



Samna Corp Word II Word Processing Package

■ PROFILE

Function • full-screen word processor.

Computers/Operating Systems Supported • IBM PC, IBM PC/XT; DEC Rainbow; TI Professional/PC-DOS 1.1 and 2.0, MS-DOS 1.1 and 2.0.

Configuration • 256K bytes of memory, 2 diskette drives; graphics board (for zoom function only).

Current Version/Version Reviewed • Version 1.1/1.1 Evaluation Copy.

First Delivery • September 1982.

Number of Installations • approximately 3,000.

Comparable Products • MicroPro WordStar, Satellite Software WordPerfect, Metasoft Benchmark Word Processor.

Optional Associated Software • none.

Price • \$450.

Vendor • Samna Corporation; 2700 NE Expressway, Suite C-1200, Atlanta, GA 30345 • 800-241-2065, 404-321-5006.

Canada • currently no distributors in Canada.

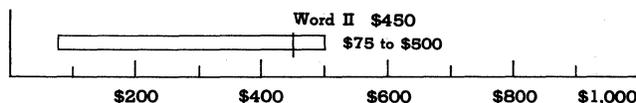
■ ANALYSIS

Since word processors have been around a long time, suppliers of new products are often moved to explain why a user should have waited through all the prior years for this particular product to appear on the scene. Samna says that Word II was designed to provide word processing to those who do not know computers, and presumably do not intend to learn much more about them. It is undeniably easy to learn, but everything has a price.

Some features of the product are outstanding in their balance between full functionality and ease of use. The header and footer features and mail merge capabilities are implemented in a way which makes their use by entry-level personnel much easier than average, and this can be a deciding factor where an application requires such features.

There are some unusual aspects to Word II in its use of keys and in its "you don't have to know computers" approach. Perhaps there are users who will never do anything with their computers but word process, and whose personnel will never acquire even a small amount of computer literacy in the process. We rather doubt it. For

PURCHASE PRICE RANGE Software Price Range



SAMNA CORP WORD II PRICING • open bar shows the typical range of prices for **WORD PROCESSOR** software used in a corporate environment • the vertical line within the bar graph indicates the price of **Samna II**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10	
ENVIRONMENT	██████████					4.6					
DOCUMENTATION	██████████						6.8				
FUNCTIONALITY	██████████							7.8			
EASE OF USE	██████████					5.8					
SUPPORT	██████████					6.2					
SYSTEM INTERFACE	██████████					5.6					
VENDOR EXPERIENCE	██████████			3.0							

*For an explanation of rating criteria, please refer to the Word Processor Features section in the Software Evaluation (805) report. The Overall Package Average is 5.7.

those users with some understanding of computers, or with the intention of acquiring them, Word II's rejection of familiar terms and concepts can be a decided problem.

With other products filling both the complex and simple ends of the spectrum, Samna Word II falls into an ambiguous void in between. In an effort to be both easy-to-use and powerful, it is almost impossible to make the right accommodations all of the time, and Word II generally errs on the side of ease of use. This can lead an organization to grow into it quickly, but grow out just as quickly.

Strengths

The product's forte is that command parameters need not be memorized. If they are not known, or mis-keyed, a menu of all available options appears on the screen automatically.

Headers and footers are implemented in a manner that is very easy for the novice to understand and use, as are features to inhibit printing, overstrike, and pitch change. This can give users with little computer expertise access to some of the more trendy features of word processors which are usually reserved for the users of more complex products.

The merge function is one of the easiest of its kind. It provides more than the basic features in a manner that is not the least bit challenging to use. Again, this favors the user who has little experience with computers and who may not use the merge/print facility often enough to become an expert user.

Limitations

The copy protection scheme and lack of a fully automatic procedure to produce workable disks requires that someone with some experience and considerable confidence install the product.



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The unusual user interface makes it very difficult to go back and forth between other products. The stick-on key labels further aggravate the situation because they indicate the function of the word processor program. Users who occasionally word process might be expected to be the ideal target for Word II based on its design, but if these users alternate between word processing and other applications, it's difficult to see how they could avoid a frustrating session learning the rules over again each time Word II was used.

Hyphen checking must be done manually and only indicates how much of a word will fit on the previous line, not where it might be appropriate to place the hyphen.



■ HANDS-ON EVALUATION

The product's diskette-based tutorial provided an ease of learning and training approach that may be important in some corporate environments. Most of the functions needed by many corporations, except spelling checking, were accommodated. While first-time users had little difficulty learning Word II, it was not as much an "ideal for beginners" product as we had expected. Staff members with experience with other products found Word II cumbersome in ways they had not anticipated.

Depending upon the application and the type of people involved, Word II may or may not be suitable. We found Samna Word II neither exceptionally easy to learn and use, nor unusually powerful. For basic word processing without all the bells and whistles, we still prefer a full-screen editor that comes equipped with excellent documentation, uncluttered screens, and a clearly written tutorial. For a full-feature product, we feel that an integral spelling checker is required.

□ User Interface

Samna Word II, while providing many helpful features, does so in a manner that is intuitively inconsistent with most other products. Access to Help menus and function key definitions are contrary to what one would expect.

Menus: A command must first be selected before Help related to that command can be requested. In most cases all available command parameters are listed.

Control characters: Not used.

Function/special keys: Command selections are made via function keys, with parameters selected from a menu. Stick-on key labels are provided.

Command language: None.

Positive feedback: Inappropriate commands produce message indicating such. Invalid command parameters produce a list of acceptable choices. This was a feature which users found particularly helpful.

Status display: Indication of cursor column location, page number, file name, margin settings, tab settings (textual or numeric), and active status of bold, caps, and underline modes is present. Margins and tab settings are indicated by shaded areas on the sides of the screen. The status line also contains shadow indicating cursor column

position—helpful when cursor is near the bottom of the screen.

Help facilities: The top of the screen provides help in completing commands; it may be eliminated for larger text display.

□ Environment

The product requires a fairly large system, with a minimum of 256K bytes of memory and almost all of a double-sided system disk. We were taken aback by the configuration requirements, since simple personal editor programs are much smaller and full-feature word processors are certainly no larger.

The copy protection measures provide for only 2 usable copies of the program. Once installed, the documentation states that the program cannot be copied, meaning that it stays wherever it is first put, floppy or hard disk. If one needs to reformat the hard disk—too bad. Printer changes are allowed.

Because of the copy-protection scheme our technical people were very careful in installing the product. The original diskettes that are supplied are not operational. First a blank disk must be formatted using a DOS disk. Instructions, but no utility, are provided to automate this process. Then files must be copied from a total of 3 disks to the formatted disk. Notice is given that only 2 usable disks, which cannot be copied, can be produced with this process.

The printer we use was not listed on the selection menu, so we installed it as a universal printer as described in the documentation. Our printer was guilty of something for which the product chose not to forgive and informed us that there was something wrong with our printer. When a printer listed on the menu was used, there were no problems.

□ Documentation

A standard three-ring binder and slip case are supplied.

The only tutorial supplied is on a diskette. It is structured such that it can be used in several different ways. Broad lesson categories may be selected such as orientation, basic typing, footnotes, outlines, cut and paste, etc, and the program will select only those lessons that apply; or a specific lesson number may be chosen by referring to the lesson number chart. The chart is listed in numerical rather than alphabetical order. We found footnotes, lesson number 50, five up from the bottom of the second page of the list (there are 54 lesson numbers). You may stop at the end of any exercise and exit from the tutorial, and start at the same spot the next time.

Each function is covered in a 4-step process. The function is explained, the steps required to perform the function are listed, an on-screen demonstration is given and then repeated by the student. After each exercise one may go on, repeat the whole exercise, practice the function again, or stop and save the place. When proceeding to the next exercise, the screen goes blank, a message appears commanding that one "Watch the Screen!" and all too frequently 20 seconds or more have passed before the



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information appeared. We found this to be a major distraction to the overall learning process.

Two of our staff managed to lock up the system by moving the cursor to the top of the screen. No error message was displayed and the only remedy was to re-boot.

The back of the card depicting Samna Word's keyboard contains a command reference. Functions are listed alphabetically with the key or keys necessary to invoke the function. The keyboard guide is in the form of permanent stick-on labels to be applied to the keytops, instead of the customary removable template. Since it is unlikely that any other program will use the same key definitions, difficulty and confusion when using another program is bound to occur. The keycap label concept is also unworkable if you happen to have 2 programs that use it, unless you buy separate keyboards.

An interesting indexing method called "Visual Guide" is supplied to quickly locate a desired topic from its pictorial representation. Several pages are divided vertically into 3 sections. The first is an alphabetical listing of functions, the middle section has a graphic representation associated with the function, and the final one lists the appropriate page number in the reference section. In some cases the graphic representations are very clear and easy to understand. Backup, for instance, shows a systems unit with an arrow pointing from the right to the left drive. Bold, on the other hand, shows a postage stamp-sized printed page with, if one looks very carefully, several words in bold-faced print—a great concept betrayed by poor execution.

The normal file-naming and backup suggestions, along with diskette care, etc, are provided.

Common difficulties are listed in a troubleshooting section along with their solutions. Problems like "Bold doesn't look any different on my monitor" are common. The suggested solution is to adjust the brightness and contrast controls, describing their physical location on the IBM monitor. This is a nice touch likely to save much grief and aggravation. We are accustomed to seeing this sort of thing in hardware documentation, but seldom with software. To further enhance the "overcoming the problem" quality of the product, an error message listing provides an explanation of what causes each message to appear and what one should do to correct the situation.

Specific information is shown for each of the 16 supported printers. Printer switch settings and comments as to how one can expect the printer to behave in terms of functions supported are included. Epson, IBM, NEC, Qume, Diablo, DEC, Daisywriter, Okidata, C. Itoh, TI, and universal-type printers are listed.

The glossary contains an alphabetical listing of terms specifically related to the operation of the product, with a one or 2 sentence description of what each is all about.

The index of functions is very useful. It not only contains an alphabetical listing of functions, but also a cross-reference to other similar commands. Append, for instance, also includes references to Copy and Move.

The command reference section lists functions

alphabetically. Each function is described, related functions for further reference are listed, and a step-by-step description of how to perform the function is given. The how-to is repeated for each situation to which it applies. As an example, for centering, there are four examples of how to center: 1) when centering mode is on; 2) when centering mode is off; 3) text that already has been typed; 4) how to un-center text already typed. We found this to be a fast and efficient way to clearly understand what the proper procedure was for any given situation.

Sample printed pages and screen photographs are provided. Both suffer from varying degrees of excessive reduction in being transferred to the printed page. For instance, the example depicting a letter with double underscores requires one to take on faith that the underscores are in fact double (or acquire a magnifying glass).

Many of the command descriptions span 2 to 4 pages. The command is only listed on the first of those pages making it unusually difficult to quickly flip through and find a specific command without using the index.

The entire manual seems to be written to prove that it's possible to describe the operation of a computer program without admitting that it is being run on a computer. The lack of reference to technical terms or concepts (called computerese in the manual) can make the material more acceptable to first-time users, but tended to make the developing user increasingly uncomfortable. In particular, lack of internal references to the keys by their actual names hindered users who learned the names of the keys by operating other products on the system. For example, "save and delete" is referred to rather than "F1."

□ **Functionality**

Our clerical staff expects word processing software to either have more powerful features or be easier to use, and tacitly hopes for both. Samna Word II is somewhere in between. The product does all the things one would expect a word processor to do, and generally does them well. It does, however, lack some of the advanced features which a sophisticated application might require.

Installation of the product is partially automatic but still required formatting and copying, plus some knowledge of the system configuration. Because of the copy protection scheme, we found that only those who felt confident of their abilities wanted to perform it.

