine[10]	Personal	Corporate	Professional

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Parent Company:		
VOLKSWRITER DELUXE PLUS	WORDPERFECT	WordMARC
Lifetree Software Inc.	Satellite Software	WordMARC Software
411 Pacific Street	International	International Inc.
Monterey, CA 93940	288 W. Center St.	260 Sheridan
	Orem, UT 84057	Palo Alto, CA 94306

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[10] Ibid.

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                TEXT ENTRY AND EDITING
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Typing and Editing:	WordResult	WordStar	WStar-2000
Background Auto Insert Reformat	no	no	no
Constant Auto Insert Reformat	no	no	yes
Constant Insert with Man Reformat	yes	yes	no
Drop-down Insert, Auto Reformat	no	no	yes
Either Is Default	no	yes	yes
Insert Is Default	yes	no	no
Overstrike Is Default	no	no	no
Toggle Insert/Overstrike	yes	yes	yes
Typing Format Continues Unit Changed	yes	yes	yes

Deletion Formats:	WordResult	WordStar	WStar-2000
Beginning of Document to Cursor	no	no	no
Beginning of Line to Cursor	no	yes	yes
Beginning of Page to Cursor	no	no	no
Beginning of Paragraph to Cursor	no	no	no
Beginning of Sentence to Cursor	no	no	no
Beginning of Word to Cursor	no	no	no
Character	yes	yes	yes
Cursor to End of Document	yes	no	no
Cursor to End of Line	no	yes	yes
Cursor to End of Page	no	no	no
Cursor to End of Paragraph	no	no	yes
Cursor to End of Sentence	no	no	yes
Cursor to End of Word	no	yes	no
Entire Document	yes	no	yes
Entire Line	yes	yes	yes
Entire Page	yes	no	no
Entire Paragraph	yes	no	yes
Entire Sentence	yes	no	yes
Entire Word	yes	no	yes

Cursor Movement:	WordResult	WordStar	WStar-2000
Cursor Keys with Alt/Ctrl/Shift	yes	yes	yes
Cursor Keys with Cursor Mode	yes	no	no
Jump Cursor to Character	no	no	no
Jump Cursor to Line	no	no	no
Jump Cursor to Paragraph	yes	no	yes
Jump Cursor to Place Marker	yes	yes	yes
Mouse	no	no	no

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Cursor Movement (continued):	WordResult	WordStar	WStar-2000
Move to Begin/End Document	no	yes	no
Move to Begin/End Line	yes	yes	yes
Move to Begin/End Page	no	no	yes
Move to Begin/End Paragraph	no	no	no
Move to Begin/End Screen	yes	yes	yes
Move to Begin/End Sentence	no	no	yes
Move to Next/Previous Character	yes	yes	yes
Move to Next/Previous Line	yes	yes	yes
Move to Next/Previous Page	no	no	yes
Move to Next/Previous Paragraph	no	no	yes
Move to Next/Previous Screen	yes	yes	yes
Move to Next/Previous Sentence	no	no	yes
Move to Next/Previous Word	yes	yes	yes
Scroll Screen Down	yes	yes	yes
Scroll Screen Left	yes	yes	yes
Scroll Screen Right	yes	yes	yes
Scroll Screen Up	yes	yes	no
Special Keys (e.g., Crtl + Alpha)	no	yes	no

Character Features:	WordResult	WordStar	WStar-2000
Alter Case	no	no	no
Hard Hyphens	yes	no	yes
Hard Spaces	yes	yes	no
Soft Hyphens	yes	yes	yes

Block Editing Tools:	WordResult	WordStar	WStar-2000
Arbitrary (Begin/End)	yes	yes	yes
Automatic Reformat as Block Insert	yes	no	yes
Begin of Document to Cursor	no	no	no
Block Highlighted	yes	yes	no
Block Unmarked	no	no	no
Character	no	no	no
Copy	no	yes	yes
Copy/Delete to Disk File	yes	yes	yes
Copy/Delete to Hold Area	no	no	yes
Copy/Delete to Text Macros	yes	no	yes
Copy/Move to Alternate Window	no	no	yes
Copy/Move to Footnote	yes	no	yes
Copy/Move to Header/Footer	yes	no	yes
Cursor to End of Document	no	no	no
Delete	yes	yes	yes

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Block Editing Tools (continued):	WordResult	WordStar	WStar-2000
Entire Document	no	no	no
Format Block Characters	no	no	yes
Format Block Page	no	no	yes
Format Block Paragraph	no	no	yes
Format Block Tabs	no	no	yes
Line	yes	no	no
Manual Reformat as Block Insert	no	yes	no
Marked by Beg/End Character	no	no	no
Move	yes	yes	yes
Page	yes	no	no
Paragraph	yes	no	no
Sentence	yes	no	no
Swap	no	no	no
Vertical Block or Column	no	yes	yes
Word	no	no	no

Search and Replace:

	WordResult	WordStar	WStar-2000
Any String	yes	yes	yes
Backward	no	yes	yes
Case Insensitive	yes	yes	yes
Case Sensitive	no	yes	yes
Forward	yes	yes	yes
Preserve Case on Replace	yes	no	yes
Replace Format Codes	no	yes	yes
Replace Wildcards	yes	no	yes
Replace with Verify	yes	yes	yes
Search for Format Codes	no	yes	yes
Search for Wildcards	yes	yes	no
Whole Word	yes	yes	yes

Undo Utility:

	WordResult	WordStar	WStar-2000
Refresh Page or Other Unit	no	no	yes
Rotating (Undoes Previous Undo)	no	no	no
Undo Not Available	no	yes	no
Undoes Last Delete	no	no	yes
Undoes Last "Edit Action"	no	no	no

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                         EDITING SCREEN DISPLAYS
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Text Display:	WordResult	WordStar	WStar-2000
Automatic Word Wrap	yes	yes	yes
Can Disable Word Wrap	no	yes	no
Full Justification On-screen	yes	yes	no
Maximum Text Characters (Horizontal)	172	79	80
Maximum Text Lines (Vertical)	19	23	23
Snake Text Columns On-screen	no	no	no
	no	no	no

Nontext Display:	WordResult	WordStar	WStar-2000
Cursor Character Column	yes	yes	yes
Cursor Line Number	yes	yes	yes
Cursor Page Number	yes	yes	yes
Document File Name	no	yes	yes
Document File Directory	no	no	yes
Document File Disk	no	yes	yes
Ruler Line Constant	yes	no	yes
Ruler Line Optional	no	yes	no

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                   FORMATTING FEATURES FOR FINAL TEXT
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Character Formats:	WordResult	WordStar	WStar-2000
Bold	yes	yes	yes
Character Translate Table for Print	no	no	no
Combination Formats	yes	yes	yes
Full IBM Character Set	no	no	no
Italic	no	no	yes
Pitch Change Adjusts Margins	yes	no	yes
Print Wheel or Font Specification	yes	yes	yes
Proportional Spacing	yes	no	yes
Specify Strike-through Character	yes	no	yes
Standard ASCII Character Set	yes	yes	yes
Strike-through	yes	yes	yes
Subscript	yes	yes	yes
Superscript	yes	yes	yes
Underlined	yes	yes	yes
Variable Monospace Pitch	yes	yes	yes

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Line Spacing:	WordResult	WordStar	WStar-2000
Fractional Lines per Inch	yes	yes	yes
Keep Paragraph with Next Paragraph	no	no	yes
Keep Paragraph with Prev. Paragraph	yes	no	no
Range in Lines per Inch	1-3	6-9	2-8
Orphan Control	yes	yes	yes
Specify Spacing After Paragraph	yes	no	no
Specify Spacing Before Paragraph	yes	no	no
Widow Control	yes	no	no

Margins:			
Automatic Indent	yes	no	yes
Automatic Outdent	yes	no	yes
Left Lower Limit	0	1	1
Right Upper Limit	172	240	240

Tabulation Format:			
Center Tabs	no	no	yes
Decimal Tabs	no	yes	yes
Left Tabs	yes	yes	yes
Right Tabs	no	no	yes
Specify Decimal Tab Character	no	yes	yes
Specify Tab Fill Character	no	no	no

Paragraph Formats:			
Center Justified	yes	no	no
Fully Justified/Microspaces	no	yes	yes
Fully Justified/Normal Spaces	yes	yes	yes
Left Justified	yes	yes	yes
Right Justified	yes	no	no