Training proved to be more difficult than we had hoped. The tutorial diskette allows for a selection of lessons either individually from a printed list, or from general categories. The functioning of the tutorial itself proved to be difficult, approaching impossible. The pace of the rudimentary subjects such as cursor and cursor control was moronically simple, certainly far below the intelligence of our staff. Frequently, the preprogrammed delay time between lessons was in excess of twenty seconds—longer than it took to perform the examples.

In operation, the product performed better than the tutorial. The screen image is representative of how the



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print copy will appear. Special markers are normally hidden, but may easily be displayed when needed for editing. Margins are represented as shaded areas on both sides of the text area. A solid triangle clearly indicates the location of all hard carriage returns. Status information is supplied for page number, file name, tab and margin settings, and active status of print enhancement functions such as bold, justify, etc. A shadow cursor moves across the top of the display for reference when typing at the bottom of the screen. For some reason there is no indication of the current line number.

Block functions such as Move, Copy, Delete, etc, use a shading technique and a 2 keystroke command sequence. The cursor is first placed at either the beginning or end of the block. The appropriate command key is then pressed. As the cursor is moved to the other end of the block the text within the block is indicated as shaded. In this manner the operator can clearly see where the block begins and ends. The command may be cancelled prior to the final keystroke.

Headers and footers are supported and the Help process prompts the user through all of the necessary steps. Default setting values are provided. They can be set to start printing on the first, second, or last page. Page numbers may also be included. Headers and footers may be changed at any specific location within the text and can alternate on even and odd pages.

Two files may be displayed on the screen simultaneously, with the second file selected placed on the upper half of the screen. The status line reflects the name of the file where the cursor is located. Both windows may be open to the same file, or 2 different files may be displayed. Because the top window is used for the entry of header and footer text, you cannot enter headers/footers while 2 windows are in use. While this is a primitive form of the window function, it is still more than many other products offer.

The mailing list feature is both a strength and weakness of the product. A special definition form is provided for the user to fill in with the data for the list, and this data format that is created may be customized to suit the application. Lists may be created and merged with standard documents for mailing labels, form letters, etc. Lists are automatically sorted on the first field, which may be alphabetic or numeric. Since the entry of list data is integral with the word processor, there is less user disconnection when making the transition from list development to mailing list letter printing. Complex list functions, involving large files and selected mailings, are not easily supported with the integral list function and there is no reference to use of outside database products as list sources.

Strings of up to and including 30 characters may be searched for. The search operates based on a set of options, with default options listed. These may be changed by tabbing the cursor to the desired position and making the change. Listed search options are: Generic (upper and/or lower case), Exact (as typed), Whole Word (only if found as a whole word), Any Occurrence (string can be part of another word), Replace, and Forward or Backward

from cursor position.

Ease of Use

Instructions are provided for installation on a hard disk, along with a note about not being able to copy the program once it is on the hard disk. We can only guess at the kinds of difficulties that potentially could result from having a valuable program on a hard disk and not being able to relocate it—save the original disk somewhere nearby!

Help is available via the Esc key, but specific help is obtained by first pressing the function key representing the subject one needs help with and then pressing the help key. We found this to be in opposition to most other Help systems that begin with help prompting for the topic one desires help with. A step-by-step guide through the function is available and activates automatically if an incorrect command is given. An additional level of Help explains the function. Three levels of Help are available. The first is a short question to prompt for the next keystroke. The second level is a step-by-step guide through the function, and is automatically activated if an incorrect command parameter is given. Level three is an explanation of the function.

A list for merging with standard repetitive documents is easily created. A definition file is first created by placing the cursor at the desired position of the first field, typing the name of the field, and touching the Mark, Tab, and Return keys. The process is repeated for each field. When done, names are entered with the list maintenance command. Entries are automatically sorted according to the first field, which can be either alphabetic or numeric. To define where information will be merged into a document, the cursor is placed at the desired location, the Mark key and "I" for insert are pressed, followed by the field name and Return.

Our staff who were at all accustomed to the commonly assigned function key definitions required a little time to adjust to Samna Word II. Help, which many vendors place at F1, is at Esc. Cancel is either Alt or PrtSc, choices we were not happy with since the Alt key usually does nothing by itself, and PrtSc for the obvious reason. The stick-on key labels help somewhat during the use of the product, but caused confusion when staff members switched to another program.

The deletion function is somewhat unusual. Delete is a 2-keystroke process. The first time the Del key is pressed, the cursor position is shaded. You then can move the cursor, shading or unshading additional text. The second time the Del key is pressed, the entire shaded area is deleted. The command may be cancelled at any point before the Del key is pressed the second time.

The documentation refers to the command keys and functions by name rather than by key identity—not an unusual feature but one which causes some problems with Word II when the inevitable time comes when the keycap labels fall off. Our users could not apply the labels at all because others were already in use for a second application, so we made up a chart for the wall above the system which showed the key locations. It worked, but



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there should have been a better way.

Support

The vendor will provide all modifications and updates to the software and user documentation, advice by telephone to assist in the use of the product; quarterly newsletter is provided at no charge for a period of 30 days. These support services can be continued under a separate support contract at \$100 per year which includes 10 calls or 1 hour, whichever comes first. Additional support is at the rate of \$72 per hour minus 25%, with a \$15 per call minimum charge. The charge for updates for those without a contract is \$50.

System Interface

File conversion is provided both to and from ASCII files. This permits the use of a separate spelling checker and a means to interface to database and spreadsheet programs.

Vendor Experience

The vendor is in the first year of business and Samna Word II is the first product.

■ DETAILED PRODUCT DESCRIPTION

Terms & Support

Terms • Samna Word II is available on a purchase license basis from computer and software retailers.

Support • product support is free for 30 days; separate support contract for \$100 per year is available • for users without a contract the update charge is \$50.

Component Summary

Two program diskettes, one printer installation diskette, and one

LCNS: license fee.

tutorial diskette are provided:

\$450 lcons

Computers & Operating Systems Supported

Samna Word II runs on the IBM PC and PC/XT with PC-DOS 1.1 or 2.0. It runs on the DEC Rainbow and TI Professional with MS-DOS 1.1 or 2.0.

Minimum Operating Requirements

The package requires 256K bytes of memory and 2 diskette drives for operation. If the zoom function is wanted a graphics board is required.

Features

Display Type • full screen; format commands are hidden; hard carriage return marks are displayed.

Command Structure • function keys used to initiate commands with menus listing parameters available if necessary.

Error Recovery • no special commands for intermediate saves of documents are provided, nor is a provision to abandon an edit without a save without exiting the program; unacceptable command parameter causes error message and/or list of acceptable choices.

Block Operations • all use cut and paste with shading technique to define the block; the normal move/copy/delete operations are supported.

Merge/Print • document and form letter/list merge facilities are provided.

Spelling Check/Aid • not provided.

Multiple Window/Multiple Document Support • screen divided horizontally enabling second document to be displayed; each document can be edited independently.

Headers & Footers • may be set to print on first, second, or last page, alternate on odd and even pages, and may include page numbers.

• END



Satellite Software International WordPerfect Word Processing System

■ PROFILE

Function • letter and document production for reports and documents of nearly any type and form.

Computers/Operating Systems Supported • IBM PC or PC/XT with DOS 2.0.

Configuration • 128K bytes of RAM and a single double-sided diskette drive • the system will support monochrome display, color graphics adapter with color display, or color graphics adapter with monochrome display; most popular printers are supported.

Current Version/Version Reviewed • 3.0/Version 3.0 including spelling checker.

First Delivery • November 1982 for microcomputer market.

Number of Installations • 40,000.

Comparable Products • IBM Easywriter, MicroPro WordStar.

Price • \$495 retail price; Personal version available for \$195.

Vendor • Satellite Software International; 288 West Center Street, Orem, UT 84057 • 801-224-8554.

■ ANALYSIS

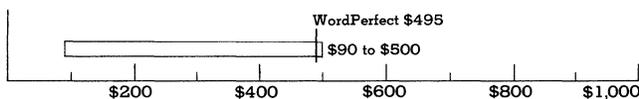
Word processors, since they support the task of COMMUNICATING which is basic to all businesses, probably have the largest number of possible features, forms, and trade-offs of any business computer program. WordPerfect provides a set of somewhat non-traditional choices, and the result is a package which can bring tears of joy or frustration, and often brings both.

Unlike other word processors which have their roots in CP/M word processors or which retain some of the menu and command structures of their vendor's past successes in areas like spreadsheet programs, WordPerfect is a product designed for the IBM PC. It provides a combination of text editor (Satellite Software International, after all, produces an excellent one) and word processor features which simply do not exist in other products. In many cases these features support a level of document productions which would be difficult to achieve in any other way.

The full features of WordPerfect are not achieved without a significant increase in product complexity. Happily, most of this complexity is focused in the area of "expert features" and does not carry over into ordinary editing tasks. The combination of a logical use of PC function and cursor keys and a pair of key templates makes the use of the

PURCHASE PRICE RANGE

Software Price Range



SATELLITE SOFTWARE INTERNATIONAL WORDPERFECT PRICING • open bar shows the typical range of prices for WORD PROCESSING software used in a corporate environment • the vertical line within the bar graph indicates the price of WORDPERFECT, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	████████████████████									
DOCUMENTATION	██████████████████									
FUNCTIONALITY	████████████████████									
EASE OF USE	██████████████████									
SUPPORT	██████████████████									
SYSTEM INTERFACE	██████████████████									
EXPERIENCE OF VENDOR	██████████									

*For an explanation of rating criteria, please refer to the Word Processor Features section in the Software Evaluations (805) report.

product without reference to the manual relatively easy. The manual, however, is significantly improved over the earlier versions and is now quite helpful.

Some users will never be able to properly use WordPerfect without significant support, and some probably not even then. But those who can use it properly will find it capable of almost any task which can be imagined for a word processor.

□ Strengths

From a standpoint of editing/entry functionality, Word Perfect IS nearly perfect. The user has both a "what you see is what you get" form of display and automatic reformatting of text as entered. In addition, special features like temporary margins, extended-option tab stops, columnar text, footnotes, and search and replace are available. But the primary strength of WordPerfect in the keying of data is the ability to define keyboard "macros"—that is, sequences of steps which are set up, given a name, and repeated as needed. Macros can literally write large sections of a document, reducing operator efforts and increasing consistency and productivity.

WordPerfect also lets the user configure it for the display and printer options of the PC. Nearly any form of printer is supported, and the color display user will find that WordPerfect provides color selection options for optimum readability.

Merge functions for the creation of form letters or other combined documents is supported within the basic package rather than as an extra-cost option. SSI provides a database program to expand on the basic list entry capabilities of WordPerfect, but that product is not mentioned in any of the documentation and no examples for its use are provided.

WordPerfect's file structure permits transferring of data from foreign products relatively easy; you can read or write standard DOS-format text files directly, and print-image files can be sent to disk for processing by other programs.



Satellite Software International WordPerfect Word Processing System

□ Limitations

The design, or "style" of WordPerfect is very different from that of most other word processing products. There are many more features, some of which require some care in using. Inexperienced users may find it difficult to learn the product, and during the learning process it is possible to make what can only be described as catastrophic errors. Regular text backup procedures and management control can largely eliminate this problem.

The reformatting of paragraphs or pages into which inserts have been made is done when the cursor moves through the paragraph, so if a change is made and the cursor is moved BACK toward the beginning of the document, the older area is left in an unformatted limbo until someone tries to print it or change it.

Certain text format functions such as setting of margins and tabs cause special control sequences to be inserted in the text. These do not display in normal operation, but their presence can cause inexplicable format problems. Locating and removing these control commands is not a difficult task, but the attempt often causes inexperienced users to create more problems.



■ HANDS-ON EVALUATION

Our technician was all smiles after the installation of the product; it is NOT copy protected and everything worked as the instructions indicated it would. A special set of options allowed the colors to be set for the graphics monitor, making the package so attractive in operation that people stopped on their way through the department to look at it.

The current documentation was also something to smile about. The initial release of the product was accompanied by a manual so bad that it deterred some purchasers from trying the product at all. The new manual is completely reorganized. The installation section, our first concern, covers the task of setting up the system so fully that a reasonably interested "amateur" can do it. We found that systematic training of operators on the features and functions of this product is probably more essential for this product than for anything ever used before. Those who tried to run without it were hopelessly lost, regardless of their former experience. Part of the reason is the feature-richness of the product, and part the non-traditional design. We made everyone start at the beginning and go through every exercise in the manual, which takes about half a day.

Every word processing task we put to WordPerfect was completed without difficulty, even a few which frankly did not belong in the word processor world. On certain types of documents, we were able to increase productivity by almost 35% over a commercial word processor. Our staff was initially sharply polarized on WordPerfect's value; about 60% swore never to use anything else and the remainder threatened to burn the master diskettes. There seemed to be a threshold in learning the product which, if crossed, made you an expert and devout user. Some of the staff never made it, but within a week all the users had become productive with the product and most preferred it to all others.

□ User Interface

WordPerfect uses function keys, cursor and page control keys, and combinations of the Alt key with other keys to invoke commands. The text on the screen is a faithful image of the printed page, and text control functions do not appear in normal edit mode to interfere with the operator's view of the document. Reformatting of paragraphs after changes is exceptionally easy, and the entire user interface is easily learned and relatively immune to confusion.

Menus: Menus are used for the selection of options in the implementation of the more complex commands. Menu selections are made based on sequential numbering of options, with the "0" option representing an escape from the menu without further action. A selection is made by keying a number—no further RETURN or activation key is needed.

Control characters: The Ctrl key is used by WordPerfect in conjunction with certain function keys and several keys on the top row of the data keyboard to invoke system functions or request special formatting. Special control sequences are generated by function key or other command forms for purposes of text and display control, but do not display on the screen in normal mode. An optional "reveal" mode may be used to view these commands.

Function/special keys: Function keys, in normal and shifted mode, define many of the special text format features of WordPerfect. Some function keys are also used in Ctrl- and Alt- mode to invoke special functions/features. The Alt key, in conjunction with the upper row of data keys, invokes system functions. The user may define an Alt-alphabetic key combination to represent a series of text and command actions, called a "keyboard macro." Macros may also be given longer names and invoked by name. A full template of command keys, color coded to indicate the use of Alt- or Ctrl-, is provided.

Command language: Text and commands which themselves do not use the Alt key may be saved in a file and invoked via the pressing of the Alt key in conjunction with any alphabetic character. Files of commands and text can also be given a specific name and invoked by name. These command files can include searches for text, changes in text value, etc.

Positive feedback: Data entered as text will appear on the screen as keyed. Command invocation will generally cause a menu to appear at the bottom of the screen or will replace the text area temporarily. Some commands, such as "underscore" may not result in a display change if the display attribute chosen to represent it is not visible on the type monitor used. Commands with normally destructive scope require confirmation, but since deletion is reversible no confirmation is requested there.

Status display: The 25th line of the screen maintains the current document number (1 or 2 for the multidocument feature), current page, line, and character position. This line is also used for operator prompting and short-form menus.

Help facilities: Depressing the HELP (shift-F3) followed by another command key requests HELP with a command. On-screen help text temporarily replaces document text.



Satellite Software International WordPerfect Word Processing System

The explanations provided are complete and largely eliminate need to reference the manual. A quick-reference card is provided, and a keyboard template is used to identify command keys.

□ Environment

The commercial version of WordPerfect (there is also a "personal" version) requires 128K bytes of RAM and a double-sided diskette. The program can be copied, so we gave each operator a diskette with the operating system and WordPerfect on it for their personal use. The self-loading aspects of the package are significant because the standard IBM DOS operating system diskette will not support the number of files which WordPerfect keeps open at a time. YOU MUST BOOT WORDPERFECT FROM ITS OWN DISK, or copy a special file from that disk to whatever system disk you DO use for booting. That restriction did not prove to be a problem.

The package can be configured for nearly any popular printer and for both the monochrome display or color monitor. The color graphics board is also supported in black-and-white mode, an unusually flexible set of display options. The program can be loaded from or can edit files on hard disk. Form options can be preset for the load, and multiple printers are supported. Since spooling of print jobs with simultaneous editing is provided, you can print and type at the same time.

□ Documentation

Those people who had seen a copy of the earlier documentation on the product were prepared to leave the room during any reviews of the material, but the new version proved to be far superior to the old. Versions beginning with 3.0 come with a newly-developed manual, formatted in a logical manner, and containing a mixture of tutorial and reference material.

The manual is organized according to functional topics such as "typing," "editing," and "printing." However, this causes some of the material to be inaccessible except through the index. For example, the user must decide if the term "temporary margin" is a "typing," "printing," or "editing" feature. The index is adequate for the task, however, and there is a summary command card (which is three fold-overs, and scares inexperienced operators on sight).

Each command section in the manual presents a series of commands in an operational "scenario" context. An example, or exercise, follows to test the action of the feature. The structure makes the manual suitable as a tutorial, though not as easily learned from as a true tutorial. Some users found the lack of a specific reference section structured by command to be a problem, but most were so happy not to be using the older manual that they had no complaints.

□ Functionality

There is not much that cannot be done in WordPerfect. We tried every form of text document and a few hybrid forms which might have been better done with a spreadsheet package, and they all worked. In fact, they worked well. WordPerfect enters, changes, formats, prints, loads, saves, merges, appends, and even adds, subtracts, multiplies, divides, totals, and sub-totals. There are so many things it

can do that operators get worried about what it MIGHT be doing. One typist had a tendency to push particularly critical keys then lean back with a weak "Oh, my!" to get out of the way of flying words, cursors, etc.

The function keys of the PC are used to invoke special commands relating to text formatting or processing. You can set format attributes like tab locations, control print attributes like bold and underscore, search for information, etc. The use of these functions is accompanied by requests for data or special displays of information on the bottom of the screen. In general, the text is NOT replaced by command menus. A template is provided for the function keys. Other functions are handled by the use of the CTL or ALT keys in conjunction with the top row of number and special character keys, for which an extension of the template is provided. These functions are more system-oriented and generally less used; the save and retrieve text functions are located here.

Office correspondence was easily handled with WordPerfect, but the typists had little complaints about the fact that SSI assumes a microspace adjusting printer and does not really support block-structured paragraphs on other types. Attempts to use "justification" to produce block margins both left and right with simple parallel printers ALMOST works, but occasionally leaves letters hanging in the right margin area. WordPerfect's wordwrap process seems to require a lot of hyphenation, something we later learned to control using the "hot-zone" setting. The current version lets you disable hyphenation and to decline to hyphenate a word—something which caused problems in earlier versions.

A spelling checker is available, but its use on floppy disk systems requires a disk swap. If you do have hard disk storage (or don't mind the disk change), the spelling checker is excellent. Not only does it allow corrections on the fly, it lets you look up similar words by "template" in the dictionary. For example, if you misspell the word "activity" you can ask for a display of the "act----" words to find the correct value. As with most spelling checkers, technical or business vocabularies require a significant number of dictionary updates during the start-up period.

The text features like temporary margins produce an extremely professional-looking report with very little effort, and even columnar data can be keyed easily. The text entry functions of word processors, including searching and replacing, are all available and easily used.

The real power of the product, however, was in the ability to define and name sequences of keystrokes—"macros." These sequences can include keystrokes to insert data in the document and commands to format it. One document we keyed had a long list of electronic subassemblies which consisted of a part number beginning with a specific sequence, a location code preceded by the letters "BIN/PICK code" and several other special identifiers. There were only about 12 variable characters in each four-line entry, and our typists traditionally made keying errors in the code structure one described as "alphabet soup." Using WordPerfect, our typist wrote two macros to enter the data. The first filled a "shell" paragraph into the text with a left bracket character inserted at the point where variable data would be keyed. The second searched for a bracket,



Satellite Software International WordPerfect Word Processing System

backspaced over it, and stopped for entry of data. The list could now be keyed in EXACTLY the same form by using the first macro to define the individual entry and the second to search for each field to be added and stop for keying. Macros can be invoked by a single keystroke (ALT and any letter) or by a longer name using an "invoke macro" function. The macros are stored on the program disk so each user can have a unique set, or users can share as desired.

Moving and deleting text uses a buffer area. When data is "cut" from the text, it is placed in a buffer which can be copied back to the text or to another place. Moving is a kind of bundled delete and restore elsewhere. The data in the text buffer remains there until another section is moved, cut, or copied, so you can make multiple insertions. Don't write macros that depend on the contents of the text buffer, however. We did that, and it worked fine until the operator did an unscheduled move of several pages of text, whereupon it copied those several pages into undesirable locations.

Version 3.0 of WordPerfect supports dual-document editing, a kind of either-or window. The block commands such as move and copy can operate between the windows, making it possible to select data from one document and copy it into another. We used this on contract forms, and it proved to be a significant time-saver. It was also useful in preparing responses to customer inquiries; we could select the sections of standard information and pull them together into a single document.

The only problem we had with the operation of the product was an infrequent tendency to accidentally invoke some significant function by hitting the wrong key. It is possible to cancel all the normal internal functions. Nothing like a major deletion can be completed in a single sequence, but MACROS CAN HURT as well as help. A macro function can delete large segments of text at a single keystroke, and the IBM PC keyboard places the ALT key used for macro invocation next to the shift key. We learned never to permit macros with major text modification capability to use the simple ALT-x names, using the WordPerfect "INVOKE MACRO" function instead and assigning a long name.

Ease of Use

Things which are powerful are often also difficult, and there is no question that if you attempt to use all of the features of WordPerfect you will be forced to do some thinking. But this complexity is a necessary part of doing complex things, and most users do not object to it. The UNNECESSARY complication of what should be simple functions IS objectionable, and WordPerfect manages to avoid most of that. An area where it does get a bit complex is in the basic setup and formatting options. We found that creating a special diskette for each application, preset for the options of that application, was a solution. We also used the macro facility to create a series of "setup" macros to set the format at the start of each document; the operator simply runs the "SL" macro to set up a letter.

The data entry and movement functions of the product use the standard keys and do what is expected, so a beginner who learns how to load and save a file can do basic keying with almost no instruction. As commands are needed, they

can be selected from the function key or top-row ALT key template.

The Help function of WordPerfect allows the user to hit the HELP key, followed by the command for which help is needed. The descriptions given on the screen for each command are often better than the manual. You must, of course, know the name of the command you need help with, but this is not difficult in a system which uses keyboard templates to identify commands.

The big complaint with ease of use in our test was the handling of imbedded control and format information. Tab settings, page length, and other characteristics of the document are stored in the text at the point where the change or setting was made, but in an "invisible" form. There is a special function called "reveal functions" which provides a new display of about five lines surrounding the current cursor position and which "decodes" and shows these functions. The problem is that you can delete a function (you are usually warned that you are doing that, but not everyone catches the warning) or add one by accident. We had a version of WordPerfect which was used for special jobs which ran on a 50-line form. This version preset the form length to 50 lines, and at one point our operator wanted to run a draft on conventional letter size stock. She invoked the function to set the page attributes and accidentally selected LEGAL size paper, not noticing the error. When the document did not paginate properly, she went back and AGAIN did the page format, this time doing it right. It still did not work. Repeated attempts to fix the document failed, and finally our technician was called. It turned out that the incorrect format had been inserted at the beginning of the document, and each subsequent correction attempt inserted the correct format BEFORE the incorrect one, which then superseded the correct form. We had TWENTY set format statements at the start of the document, one for each correction attempt. The "reveal functions" command did show this, but some of our users were unable to grasp the concept of these hidden text commands and could not use it. One reason is that only five lines of text are shown at a time in "reveal" mode. You can search for these special sequences, however, and that capability seemed to solve most of the problems. We tried to build a macro to "find tab settings" and go into "reveal mode" to show them, but you cannot end a macro in reveal mode because the keystroke you key to end macro definition is taken as a request to leave it.