Multiple Columns:			
Maximum Number of Columns per Page	NA	NA	0
Numeric Columns	no	yes	yes
Specify Intercolumn Gutter Width	no	no	no
Text Columns	no	no	no
Unmatched Column Widths	no	no	no

Page Formats:			
Align First Text Line from Top	yes	yes	yes
Align Footer from Bottom	no	yes	yes
Align Footer from Left	no	no	yes

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Page Formats (continued):	WordResult	WordStar	WStar-2000
Align Footer from Right	no	no	no
Align Footer from Top	yes	no	yes
Align Header from Left	no	no	yes
Align Header from Right	no	no	no
Align Header from Top	yes	yes	yes
Align Last Text Line from Bottom	yes	yes	yes
Align Last Text Line from Top	yes	no	no
Global Left Margin	yes	no	yes
Global Right Margin	yes	no	yes
Maximum Lines per Page	NA	255	500
Maximum Paper Length	265	NA	500
Maximum Paper Width	265	NA	132
Multiple Page Specifications per Doc	no	yes	yes

Header/Footer:			
Arabic Page Number Format	yes	yes	yes
Automatic Page Number	yes	yes	yes
Can Omit from First Page	yes	yes	yes
Margins Unique from Text	no	no	yes
Multiple Line	no	no	no
Other Page Number Format	no	no	no
Restart or Override Number	yes	yes	yes
Roman page Number Format	no	no	no
Single Line	yes	yes	yes
Tabs in Header/Footer	yes	no	yes
Unique for Left/Right Page	yes	yes	yes

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                          FILE HANDLING
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Document File Strategy:	WordResult	WordStar	WStar-2000
Comments in Document Information	yes	no	no
Comments in Text	no	yes	yes
Comments Usable for Document Search	no	no	no
Document in ASCII Format	no	no	no
Document in Other Format	yes	yes	yes
Edit Document larger than Memory	yes	yes	yes
File Folder/Drawer Metaphor	no	no	no
Full Document in Memory	yes	no	yes
Maximum Document size (kbyte)	170	NA	8192

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Document File Strategy (continued):	WordResult	WordStar	WStar-2000
One Document per File	yes	yes	yes
Page or Other Unit in Memory	no	yes	no

Document Saving:			
Automatic Backup Created at Start	no	yes	yes
Current Document Edits Lost	no	yes	yes
Current Page Edits Lost	no	no	no
Disable Automatic Backup	no	no	no
Disable Automatic Save	no	no	no
Document Automatically Saved on Exit	yes	yes	no
Document Intact	yes	no	no
Document Lost on Reboot	no	no	no
Exit Causes Reminder to Save	no	yes	yes
Exit Document Without Saving	yes	yes	yes
Manually Save During Edit	yes	yes	yes
Specify Timing for Automatic Save	yes	no	no
"Time to Save" Warning	no	no	no

File Import and Export:			
ASCII Export Requires CR/Line	no	no	yes
ASCII Export requires CR/Paragraph	yes	yes	no
ASCII Import requires CR/Line	no	no	no
ASCII Import Requires CR/Paragraph	no	no	yes
Can Merge Document Files	yes	yes	yes
Cannot Import ASCII File	yes	yes	no
Export IBM RFT/DCA	no	no	no
Export Other	no	no	no
Export Wang	no	no	no
Export WordStar	no	yes	yes
Import IBM RFT/DCA	no	no	no
Import Other	no	no	no
Import Wang	no	no	no
Import WordStar	no	yes	yes

==
                      SPECIAL FEATURES
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Spelling Checker:	WordResult	WordStar	WStar-2000
Number of Words in Dictionary	NA	65,000	9,000
Add Word to Dictionary	no	yes	yes
Checks Defined Block	no	no	yes
Checks Entire Document	no	yes	yes
Checks Multiple Documents	no	no	no
Checks Single Word	no	no	yes
Document User Dictionary	no	yes	no
General User Dictionary	no	yes	yes
Ignore Misspellings	no	yes	yes
Manual Replacement	no	yes	yes
Mark Misspellings in Text	no	no	no
Misspellings Shown Alphabetically	no	no	no
Misspellings Shown in Context	no	yes	yes
Quit and Keep Corrections	no	yes	yes
Quit and Lose Corrections	no	yes	yes
Special-Purpose User Dictionary	no	no	no
Speller Presents Best Guesses	no	yes	yes

Foreign Language Support:			
Arabic	no	no	no
British English	no	no	no
Danish	yes	no	no
Dutch	yes	no	no
French	no	no	no
French-Canadian	no	no	no
Finnish	yes	no	no
German	yes	no	no
Icelandic	no	no	no
Italian	yes	no	no
Japanese	no	no	no
Norwegian	yes	no	no
Portuguese	no	no	no
Spanish	yes	no	no
Swedish	yes	no	no
Swiss	no	no	no

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Other Features:	WordResult	WordStar	WStar-2000
Abbreviate Glossary (Text Macros)	no	no	yes
Algorithm-based Hyphenation	yes	yes	yes
Alternate Units of Measure	no	no	no
Automatic Index Generation	no	yes	yes
Automatic T. of C. Generation	no	yes	yes
Custom Footnote Formats	no	no	yes
Customize Color Screen	yes	yes	yes
Customize Keyboard	yes	yes	yes
Date Variable	yes	no	yes
Dictionary-based Hyphenation	no	yes	no
Footnotes at End of Document	no	no	yes
Footnotes on Same Page	no	no	no
Footnotes Spill to Next Page	no	no	no
Graphics in Text	yes	no	no
Keyboard Macros	yes	no	yes
Mail Merge	yes	yes	yes
Mail Merge Using Database	yes	yes	yes
Math Works in Tables Only	no	no	no
Movement of Numbers and Formulas	no	no	yes
Outline Generator	no	no	no
Scientific Notation Support	no	no	no
Semiautomatic Hyphenation	no	yes	yes
Simple Math (Calculator)	no	no	yes
Style Sheets or Named Formats	no	yes	yes
Telecommunications	no	no	yes
Thesaurus	no	no	no
Time Variable	yes	no	yes

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DOS Facilitieis:	WordResult	WordStar	WStar-2000
Access File from Another Directory	yes	no	yes
Access File from Another Disk	yes	yes	yes
Change Default Directory	no	no	yes
Change Default Disk	no	yes	yes
Document or Other Directory Access	no	yes	yes
File Directory Is Edit Menu	yes	no	yes
Files Always in Same Directory	no	yes	no
Files Always on Same Disk	no	no	no

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===============================================================================
                             PRINTER SUPPORT
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	WordResult	WordStar	WStar-2000
Number of Printers Supported	120	26	117
Automatic Envelope Format/Print	no	no	no
Can Insert Printer Codes	no	no	no
Can Modify/Create Printer Control	yes	yes	no
Chain Documents for Printing	yes	yes	yes
Edit Other Document During Printing	no	yes	yes
Edit Same Document During Printing	no	yes	yes
Offset for Paper or Pitch Difference	no	yes	yes
Pause to Change Print Wheel	yes	yes	yes
Pause to Insert Single Sheet	no	no	yes
Queue Documents for Printing	no	no	yes

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                            SOFTWARE INFORMATION
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	WordResult	WordStar	WStar-2000
Version	2.0	4.0	3.00
List Price	$295.00	$395.00	$595.00
RAM Required	256	320	512
Minimum DOS Needed	1.1	3.3	2.0
Drive(s) Required	2	2	2
Number of Listed Features	132	153	185
Classification by PC Magazine[11]	Corporate	Professional	Corporate

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Parent Company:		
WORD RESULT	WORDSTAR PROFESSIONAL	WORDSTAR 2000
Handic Software AB	Micropro International	Micropro International
400 Paterson Plank	Corp.	Corp.
Carlstat, NJ 07072	33 San Pable Avenue	33 San Pable Avenue
	San Rafael, CA 94903	San Rafael, CA 94903

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[11]Ibid.