The problem with the functions was representative of the experience with WordPerfect. Most of the users were able to grasp the concepts which underlie the design of the product, and those who could were able to apply its features and functions in a way which made them avid fans. Those who could not gain the necessary insights were never comfortable with WordPerfect, made constant and sometimes serious errors, and eventually went to other products.

Support

Dealer support for WordPerfect is reasonably good considering the complexity of the product. Satellite Software (SSI) provides a support hot-line which is an 800 number.

Satellite Software, Inc wants WordPerfect to succeed and



Satellite Software International WordPerfect Word Processing System

will bend over backwards to answer user questions and provide explanations. Their technical support staff obviously believe in the product and communicate that fact in nearly every sentence. Your questions on functions are often answered with preambles like "Of course, the beauty of WordPerfect is that . . ." or "There's a really elegant way to do . . ." It wasn't overdone—just a kind of underlying enthusiasm.

The dealers are authorized to upgrade users to new versions of the product at "no charge to the dealer." Apparently, the dealer may charge the user.

System Interface

Surprisingly, it turned out to be easy to export and import files using the product. A standard text file produced by other products by printing to disk can be processed by WordPerfect, and its macro capabilities make it easy to format foreign documents. You can also direct a WordPerfect file to a DOS text file for use by another system. We found that both these capabilities worked exceptionally well, but the descriptions in the manual on how to handle foreign files consists of two paragraphs and was rather heavy on jargon for the average user. There is a statement in the latest documentation that a PREPARE program can be used for even greater document interchange support, but we could not find the reference to the program in the appendix as indicated. Perseverance pays off, however, and the product worked better with foreign files than any other word processing package.

■ PRODUCT OVERVIEW

Terms & Support

Terms • WordPerfect is available on a purchase license basis from Satellite Software International, through computer dealers, software dealers, and mail-order firms throughout the U.S.

Support • 800-number telephone hot-line; dealers may upgrade users to new versions of the product at no charge to the dealer.

Component Summary

Software elements include WP-WordPerfect files, including configuration options and a series of control files, which must be resident on a specified disk drive during the execution of the program. These elements also include ALTx-files used for macro support,

LCNS: license fee.

defined by the user, and a Spelling Checker which is optional with version 3.0.

WordPerfect:

\$495 lcms

Computers & Operating Systems Supported

WordPerfect runs on the IBM PC or PC/XT with DOS 2.0 operating system.

Minimum Operating Requirements

WordPerfect requires 128K bytes of RAM and a single double-sided diskette drive. The package supports monochrome display, a color graphics adapter with color display, or a color graphics adapter with monochrome display. Most popular printers are supported.

Features

Display Type • generally, WordPerfect uses a full-screen display which represents an image of the printed page; display attributes may be selected to represent printing features such as bold or underscore; format commands, while imbedded in the text, are not generally visible on the screen and do not disturb the visual text; a "reveal" mode may be used to display these format commands.

Display Feature Usage • the user may select display attributes to correspond with special print features, including selection of colors on systems equipped with a color monitor.

Command Structure • most commands are mechanized through the use of the PC function keys or the Alt key in conjunction with another key; the upper row of data keys are used, in conjunction with the Alt key, to represent system functions, while the remainder of Alt-data combinations may be defined by the user.

Error Recovery • no backup file is created automatically, but the system permits periodic saves without loss of editing context; deleted text is held in a buffer and can be recovered in the event of an error.

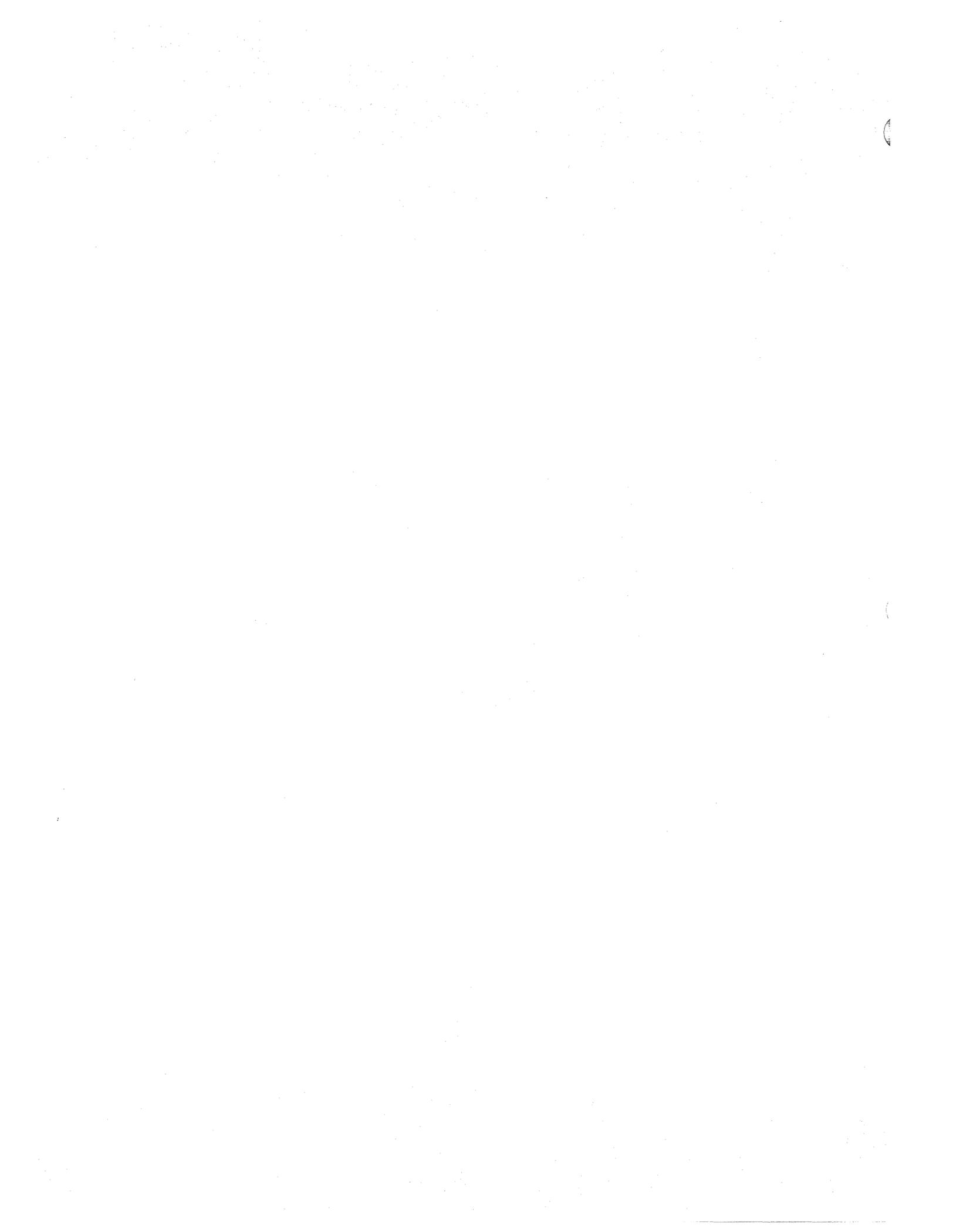
Block Operations • full block support for copy, move, or delete by sentence, paragraph, page, or marked range; when used in conjunction with the extended multidocument feature, text can be moved between documents.

Merge/Print Facilities • full list merge facilities for development of form letters and labels are included at no additional cost.

Spelling Check/Aid • included at no additional cost with the current version of the program.

Multiple Window/Multiple Document Support • two documents may be opened at the same time, and the user may switch from one to the other through use of two keystrokes; data may be moved or copied between documents; multiples copies of the same document may also be held simultaneously.

• END





Select Information Systems Select Word Processing Package

■ PROFILE

Function • word processor.

Computers/Operating Systems Supported • IBM Personal Computer, IBM PC/XT, Compaq, Chameleon, Hyperion/PC-DOS or MS-DOS.

Configuration • 128K bytes of RAM; 2 double-sided, double-density diskette drives or hard disk • monochrome display or color-graphics board and appropriate monitor • 1 of 28 printers with appropriate interface.

Current Version/Version Reviewed • Version 3.0/Version 3.0.

First Delivery • April 1981.

Number of Installations • information not available.

Comparable Products • MicroPro WordStar.

Optional Associated Software • none.

Price • \$495 retail; \$295 retail (personal user version) • \$10 license fee.

Vendor • Select Information Systems; 919 Sir Francis Drake Boulevard, Kentfield, CA 94904 • 415-459-4003.

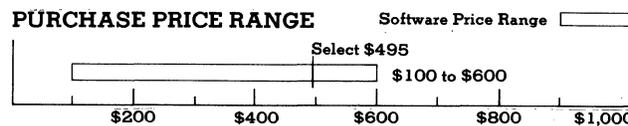
Canada • Dealers: Xerox Retail Stores, 703 Don Mills Rd, Toronto, ON, M3C 1S2 • 416-482-6111 • Computer Projections, 406 Ontario St, Toronto, ON • 416-967-0629 • Westcan Compuware Distributors, 14546 92nd Ave, Surrey, BC V3R 7L2 • 604-581-5332.

■ ANALYSIS

Select is a complete word processor in the sense that it contains all the features one would expect to find in a word processor. There are move, copy, delete, and even some unusual and useful features you will not find in other word processors. But using Select may be a significant organizational challenge because it does not work in the same manner as most other word processing products.

Simple tasks seem to require an inordinate number of keystrokes, and some keystrokes have different meanings in different contexts; contexts which are all too easy to confuse. Beginning users are likely to find themselves reading the manual for each new action, no matter how trivial.

Select Information Systems did a very nice job in the documentation and presentation of the product. Its online tutorial, called "Teach," is a good starting point from which



SELECT INFORMATION SYSTEMS SELECT WORD PROCESSOR PRICING • open bar shows the typical range of prices for **WORD PROCESSING** software used in a corporate environment • the vertical line within the bar graph indicates the price of **SELECT**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	=====									
DOCUMENTATION	=====									
FUNCTIONALITY	=====									
EASE OF USE	=====									
SUPPORT	=====									
SYSTEM INTERFACE	=====									
EXPERIENCE OF VENDOR	=====									

*For an explanation of rating criteria, please refer to the Word Processor Features section in the Software Evaluations (805) report.

to learn the system. There are even a lot of good design concepts, novel and interesting. The problem is that intellectual challenge may not get the letters out. Users who like the very specific style of Select will no doubt be very productive with it, but many will find that something more conventional is better.

Strengths

The most outstanding feature of Select is its documentation. The two manuals are well written and contain numerous visual examples that are very helpful to the user. In a few instances, however, information necessary to complete a particular function is not consolidated. Instead, the user must search for the information elsewhere in the manual.

Another strong feature of the product is the tutorial or "Teach" session. Using "Teach," which is one of the choices on the main menu, takes the user through the basics of using Select without the necessity of using the reference manual. This makes the beginning steps for learning the product very easy to follow. And it allows for a quick refresher course when the product has not been used for a period of time.