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                  TEXT ENTRY AND EDITING
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Typing and Editing:	XyWrite III Plus	Sum "yes"
Background Auto Insert Reformat	no	3
Constant Auto Insert Reformat	yes	12
Constant Insert with Man Reformat	no	1
Drop-down Insert, Auto Reformat	no	14
Either Is Default	no	10
Insert Is Default	yes	14
Overstrike Is Default	no	5
Toggle Insert/Overstrike	yes	28
Typing Format Continues Unit Changed	yes	33

Deletion Formats:		
Beginning of Document to Cursor	no	3
Beginning of Line to Cursor	no	8
Beginning of Page to Cursor	no	1
Beginning of Paragraph to Cursor	no	2
Beginning of Sentence to Cursor	no	2
Beginning of Word to Cursor	no	2
Character	no	31
Cursor to End of Document	no	7
Cursor to End of Line	yes	18
Cursor to End of Page	no	2
Cursor to End of Paragraph	no	5
Cursor to End of Sentence	no	6
Cursor to End of Word	no	16
Entire Document	no	7
Entire Line	yes	19
Entire Page	no	3
Entire Paragraph	no	6
Entire Sentence	no	6
Entire Word	yes	12

Cursor Movement:		
Cursor Keys with Alt/Ctrl/Shift	yes	30
Cursor Keys with Cursor Mode	yes	19
Jump Cursor to Character	yes	11
Jump Cursor to Line	yes	14
Jump Cursor to Paragraph	yes	20
Jump Cursor to Place Marker	no	19
Mouse	no	5

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Cursor Movement (continued):	XyWrite III Plus	Sum "yes"
Move to Begin/End Document	yes	27
Move to Begin/End Line	yes	31
Move to Begin/End Page	yes	14
Move to Begin/End Paragraph	no	7
Move to Begin/End Screen	yes	29
Move to Begin/End Sentence	no	9
Move to Next/Previous Character	yes	33
Move to Next/Previous Line	yes	33
Move to Next/Previous Page	yes	15
Move to Next/Previous Paragraph	no	11
Move to Next/Previous Screen	yes	31
Move to Next/Previous Sentence	no	11
Move to Next/Previous Word	yes	31
Scroll Screen Down	yes	32
Scroll Screen Left	no	24
Scroll Screen Right	no	24
Scroll Screen Up	yes	30
Special Keys (e.g., Crtl + Alpha)	no	1

Character Features:		
Alter Case	yes	13
Hard Hyphens	yes	24
Hard Spaces	no	30
Soft Hyphens	yes	25

Block Editing Tools:		
Arbitrary (Begin/End)	yes	31
Automatic Reformat as Block Insert	yes	24
Begin of Document to Cursor	no	8
Block Highlighted	yes	25
Block Unmarked	no	2
Character	yes	7
Copy	yes	33
Copy/Delete to Disk File	yes	26
Copy/Delete to Hold Area	yes	15
Copy/Delete to Text Macros	yes	10
Copy/Move to Alternate Window	yes	15
Copy/Move to Footnote	yes	13
Copy/Move to Header/Footer	yes	17
Cursor to End of Document	yes	10
Delete	yes	33

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Block Editing Tools (continued):	XyWrite III Plus	Sum "yes"
Entire Document	yes	6
Format Block Characters	yes	11
Format Block Page	no	4
Format Block Paragraph	no	6
Format Block Tabs	no	3
Line	yes	14
Manual Reformat as Block Insert	no	9
Marked by Beg/End Character	no	6
Move	yes	32
Page	no	6
Paragraph	yes	11
Sentence	yes	10
Swap	no	1
Vertical Block or Column	yes	11
Word	yes	11
Search and Replace:		
Any String	yes	34
Backward	yes	17
Case Insensitive	yes	22
Case Sensitive	yes	28
Forward	yes	33
Preserve Case on Replace	no	15
Replace Format Codes	yes	24
Replace Wildcards	yes	17
Replace with Verify	yes	33
Search for Format Codes	yes	24
Search for Wildcards	no	10
Whole Word	no	24
Undo Utility:		
Refresh Page or Other Unit	no	3
Rotating (Undoes Previous Undo)	no	2
Undo Not Available	no	8
Undoes Last Delete	yes	19
Undoes Last "Edit Action"	no	1

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=================================================================
                    EDITING SCREEN DISPLAYS
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Text Display:	XyWrite III Plus	Sum "yes"
Automatic Word Wrap	yes	34
Can Disable Word Wrap	no	15
Full Justification On-screen	no	17
Maximum Text Characters (Horizontal)	80	
Maximum Text Lines (Vertical)	22	
Snake Text Columns On-screen	no	4
	no	4
Nontext Display:		
Cursor Character Column	yes	27
Cursor Line Number	yes	28
Cursor Page Number	yes	22
Document File Name	yes	24
Document File Directory	no	7
Document File Disk	yes	13
Ruler Line Constant	no	14
Ruler Line Optional	yes	13