The product is equipped with a spelling checker, which is very helpful in any word processing environment. Use of this feature catches misspelled words and keying errors such as the transposition of two letters. The fact that the producers of Select have chosen to include a spelling checker as an integral part of the package and not as a separate product is a significant user benefit.

Limitations

Select's main limitation is confusing use of its edit and insert modes. Not only are the terms confusing—edit does not mean revise text as opposed to enter new text—but the concept of having a separate operating mode in which ordinary characters are recognized not as data but as commands deviates from nearly every other word process-



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ing or text editing process. Unless the user is familiar with nothing else, select is a drastic departure from normal operation.

Some of the formatting options of the product conspire to frustrate the user. Nearly any combination of formats can be produced in some way, but often, selecting a format option in one section of the text precludes standard formatting features, such as justification, in another.



■ HANDS-ON EVALUATION

Our technical staff had little difficulty in installing the product. The only hitch came when the program ran out of diskette space in an attempt to save its personalization file. A message suggesting that the user seek dealer support was issued, but a careful examination of the problem diskette revealed that all of the printer-specific modules were also present on the diskette. It was a simple task to copy some of the printer modules to a second diskette (for posterity), erase them from the problem diskette, then proceed.

The secretary assigned to the initial evaluation reported enthusiastically about the tutorial incorporated directly into the package. It is accessible from the main menu by selecting the option called "Teach" and contains the beginning steps on diskette. As the vendor suggested, the manual was put down and the basics learned right on the screen. This online tutorial worked well and the lessons it portrayed were completed successfully.

Live use proved a different matter. There is support for all the traditional word processing functions in Select, but the product is significantly different from the other word processors with which our staff is familiar. The major difference is that Select defines an "edit" mode in which characters are interpreted as requests for special formatting or word processing functions, and an "insert" mode in which they will effect the text of the document. All too often the user in "edit" mode forgot to switch to "insert" mode. This meant that the system took the letter keyed to mean functions and commands that were not wanted. The user is alerted by a beep that additional input for the (unwanted) command is necessary, curses, aborts the command, enters "insert" mode, and continues with heads-down typing until the next time.

Several problems arose with the use of the "erase" function. This is a very powerful function and it works well, sometimes too well. Moving beyond the end of the area we wished to erase caused the system to go into "bird mode" (as our staff tended to call the audible alarms) and request that a control key be pressed. Pressing the key lost the document altogether.

While there were a lot of things we liked about the flexibility of the product, we just could not come to terms with its operation.

User Interface

Select uses a dual-mode structure in which characters

entered in one mode are added to the document while those entered in the other are interpreted as commands. While this permits the use of command forms which relate to the name of the function being invoked, it can result in confusion if the user is unable to remember the mode being used.

Menus: Menus are used for commands at some points, but the main command options are listed on a status line during the edit process. The commands are invoked by typing a letter, usually the first letter of the command name. There is no clear hierarchical structure. Expert users may not bypass menus.

Control Characters: not used.

Function/Special Keys: Function keys may be defined by the user to generate any sequence of characters when pressed. Only limit to key text size is the size of disk storage. Only the unshifted form of the function keys can be used as KEY file names.

Command Language: Formatting information is placed in the document after a special delimiter (back slash). This information will cause changes to printed material without affecting the display. Form size, page headers and footers, page numbers, margins, indentation, etc may be set in this way.

Positive Feedback: The user is generally informed of errors, but many functions such as command entry can be accidentally invoked, causing changes in the text that may be difficult to remove. This is caused by the multiple-mode structure of the program, in which commands and text are alike except for the mode of the program at time of entry.

Status Display: The top line of the screen shows the command menu, and the next line, the document name, character position of the cursor, and current page number.

Help Facilities: Help with any command can be requested by entering "H" followed by the command name for which help is required. Since help must be requested in EDIT mode rather than in INSERT (change text) mode, it can be requested at any time by leaving insert mode and is not destructive to the current text position.

Environment

Select can function on an IBM PC with at least 128K bytes of RAM (less if using PC-DOS 1.1 or earlier) and single-sided drives; however, it fits much more comfortably with double-sided drives. Either monochrome or color/graphics monitors are supported for viewing the documents, and 26 different printer configurations are offered, which support most of the commonly used models.

We tested using an IBM PC with 192K bytes of RAM, a single-sided and a double-sided disk drive, a color/graphics monitor, and an Okidata Microline 92 printer. The only difficulty encountered was with the initial configuration of the package, which was solved by shuffling a few printer support files.

Users may copy the program to formatted diskettes or to a hard disk for execution. Data files may also reside on a hard disk.



Select Information Systems Select Word Processing Package

Documentation

Our professional and secretarial staffs were very pleased with Select's documentation. The reference manual is provided with a plastic spiral binder, which allows it to be placed flat on either the desk or the copy holder with ease. The manual is well-written and contains numerous visual examples, and the indexes refer to the functions that they do in an easy-to-follow manner. The major shortcoming of the documentation is that some functions are not described completely under a single heading. Sometimes two or three reference trails must be followed to get all the information on a function. To be sure, the different locations for the information are found in the index, but there is no reference to the other locations in the text. We would have preferred to either see a function fully described in one place or have references in each location pointing to the other uses or options available.

An installation guide pamphlet is also supplied with the product. It provides step-by-step instructions for installing the product on the various computer configurations supported. The user need only choose the proper configuration, then follow through the clearly presented instructions in order to install the product.

Functionality

Overall, we found that an excessive number of keystrokes were required to perform the simple and frequently used functions such as delete, insert, etc. For example, to delete a character while in insert mode, the following sequence must be performed:

Press the "ESC" key to enter edit mode; Move the cursor to the beginning of the text to be deleted; Key "e" for erase; Move the cursor to one position beyond the last character to be deleted; Key "ESC" a second time to complete the operation; and finally Key "i" to return to insert mode.

If you don't make many errors, this is perhaps a reasonable style. Our professionals really hated it.

We found that having an edit and an insert mode requires a significant adjustment on the part of most users. A "j" keyed in edit mode is a request to "justify" characters, while the same "j" keyed from insert mode results in the character being added to the text. There is no set of functions or commands that can be interspersed with text as with most full-screen editors or word processors.

Because the commands are English-like while in edit mode, memorizing the first letter of the corresponding English word makes them easy to remember and use. It seems to be the rationale behind having the two separate modes. A few of the staff who had never used any form of computer editor or word processor adapted to the multi-mode concept rather easily, but such persons are in the minority in our organization.

There is an "Xchnng" command used in Select primarily for drawing or typing figures. With this function one can type over text and backspace to delete without restriction; the only limitation is that it does not word-wrap text or justify it. A few users were ready to settle for those restrictions just to be able to overstrike text.

We found that the text could be tailored to look as desired, but, alas, found again that too many commands have to be given to accomplish this task. The "\ commands" used to override the format line within text) must be set before the text is changed or keyed and remain in effect until undone. While in effect, they may override automatic word wrap, justification, etc. And again, the formatting takes what seems an endless number of keystrokes. In a "center text" function, for example, most word processors use one of the function keys or a key combination to invoke the process, the text is centered, and one goes back to normal typing again. Select requires that you set your "\ commands" for centering, type your text underneath, and then undo the command on the next line.

One thing our secretary and our technical staff found annoying is that the system does not allow you to "use" a document unless you name it something else first. This is done to keep a copy of your original document in the file before any changes are made. That's fine, but we had to retrieve one particular document three times to make different changes—every time the system requested we name it something else, and we began losing track of which document we had named what. The "view" option solves this problem, of course, by showing you the document before you use it, but we would have preferred to just use our document, save it with the new changes, and have the prior version saved with a different file extension instead of being required to do the housekeeping functions ourselves. One frustrated manager shouted at the terminal "just let me have it, I know what I'm doing!"

On the other hand, we liked the Superspell function offered by Select. Superspell will go through the document and inform you of the number of words it came across and could not identify, then request that you incorporate them in the library or ignore them. This is very nice and an easy way to increase your library with commonly used technical jargon.

Another unusual function offered by Select is the "dead" key. With this command, one can cause a character to backspace one position before printing. This permits the printing of composite letters which are foreign to the English alphabet—very helpful when writing in German or Spanish. Of course, the printer must support the option.

We found the printing options very reasonable and useful in Select and had no problem with any of them. We also tried the merge document and boiler-plate functions and escaped unscathed.

Ease of Use

We found Select easy to use and even interesting—the major problem we had is that it acts differently than most other word processors that have been incorporated into the office environment. Our second main complaint is that it takes too many keystrokes to perform simple functions because of the necessity of changing modes.

We suspect that continual use of this word processor would overcome its peculiarities, but only if the users never had to use another word processing or editing product at the same time. For users already familiar with a conventional office



Select Information Systems Select Word Processing Package

word processor or another microcomputer product, Select requires a fairly dramatic transition, and the learning curve for the staff may be, as it was in our case, objectionably long.

We found the "Teach" lessons to be very useful for beginners. We also found it to be a good refresher since it can be accessed from the main menu. However, as the documents within it are contrived, one is not able to realize certain inconveniences until the "live" test. We doubt that this bias toward the simple is intentional, but it is there. A tutorial treatment of some of the less logical aspects of formatting might have made the process more easily understood.

We made good use of the HELP function. It was a quick way to get information on what to do and we found the instructions simple and complete. The instructions given by HELP, if followed faithfully, do in fact accomplish the desired task. The problem lies primarily in following the procedures by reflex rather than by reference each time. Our reflexes were all too often wrong.

Perhaps a very significant fact is that the authors of the Select manual chose to include a chapter in their document entitled "Tips on Avoiding Errors." We feel that the program should be user-friendly enough to make such a chapter unnecessary.

Support

The vendor seems to rely upon the expertise of the dealer to act as the first echelon of support. This reliance may cause problems for businesses who purchase the product through a mail-order firm or whose local dealer supplied but does not use Select. We experienced no operational problems other than the space problem mentioned earlier, which we were able to correct ourselves.

The software license states that the user may be able to make hard copy revisions to the program by means of Hard Copy Revisions supplied by the vendor for a period of one year from date of purchase.

System Interface

No mention is included in the documentation of an interface with any other product, of using Select files in another word processor or program, or of using other files with Select.

Vendor Experience

Select Information Systems, Inc was founded in 1980 as a software, consulting, and programming company. SIS produces another form of Select for personal use, and an information manager program.

LCNS: license fee.

■ PRODUCT OVERVIEW

Terms & Support

Terms • Select is available on a license for purchase only from Select Information Systems, Inc, through computer dealers, software dealers, or mail-order firms throughout the U.S. for a single computer only; user may transfer the license to a successor computer for a \$10 fee.

Support • system support provided by the dealer.

Component Summary

Select comes packaged on 4 diskettes. INSTALL contains the installation and configuration programs and files. MASTER contains the programs which support the word processor. TEACH contains the on-line tutorial; and SUPERSPELL contains the spelling checker.

Select • standard version:

\$495 lcms

Select • personal user version:

295

Computers & Operating Systems Supported

Select can run on the IBM PC and PC/XT, and also on the Compaq, Chameleon, and Hyperion computers. It runs under PC-DOS or MS-DOS operating systems.

Minimum Operating Requirements

Select requires 128K bytes of RAM memory, 2 double-sided, double-density diskette drives or a hard disk, a monochrome display or color/graphics board and appropriate monitor, and any of 28 printers with appropriate interface.

Features

Display Type • generally a full-screen editor with text displayed as it will be printed; on inserting text, however, justification and formatting are not applied until the change has been completed.

Display Feature Utilization • special characteristics of text such as bold and underscore are created by adding character sequences to text and do not display using the appropriate attribute • highlighting is used to indicate text to be deleted as part of ERASE operation.