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             FORMATTING FEATURES FOR FINAL TEXT
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Character Formats:	XyWrite III Plus	Sum "yes"
Bold	yes	33
Character Translate Table for Print	yes	14
Combination Formats	no	32
Full IBM Character Set	no	7
Italic	no	21
Pitch Change Adjusts Margins	no	9
Print Wheel or Font Specification	yes	28
Proportional Spacing	no	21
Specify Strike-through Character	yes	16
Standard ASCII Character Set	yes	27
Strike-through	yes	28
Subscript	yes	33
Superscript	yes	33
Underlined	yes	33
Variable Monospace Pitch	yes	31

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Line Spacing:	XyWrite III Plus	Sum "yes"
Fractional Lines per Inch	yes	29
Keep Paragraph with Next Paragraph	yes	11
Keep Paragraph with Prev. Paragraph	yes	10
Range in Lines per Inch	1-9	
Orphan Control	yes	26
Specify Spacing After Paragraph	yes	6
Specify Spacing Before Paragraph	yes	5
Widow Control	yes	21

Margins:		
Automatic Indent	yes	20
Automatic Outdent	yes	15
Left Lower Limit	0	
Right Upper Limit	255	

Tabulation Format:		
Center Tabs	yes	21
Decimal Tabs	yes	11
Left Tabs	yes	33
Right Tabs	yes	17
Specify Decimal Tab Character	no	15
Specify Tab Fill Character	no	8

Paragraph Formats:		
Center Justified	yes	17
Fully Justified/Microspaces	yes	28
Fully Justified/Normal Spaces	yes	31
Left Justified	yes	34
Right Justified	yes	13

Multiple Columns:		
Maximum Number of Columns per Page	23	10
Numeric Columns	yes	22
Specify Intercolumn Gutter Width	no	11
Text Columns	no	14
Unmatched Column Widths	yes	16

Page Formats:		
Align First Text Line from Top	yes	33
Align Footer from Bottom	no	17
Align Footer from Left	yes	22

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Page Formats:	XyWrite III Plus	Sum "yes"
Align Footer from Right	yes	18
Align Footer from Top	no	14
Align Header from Left	no	22
Align Header from Right	no	19
Align Header from Top	yes	29
Align Last Text Line from Bottom	yes	20
Align Last Text Line from Top	no	15
Global Left Margin	no	31
Global Right Margin	no	25
Maximum Lines per Page	255	
Maximum Paper Length	NA	
Maximum Paper Width	NA	
Multiple Page Specifications per Doc	yes	27

Header/Footer:		
Arabic Page Number Format	yes	34
Automatic Page Number	yes	34
Can Omit from First Page	yes	30
Margins Unique from Text	yes	6
Multiple Line	no	3
Other Page Number Format	no	3
Restart or Override Number	yes	31
Roman page Number Format	no	5
Single Line	yes	31
Tabs in Header/Footer	no	21
Unique for Left/Right Page	yes	28

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                              FILE HANDLING
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Document File Strategy:	XyWrite III Plus	Sum "yes"
Comments in Document Information	no	10
Comments in Text	yes	22
Comments Usable for Document Search	no	7
Document in ASCII Format	yes	15
Document in Other Format	no	19
Edit Document larger than Memory	yes	23
File Folder/Drawer Metaphor	no	1
Full Document in Memory	yes	21
Maximum Document size (kbyte)	NA	

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Document File Strategy (continued): XyWrite III Plus | Sum "yes"

	XyWrite III Plus	Sum "yes"
One Document per File	no	28
Page or Other Unit in Memory	no	8

Document Saving:

Automatic Backup Created at Start	yes	19
Current Document Edits Lost	yes	28
Current Page Edits Lost	no	3
Disable Automatic Backup	yes	11
Disable Automatic Save	no	4
Document Automatically Saved on Exit	no	12
Document Intact	no	6
Document Lost on Reboot	no	2
Exit Causes Reminder to Save	yes	25
Exit Document Without Saving	yes	29
Manually Save During Edit	yes	28
Specify Timing for Automatic Save	no	8
"Time to Save" Warning	no	4