Command Structure • a command mode is defined where characters are recognized as commands rather than as text • format commands are entered as strings of data in the text itself.

Error Recovery • no automatic backup file is created; saving text is a normal part of exiting the product, and not a special command to be used at intermediate points • the ZAP delete text block command is irreversible.

Block Operations • move, copy, and deletion of text can be done in marked blocks • erasure can be done on a character, word, line, or sentence basis.

Merge/Print Functions • merge functions are supported for the creation of form letters or mailing labels • Select offers no database package for merging of text, but the format is compatible with many database packages.

Spelling Check/Aid • Superspell program can be called from main menu • dictionary size is 10,000 words and can be expanded by user • incorrect words are marked for correction.

Multiple Windows/Multiple Documents • unsupported.

• END



Sensible Software GRAPHICS DEPARTMENT Graphics Package

■ PROFILE

Function • production of graphs in scatter, line, bar, or pie form from directly keyed data or from the output of popular DIF-formatted packages and/or the production of free-form graphic designs.

Computers/Operating Systems Supported • Apple IIe, Apple II+, and most Apple-compatible computers; requires Applesoft in ROM; also supports older Apple II computers with a language card or 16K RAM card installed.

Configuration • at least 48K bytes of RAM memory and DOS 3.3, at least one disk drive, and a video monitor or TV set, with a black and white or color display.

Current Version/Version Reviewed • Version 1.03/Version 1.02 reviewed.

Date of First Installation • October 1983.

Number of Installations • approximately 1,000.

Comparable Products • Software Publishing Corporation pfs:Graph, VisiCorp VisiPlot, and Spectrasoft Versaplot.

Optional Associated Software • Image Printer II, a graphics printing software package.

Price • \$125 retail price.

Vendor • Sensible Software, Inc; 6619 Perham Drive, West Bloomfield, MI 48033 • 313-399-8877.

Canada • Frantec; 1685 Russell Road, Ottawa, ON K1G 0N1 • 613-523-7272.

■ ANALYSIS

GRAPHICS DEPARTMENT is a reasonably priced, very versatile graphics package with many sophisticated features. It is composed of 4 modules and 2 support systems on 3 disks. While many graphics packages have the capacity to either create charts from input data or to generate free-form graphs, GRAPHICS DEPARTMENT has functions which allow both.

The Charting Kit module allows the user to produce all 4 of the basic chart types (scatter, line, bar, and pie) from data which is keyed in by the user or from data files written by programs, such as VisiCalc, pfs:File, or DB Master, using the data interchange format (DIF). Horizontal and vertical axes are automatically labeled and scaled; however, the vertical axis scale can be manually controlled if necessary (for example, when plotting stacked bar charts). Up to 99

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	████████████████████								8.0	
DOCUMENTATION	████████████████████								8.0	
FUNCTIONALITY	██									9.0
EASE OF USE	████████████████████							7.0		
SUPPORT	████████████████				4.0					
SYSTEM INTERFACE	████████████████████							7.0		
VENDOR EXPERIENCE	████████████████				4.0					

*For an explanation of rating criteria, please refer to the Graphics Features section in the Software Evaluations (805) report. The Overall Package Average is 6.7.

data points per data set can be included in each graph. Data points can also be sorted into ascending order on either axis.

The Graphics Tool module allows the user to edit existing pictures or to create pictures from scratch. Points, circles, ellipses, lines, and rectangles can be "drawn" and images from shape tables can be added. With the Transform submodule, pictures can be reduced, segments can be transferred to other pictures, and 2 pictures can be merged into one. With the Paint submodule, portions of the screen can be "painted" with over 100 colors and patterns.

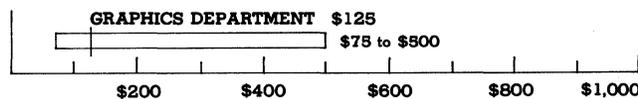
Text can easily be added to the graphics with the Lettering Kit module. Labels, slide separators, billboards, etc can be created by using the keyboard like a typesetter. Text can be typed in a character at a time or entire lines can be typed at the bottom of the screen, placed into the picture, and viewed before being permanently added. Upper- and lowercase letters can be displayed in over 30 different character styles (fonts), 5 sizes, and 6 colors. Spaces between the letters can be controlled and words can be angled in any of 5 different directions.

With the Slide Projector module, charts can be arranged into a "slide" presentation. Up to 32 pictures (16 per disk) can be included and shown in any order. Subtitles can be added at the bottom of each slide, if desired. Because the slides can be shown as fast as every 1.5 seconds and the screen is not cleared between slides, some "animation" effects are possible.

□ Strengths

GRAPHICS DEPARTMENT makes basic chart generation a very simple process. The introduction, Charting Kit overview, and the tutorial get the user off to a good start. He is shown pictures of sample graphs, given suggestions for the best use of each, and taken step-by-step through a session of graph generation. A sample slide show,

PURCHASE PRICE RANGE Software Price Range



SENSIBLE SOFTWARE GRAPHICS DEPARTMENT PRICING • open bar shows the typical range of prices for GRAPHICS software used in a corporate environment • the vertical line within the bar graph indicates the price of GRAPHICS DEPARTMENT, the evaluated product, relative to the price range of similar products.



Sensible Software GRAPHICS DEPARTMENT Graphics Package

included on one of the disks, gives the user a good idea of what the program is capable of producing.

The program is almost entirely menu-driven, so there are very few commands to memorize. All available commands are displayed on the screen at all times and each command is selected with one keystroke.

GRAPHICS DEPARTMENT is versatile. One can take the same set of data points and create many different charts, using different types of graphs, different colors, adding text, reducing size, merging pictures, ad infinitum. With all the options available in this program, there is no excuse for boring charts!

The Slide Projector module is a very useful feature. With a color monitor, it allows the user to create a visually attractive presentation at a reasonable cost, both in time and money. The continuous play option will run the slide show under full automatic control, with slides changing at preselected intervals; in addition, a paddle or the keyboard can be used to manually change slides.

□ Limitations

Although the plotting of graphs takes almost no time at all other parts of the program seem to move quite slowly. Switching between the various software modules is slow.

While GRAPHICS DEPARTMENT has the capability to use data from DIF files (such as VisiCalc, pfs:File, etc), it does not interface directly to these files. This means that the user must first generate a DIF file from within the database or spreadsheet and then use GRAPHICS DEPARTMENT on the DIF file. This 2-step process is somewhat time consuming and annoying.

GRAPHICS DEPARTMENT runs under DOS 3.3. Apple's new operating system, ProDOS, is not mentioned in the manual nor is it supported. Users wishing to run under ProDOS will have to attempt their own conversion or wait for Sensible Software to release the package under ProDOS.

GRAPHICS DEPARTMENT does not support the Apple IIe in any special way. This is unfortunate since the Apple IIe has several unique features which could have been incorporated, such as: double HI-RES screen graphics, open-apple/closed-apple function keys, 4 cursor keys, an auto-repeat keyboard, and extended memory (64K to 128K bytes of RAM). GRAPHICS DEPARTMENT chose to support the minimum common denominator in Apple IIs.

■ HANDS-ON EVALUATION



Upon first using GRAPHICS DEPARTMENT, we were impressed with how quick and easy it was to produce a variety of very colorful, extremely professional looking graphs. With the automatic axis scaling and labeling, graphs were produced quite rapidly. We were also pleased with how easy it was to take a given set of data and "try it out" in any of the 4 basic chart types (scatter, line, bar, and pie) or a combination thereof. This helped in determining which type of graph would be most appropriate for the particular data. To add further polish, we were then able to add some statistics to our charts, with

the "push of a button."

The Lettering Kit allowed us to add text and labels to our charts. Although not difficult to use, it took quite a bit of experimentation with different fonts, sizes, colors, and angles in order to find out what fit in and looked best with a particular type of graph.

While we had few problems when attempting most functions in the program, we did encounter some problems when using the interface for data files stored in the Data Interchange Format. The manual appears to make the assumption that all users will be familiar with VisiCalc and devotes less than 2 pages to the conversion process. A novice on our staff was totally lost when attempting to follow the directions and, while a far more experienced computer (and VisiCalc) user was eventually able to accomplish the task, he spent a fair amount of time fumbling around in the program beforehand.

Because the Graphics Tools module (the free-form portion of the program) has so many options, it was a fairly time-consuming, although not necessarily difficult, process to learn. All users felt that a tutorial in this section would have simplified it considerably.

□ User Interface

GRAPHICS DEPARTMENT interface consists of simple menus for handling most options and a very few control-key commands for others.

Menus: The program is almost entirely menu-driven, with easy-to-understand commands. All available commands are displayed at all times and each command is selected with one keystroke. There are 3 major levels of menus. The main menu is displayed whenever a module of the program is entered or exited. Any module of the program can be selected from the main menu, which also indicates if that particular module is on the diskette currently in the drive. The printer interface, file utilities, or the option to boot another disk can also be selected at this point. Each module also has its own main menu and a varying number of "submenus."

Control characters: Very few control characters are used in this program. Pressing control-Z in the Charting Kit or Slide Projector modules will produce a Help menu which tells the user which control-character keys are available and what they do. While viewing DIF files, commands are prefixed by a slash ("/") just like in VisiCalc.

Function/special keys: No use is made of the open-apple or closed-apple keys in this program. In the Graphics Tools and Lettering Kit modules, the I, J, K, and M "diamond" is used for up, down, right, and left cursor control with H and L used for faster movement to the left or right. While viewing DIF files, the greater than sign with a cell number is used to "go to cell" and the left and right arrows are used for left/right and up/down, with the space bar toggling direction. The up and down arrows are not used.

Command language: No command language is supported.

Positive feedback: The user is kept quite well informed



Sensible Software GRAPHICS DEPARTMENT Graphics Package

during most operations via messages on the screen. Most commands are double checked before proceeding. Some incorrect responses are not accepted and the question will repeatedly be asked until a correct response is received. If an incorrect letter is pressed while in the Graphics Tools or Lettering Kit modules, a double question mark appears on the bottom of the screen ("??") as if to let the user know he is not making any sense! When disk operation errors occur, an error message number is displayed (along with a brief message for more common errors) and can be looked up in Appendix C at the back of the manual for more information.

Status display: The program does not have a status line per se, but it does always keep the user informed as to what operation he is in and what commands are available. In the Charting Kit this is done mainly with menus centered on the screen, while in the other modules, this information is usually at the bottom of the screen.

Help facilities: No general Help menu for the entire program is available; however, while in the Charting Kit or Slide Projector modules, a brief Help menu, which explains some control-character commands, can be displayed by pressing control-Z. This really serves more as a reminder rather than a help and would not be necessary if a command reference card, which is not available, were included with the package.

□ Environment

Sensible Software's GRAPHICS DEPARTMENT works on Apple II computers and Apple II compatible computers (such as the IIe, II+, Franklin Basis, and Apple III in Apple II emulation mode) that have at least 48K bytes of RAM and a ROM version of Applesoft. Older Apple IIs, which only have Integer Basic in ROM, also require a 16K-byte RAM card.

Although only one disk drive is required, 2 disk drives are desirable. More than 2 drives seem to offer no advantages. The first disk drive is used to hold the program disks. (GRAPHICS DEPARTMENT is supplied as a program encompassing 5 disk sides on 3 disks. Regardless of the number of drives, these 5 sides are shuffled in and out of drive #1.) The second drive can be used for holding a data disk that contains DIF files, data files, screen images, and the like. The Slide Projector module will also make use of the second drive. This module allows presentations of up to 32 pictures, where 16 pictures are stored per disk drive. The disk drives must be DOS 3.3 compatible.

The TV or monitor used with the Apple II can be either monochrome or color. A color display is desirable because it makes full use of the GRAPHICS DEPARTMENT's color capabilities. Only the 40-column text screen and the HI-RES graphics screens are used, so that a color monitor is sufficient by itself. A monochrome display is useful for previewing how pictures will appear when printed on a standard (black and white) printer.

GRAPHICS DEPARTMENT is not copy protected so users can make their own back-up copies. It runs under DOS 3.3 and uses standard DOS 3.3 files: Applesoft, binary programs, binary screen images, etc. No mention is made of a ProDOS version of this program.

GRAPHICS DEPARTMENT is primarily used to generate HI-RES screen images that are stored on disk as a standard (HI-RES screen "BSAVE") binary file. These are used for generating "slide shows." GRAPHICS DEPARTMENT supports the Apple Silentyte printer and has information on how to program your own printer driver. Most users will purchase a separate program for printing screen images. Since GRAPHICS DEPARTMENT is "screen image" oriented, it is inherently incompatible with pen plotters.

GRAPHICS DEPARTMENT does not support paddles, joysticks, graphics tablets, or a mouse. Rather, the graphics are controlled by the keyboard.

Other than manual entry, the only method for getting external data into GRAPHICS DEPARTMENT is via a DIF file. This allows data transfers from such popular programs as VisiCorp's Visi series of programs (including VisiCalc), pfs:File, DB Master, etc.

□ Documentation

Documentation consists of a single spiral-bound manual, logically organized according to complexity and the order in which functions normally will be used. It starts out with a very helpful tutorial, lots of illustrations of different types of graphs that can be produced, and suggestions for which type of graph is best used for particular kinds of data.

Because of the tutorial, the Charting Kit module is, for the most part, quite easy to learn to use. One area that could cause some difficulty, however, is the section on DIF file conversion. For a function that will most likely be used quite a bit, it really is not sufficiently explained for easy use.

The Lettering Kit and Slide Projector modules are all quite adequately explained and the user should have no difficulty with most available options. However, the free-form graphics described in the Graphics Tools module, present more problems. Although the functions are fairly well explained, there are few pictures to illustrate all the various options, some of which are fairly complex. A tutorial would also have been extremely useful in this section.

A glossary of important terms, instructions on running the slide demonstration, a list of numbered error messages, and samples of available fonts can be found at the back of the manual.

No reference card is included with this package, which can cause some problems. Although there are very few control-character commands, those that are used are buried in the manual and not even listed in the index. The user may happen to cross them and discover that, while in the Charting Kit or Slide Projector modules, a Help menu (listed as "Edit help" in the index) can be accessed to describe several control-character commands that are available. A reference card, with at least a list of the commands, would be helpful.

□ Functionality

GRAPHICS DEPARTMENT provides a method for not only creating all of the basic graph types (scatter, line, bar, and



Sensible Software GRAPHICS DEPARTMENT Graphics Package

pie) from manual input or from DIF files, but also for creating graphic designs from scratch. While some graphics packages in this price range are quite limited in the number of options available, GRAPHICS DEPARTMENT has numerous capabilities.

The Charting Kit module has logical defaults for quick plotting, but also allows the user quite a bit of control over graph format. Vertical and horizontal scaling are automatically established, but vertical scaling can also be controlled manually. Although the colors cycle in a fixed order, the user is given some flexibility in that he can choose which will be first, how many there will be, and how intense the color will be. Labels are automatically provided; however, the Lettering Kit can also be used to add labels and text in over 30 different fonts, and a number of sizes, colors, and directions.

The Graphics Tools module can be used to edit existing pictures or to create them. The user can draw points, lines, rectangles, circles, and ellipses of various colors and sizes. Standard Applesoft shape tables can also be used to draw images onto a picture. Areas of the screen can be "painted" with over 100 colors and patterns, and colors can be changed using the Filter submodule. Portions of a picture can be moved around on the screen, copied elsewhere on the same picture or onto another one, or 2 entire pictures can be merged into one. However, deletions can only be made by overlaying. A picture can be reduced in scale to one-fourth the original size, but of course this also reduces the clarity.

With the slide projector module, a series of up to 32 "slides" can be arranged and displayed on a monitor or TV screen, either at preset intervals or manually. Subtitle can be added to each picture if desired.

□ Ease of Use

Because almost all functions in GRAPHICS DEPARTMENT are accomplished by choosing from a menu or responding to a prompt and all available commands are displayed on the screen at all times, the user can be capable of producing graphs in a very short period of time. However, because there are so many options available in this program, a fair amount of time may be spent simply on trying them all out.

The basic charts produced in the Charting Kit module present very few problems for the user. Very attractive charts, automatically labeled, with optional statistics added, can be produced with minimal time and effort, particularly with manual input of data.

The DIF conversion section may cause a number of problems. Although data can be used from a number of different sources (ie. pfs:File, DB Master, etc) the screen is set up to look like VisiCalc and an assumption is made that everyone is familiar with that particular program. The manual has only 2 pages devoted to this entire process and it really is not sufficient. It may require quite a bit of trial and error to figure it out, even for the more experienced user.

Some of the other more complex functions may take a little more effort, but with the help of the manual, not too many

problems are encountered. The Graphics Tools module (the free-form portion of the package) is somewhat limited, in that it does not allow the use of a joystick, mouse, or graphics tablet. According to the manual, the keyboard was chosen to "provide the most accurate and stable positioning." Because this module contains some fairly complex functions, it would have been easier for the user if a Help menu had been included, but it was not.

□ Support

GRAPHICS DEPARTMENT is not copy protected and the purchaser is advised to make a backup copy before using the program. A full 2 paragraphs are devoted to admonishing the user to behave in a professional manner and only duplicate the program for his own use.

Sensible Software does not appear to go out of its way to let the purchaser know what kind of support is available to him. After searching through the manual, we were able to find no information aside from the normal disclaimers on expressed or implied warranties. The registration card states that it must be returned to qualify for product support, but gives no indication as to what this might include. A section on reporting problems is listed in Appendix C at the back of the manual and the user is told in no uncertain terms what is expected of him (serial number, version number, concise description of the steps taken before the error occurred, etc). However, the user is not told where or to whom to report this. No address or telephone number is listed in what would seem a logical place to find them. An address and phone number are listed on the front cover of the manual. The phone number given is 313-399-8877. No 800 number is given.

We were able to find information on disk replacement in the Sensible Software Product Catalog for Spring 1984. It states there that the fee for repair or replacement is \$10 for one disk, \$15 for 2 disks repaired at the same time, and \$20 for 3 disks repaired at the same time. In an advertising brochure for GRAPHICS DEPARTMENT, it states that Sensible Software, Inc has a "very competitively priced product upgrade," whatever that may be.

□ System Interface

GRAPHICS DEPARTMENT accepts input data via 2 methods: manual data entry or by DIF files. This means that GRAPHICS DEPARTMENT does not interface directly to other database or spreadsheet programs such as VisiCalc, Quick File, pfs:File, etc. The user must first generate a DIF file from within the database or spreadsheet and then use GRAPHICS DEPARTMENT on the DIF file.

GRAPHICS DEPARTMENT is oriented at creating a HI-RES graphics screen, which may be saved as a standard ("BSAVED") file on disk. In terms of printer support, the package supports the Silentype printer and describes how to program your own printer interface. Most users will therefore purchase a separate package to perform screen dumps from disk to printer. GRAPHICS DEPARTMENT does not support pen plotters or other unusual protocols (for Apples) such as Tektronix (Plot 10, etc), HP, IBM 3270, and NAPLPS Videotex.



Sensible Software GRAPHICS DEPARTMENT

Graphics Package

Vendor Experience

Sensible Software has been in the business of software distribution since 1978 and are known primarily for their business and utility software. Such software includes the Sensible Speller, Super Disk Copy, Back It Up III, and Multi-Disk Catalog III.

■ DETAILED PRODUCT DESCRIPTION

Terms & Support

Terms • GRAPHICS DEPARTMENT is available for purchase directly by mail from Sensible Software, Inc (with \$1.25 added for shipping) and also through computer stores and software stores.

Support • the fee for repair or replacement is \$10 for one disk; \$15 for 2, and \$20 for 3; Sensible Software, Inc advertises a "competitively priced product upgrade."

Component Summary

GRAPHICS DEPARTMENT is comprised of 4 major modules and 2 support systems on 3 floppy disks:

The Charting Kit disk contains the Charting Kit and Printer Interface modules on the front and Large Fonts (for the Lettering Kit) on the back. The Graphics Tool disk contains the Graphics tools and Lettering Kit modules on the front and nothing on the back. The Slide Projector disk contains the Slide Projector and File Utilities modules on the front and a sample slide show on the back:

\$125 lcns

Computers & Operating Systems Supported

An Apple II/II+/IIE computer or an Apple-compatible computer with a minimum of 48K bytes of memory and Applesoft in ROM.

Minimum Operating Requirements

The minimum memory requirement is 48K bytes. A video monitor and one or more 5-inch floppy disk drives are also required.

LCNS: license fee.

Features

GRAPHICS DEPARTMENT is an integrated graphics system that contains many special features that make it ideal for business use. Some of its many capabilities include:

Format • the 4 basic types of graphs (scatter, line, bar, and pie) can be generated, along with free-form graphic designs.

Data Source • data can be keyed in by the user or from the output of popular DIF files (eg. VisiCalc).

Graph Size/Position • the entire picture can be moved around the screen in the Lettering Kit module; in Graphics Tools, a portion of the picture can be moved while the rest is held fixed and a picture can be reduced to one-fourth size and placed in one of 4 different areas of the screen.

Text & Label Support • the Lettering Kit enables the user to easily add text and labels; over 30 different fonts, 5 sizes, and 6 colors can be used and words can be angled in any of 5 different directions.

Image Process Features • with the Graphics Tools module, free-form images can be drawn, geometric shapes can be generated at various points and in various sizes, and areas of the screen can be "painted" with over 100 colors and patterns; standard Applesoft shape tables can also be used to draw images onto a picture.

Math/Stat Features • when generating graphs with the Charting Kit, the user has the option of having some additional statistics automatically printed onto the chart, including: the mean value, the standard deviation, and a best-fit trend line computed using a least-squares linear regression.

Text/Report Integration • while text can be added to a graph with the Lettering Kit module, no real features exist for report integration.

Other Facilities

Optional, extra-cost software for printing of screen images is available as a package named Image Printer II:

\$80 lcns

• END



SoftCraft Btrieve

Data/File Management System

■ PROFILE

Function • data and file management system.

Computers/Operating Systems Supported • IBM Personal Computer, PC/XT, and compatible machines using PC-DOS or MS-DOS, versions 1.0, 1.1 or 2.0 operating systems • versions available for TI Professional Computer, Victor, and Wang systems; a Hewlett-Packard 150 version is currently in testing; network versions are also available.

Configuration • DOS 1.0 and 1.1 require a minimum of 64K bytes of memory and at least one disk drive; DOS 2.0 requires a minimum of 96K bytes; can support a hard disk if available • user-callable routines require a minimum of 14K bytes in addition to user's application program.

Current Version/Version Reviewed • Version 2.10 on IBM PC was reviewed.

First Delivery • January 1982.

Number of Installations • over 1,000.

Comparable Products • SoftTech Microsystems' KSAM; Quantum Software's Btree; Digital Research's Access Manager.

Optional Associated Software • none.

Price • \$145.

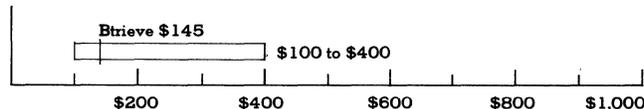
Vendor • SoftCraft, Inc; P.O. Box 9802, #590, Austin, TX 78766 • 512-346-8380.