File Import and Export:

ASCII Export Requires CR/Line	yes	26
ASCII Export requires CR/Paragraph	no	4
ASCII Import requires CR/Line	no	14
ASCII Import Requires CR/Paragraph	yes	7
Can Merge Document Files	yes	31
Cannot Import ASCII File	no	1
Export IBM RFT/DCA	no	6
Export Other	no	5
Export Wang	no	1
Export WordStar	no	10
Import IBM RFT/DCA	no	7
Import Other	no	6
Import Wang	no	2
Import WordStar	no	14

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                          SPECIAL FEATURES
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Spelling Checker:

	XyWrite III Plus	Sum "yes"
Number of Words in Dictionary	NA	
Add Word to Dictionary	no	25
Checks Defined Block	no	6
Checks Entire Document	no	26
Checks Multiple Documents	no	2
Checks Single Word	no	8
Document User Dictionary	no	12
General User Dictionary	no	25
Ignore Misspellings	no	26
Manual Replacement	no	23
Mark Misspellings in Text	no	11
Misspellings Shown Alphabetically	no	3
Misspellings Shown in Context	no	23
Quit and Keep Corrections	no	19
Quit and Lose Corrections	no	9
Special-Purpose User Dictionary	no	13
Speller Presents Best Guesses	no	16

Foreign Language Support: 16

Arabic	no	
British English	yes	
Danish	no	
Dutch	yes	
French	yes	
French-Canadian	no	
Finnish	no	
German	yes	
Icelandic	no	
Italian	yes	
Japanese	no	
Norwegian	yes	
Portuguese	no	
Spanish	yes	
Swedish	no	
Swiss	no	

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Other Features:	XyWrite III Plus	Sum "yes"
Abbreviate Glossary (Text Macros)	yes	20
Algorithm-based Hyphenation	no	9
Alternate Units of Measure	no	2
Automatic Index Generation	yes	14
Automatic T. of C. Generation	yes	15
Custom Footnote Formats	yes	13
Customize Color Screen	yes	23
Customize Keyboard	yes	14
Date Variable	yes	13
Dictionary-based Hyphenation	no	4
Footnotes at End of Document	yes	13
Footnotes on Same Page	yes	17
Footnotes Spill to Next Page	yes	11
Graphics in Text	yes	14
Keyboard Macros	yes	20
Mail Merge	yes	28
Mail Merge Using Database	no	19
Math Works in Tables Only	yes	8
Movement of Numbers and Formulas	yes	9
Outline Generator	no	4
Scientific Notation Support	yes	8
Semiautomatic Hyphenation	yes	9
Simple Math (Calculator)	yes	7
Style Sheets or Named Formats	no	13
Telecommunications	no	3
Thesaurus	no	3
Time Variable	yes	9

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DOS Facilities:	XyWrite III Plus	Sum "yes"
Access File from Another Directory	no	19
Access File from Another Disk	yes	31
Change Default Directory	yes	21
Change Default Disk	yes	31
Document or Other Directory Access	yes	33
File Directory Is Edit Menu	yes	20
Files Always in Same Directory	no	11
Files Always on Same Disk	no	2

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PRINTER SUPPORT

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	XyWrite III Plus	Sum "yes"
Number of Printers Supported	71	
Automatic Envelope Format/Print	no	10
Can Insert Printer Codes	yes	22
Can Modify/Create Printer Control	yes	22
Chain Documents for Printing	yes	25
Edit Other Document During Printing	yes	16
Edit Same Document During Printing	yes	10
Offset for Paper or Pitch Difference	yes	22
Pause to Change Print Wheel	yes	27
Pause to Insert Single Sheet	yes	32
Queue Documents for Printing	no	17

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SOFTWARE INFORMATION

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	XyWrite III Plus
Version	3.52
List Price	$445.00
RAM Required	384
Minimum DOS Needed	2.0
Drive(s) Required	2
Number of Listed Features	145
Classified by PC Magazine[12]	Professional

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Parent Company:
        XyWrite III Plus

        XYQuest Inc.
             44 Manning Rd.
        Billerica, MA 01821

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[12]Ibid.

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