Canada • currently no Canadian headquarters or distributors.

■ ANALYSIS

Btrieve is a file management system designed for use by programmers developing complex applications in traditional programming languages. One of the problems with traditional programming languages such as BASIC, Pascal, or "C" is that while they may provide some form of file access, the capabilities are limited and do not include operations for complex database manipulation. Even COBOL's database capabilities are limited. These limitations explain the rapid acceptance and growth of database languages and systems such as dBase II, even at the expense of their limited programming capabilities. Btrieve makes database operations accessible to users of traditional languages, giving application writers the best of both worlds: the flexibility and familiarity of their current programming language, and the power of a multikeyed database facility.

PURCHASE PRICE RANGE Software Price Range



SOFTCRAFT BTRIEVE PRICING • open bar shows the typical range of prices for FILE MANAGEMENT software used in a corporate environment • the vertical line within the bar graph indicates the price of BTRIEVE, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	_____									
DOCUMENTATION	_____									
FUNCTIONALITY	_____									
EASE OF USE	_____									
SUPPORT	_____									
SYSTEM INTERFACE	_____									
EXPERIENCE OF VENDOR	_____									

*For an explanation of rating criteria, please refer to the Data Management Features section in the Software Evaluations (805) report.

Btrieve provides application interfaces for IBM or Microsoft BASIC, COBOL, or Pascal, for Lattice C, Computer Innovations Ci-C86, and assembly language. It is a powerful system that includes sophisticated methods for maintaining the integrity of a database, a critical area for any truly serious application. Btrieve is a valuable system worthy of consideration by anyone contemplating his own application development.

Strengths

Btrieve provides all of the functionality necessary to do serious database work. Even complex relational database applications can be written using the capabilities of the package. The index building method, B-trees, from which it derives its name, is a fast and efficient method for the file maintenance. Once the index entries are made for a given record, no further rearrangement is ever necessary. This provides much better performance than other common database packages such as dBase II, which slows down significantly for each index file that is open during record insertion and deletion. dBase II users are encouraged to append the records to an indexed database, then re-index the database in a separate operation.

The other important strength of Btrieve is the extent to which interfaces have been defined. Each of the commonly used languages for application is supported in at least one form, with the exception of FORTRAN. This allows practically any application program designer to take advantage of the power and capability of the Btrieve package, and concentrate his efforts on the application package itself.

Limitations

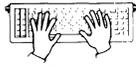
The first and only difficulty that a user is likely to encounter in the use of the Btrieve package is the number of steps one must remember to perform to make the package work. Each step is simple and easy if one only remembers. First, the Record Manager must be loaded. If the application



SoftCraft Btrieve Data/File Management System

language is interpreted BASIC, then the BASIC interface must be loaded, with the file name for storing the load address so that it can be accessed by the BASIC program. Then BASIC may be loaded and the actual application loaded, and the show begins. It was unclear whether it might be possible to hide any of this complication for users who wish to distribute self-contained packages using Btrieve to other end users.

The last area in which improvement could be made is in the calculation of page and file sizes for a given file. The manual contains a full page of formulas for calculating or predicting the sizes needed based on estimates of the number of unique key values and total number of records, etc. It would be much easier on the user if he was prompted for these estimates during execution of the file creation utility, and all of the various and sundry calculations performed automatically.



■ HANDS-ON EVALUATION

The Btrieve package is provided on one single-sided floppy disk containing the Record Manager, all interface routines, and a demo program written in BASIC to handle manipulation of a name and address database. Since Btrieve is not an end-user system as delivered, there are no installation procedures that must be performed to configure the package for a particular system. The package is easily backed up, and can be installed on a hard disk system without requiring any special procedures.

The manual contains explicit instructions on what is necessary to link the interface procedures to the application. Each of the possible programming languages that can be used are covered. For some languages, such as interpretive BASIC, several successive steps are necessary to complete the program connections. However, we must not forget that the capacity for the human mind to forget should never be underestimated. After careful reading of these introductory chapters of the manual, it was set aside and the experimentation begun. The B\$UTIL utility package was brought up and an attempt was made to create a file. It was several steps into the process before the utility package informed us that we had forgotten to load the Record Manager.

With the Record Manager properly loaded, the utility package worked like a charm. Having mastered the easy part, BASIC was started, and the demo program provided with the package loaded and executed. Within a few nanoseconds we were informed that the file that was supposed to contain the address of the BASIC interpreter-Btrieve interface routines did not exist. Having determined that the file did not exist because we had also forgotten to load the interface routines as requested, this problem was also quickly resolved. Once all of the preliminaries were finally accounted for, the demo program executed properly, with no surprises.

The BASIC interpreter interface proved to be the most involved in terms of initial setup work. The other language systems provide for the loading of the interface routines with the application itself, eliminating one of the steps necessary in the BASIC setup.

□ User Interface

In general, the Btrieve system does not contain a user interface per se. It is designed as a system for use within other programming languages. The programming language interface is well-defined and straightforward. All operations are invoked via subroutine or functions calls with a consistent 5 item parameter list, though not all parameters are necessary for every function.

Menus: The B\$UTIL package, which is a utility package for performing common high-level file maintenance functions, is a menu-driven system providing access to 6 utility operations. The menus are very simple, and operations are performed by entering desired values into the fields required.

Control Characters: Not required for operation.

Function/Special Keys: The TAB and SHIFT-TAB keys are recognized for movement from field to field, and all standard editing keys from the keypad, such as left and right arrows, and backspace, are supported for editing the field values as they are entered.

Command Language: None.

Positive Feedback: None.

Status Display: None.

Help Facilities: None.

□ Environment

The Btrieve system was designed explicitly for the IBM PC and compatible environment. Its 96K-byte minimum memory requirements are slightly higher than those of a typical minimum configuration. It can be used with a single-sided, single drive system, or take advantage of multiple drives or a hard disk. A 2-drive floppy system can be used to create a single file that spans both drives, doubling the amount of data that could be stored in one file.

Procedures are provided for taking advantage of the DOS 2.0 tree-structured directory scheme, allowing an application to take maximum advantage of a hard disk. Files may be approximately 4 gigabytes in size, meaning that they are really only limited by the media on which they reside.

□ Documentation

Btrieve documentation consists of a single, full-sized reference manual. The manual contains an introduction to database concepts in general and their implementation within Btrieve in particular. The next chapter is devoted to a description of the utility procedures. The remainder of the manual is concerned with the programmatic interface of Btrieve and its use in applications programs written in other languages.

The details of the application interface are defined for each of the languages supported by Btrieve. After describing the environment and linking requirements for each language, each functional operation is described in detail. Every operation description is followed by an example of the operation's use within the BASIC program. Examples for use of each operation for all of the other languages



SoftCraft Btrieve

Data/File Management System

supported are provided in a separate appendix of the manual.

Other appendices of the manual include the definition of all Btrieve operation codes and error conditions, and a detailed description of the assembly language interface for calling of the Record Manager.

Functionality

The B\$UTIL program is an entire collection of utilities for file creation and maintenance. Some of the B\$UTIL utilities can also be accomplished from the application program interface, but the utilities provide a simple mechanism for accomplishing file maintenance without the need for further programming.

B\$copy copies the contents of one Btrieve file to another. It is commonly used to change the defined characteristics of a Btrieve file, such as key position and key length. The user creates a new file with the new characteristics desired, and uses B\$COPY to copy the old file into the new one.

B\$CREATE is used to create the new Btrieve files. Btrieve files must be created, and their characteristics defined, before any operation may be performed. The file characteristics include file name, physical page size, record length, and number of keys. Key characteristics include key position within the record, key length, type, whether duplicate keys are to be allowed, and whether the key is modifiable.

B\$EXTEND extends a file across 2 different physical disks. It is useful for systems without a hard disk that need the ability to work with files larger than a single floppy. Files are limited to 2 disk drives, and both disks must be present at all times.

B\$LOAD provides the ability to insert records from a sequential file into a Btrieve file. It gives the user a convenient way to create the Btrieve files from data files created using a text editor or a non-Btrieve application.

B\$SAVE provides the opposite capability of B\$LOAD. The records of a Btrieve file may be written to a sequential file, where they may be read and processed by standard text editors or other applications.

B\$STAT reports the defined characteristics of a Btrieve file and statistics on its contents.

The main power of Btrieve is in the application interface provided to users writing their own programs in common programming languages. It allows the writer of an application program to concentrate on the logical structure of his database, and not worry about the physical file handling problems.

At the file level, the application program may call procedures to create, open, close, or extend Btrieve files. In addition, it may inquire as to a particular file's characteristics, such as size, key definitions, number of records, and number of keys associated with the file. All of these operations, except for open and close, are available directly to the user via the B\$UTIL utility package. The programmatic interface, however, allows the application program to perform these functions if desired, simplifying things for the

end user. This also allows the application package to guarantee that the operations were done correctly, according to its own needs.

Record maintenance operations provided include the ability to insert new records, update existing records, or delete unneeded ones. Each such operation alters the makeup of the database contents. Btrieve automatically takes care of changing the index files accordingly to reflect the current file contents. Btrieve will detect and report attempted modifications that violate the characteristics defined for the file during its creation. Examples would be an attempt to modify the value of a key in an existing record which was defined as being non-modifiable, or when the insertion of a data record would create the duplication of a key value for which duplicates are not allowed.

Record retrieval operations provide access to the information contained in the database. The application program determines the key and key value of interest, and requests the return of a data record bearing a particular relationship to the key value given. Functions provided include Get Equal, Get Less Than, Get Less Than or Equal, Get Greater Than, and Get Greater Than or Equal. The application may also position itself at the logical beginning or end of the data file with the Get Lowest and Get Highest procedures. Once a particular position has been established, a file may be accessed sequentially via the Get Next, Get Previous, or Get Current operations.

Btrieve supports the tree-structured directory scheme of DOS 2.0. The set Directory and Get Directory operations are provided to allow an application to control and inquire about the setting of the current directory.

The last set of operations provided gives an application the ability to define a set of logically related Btrieve operations on up to 5 different files as a single transaction. The operations Begin Transaction and End Transaction can be used to bracket a series of other operations. If any system failures occur before the entire set of operations can be completed, Btrieve can automatically backout the portion of the transaction that was done prior to the system failure, retaining the integrity of the database. In addition, the Abort Transaction operation allows the same process to occur under user control, in the event of a user-defined problem, such as a serious entry error or even a change of mind.

Ease of Use

The fact that all the interface routines necessary for using Btrieve from most common programming languages are readily provided makes it very simple to begin being productive with the package. The numerous complete examples in the manual for all programming languages also help the user see exactly how each routine is intended to be used. For the Pascal user, the necessary external procedure and constant definitions are provided, and may be included directly in the application program with a single statement.

One of the most important capabilities provided by Btrieve is its automatic handling of all file inconsistency problems. For applications taking advantage of the BEGIN TRANSACTION and END TRANSACTION model for bracketing



SoftCraft Btrieve

Data/File Management System

groups of operations that must be made together, a transaction log file is maintained by Btrieve. If any system failures occur, Btrieve will recognize the situation immediately upon the next usage of the application, and will use the transaction log to automatically restore database integrity before continuing.

Support

SoftCraft is devoted to providing quality support for their products. A User Registration form must be filled out and returned to SoftCraft. SoftCraft will notify all registered purchasers when new products become available and offer them at special low-upgrade prices. Updates to Btrieve are currently available to the registered user for a \$20 handling charge.

No toll-free 800 number is currently available.

System Interface

The Btrieve package contains all the run-time routines necessary to interface the package to all of the common application programming languages. The only major popular language not supported is FORTRAN. In addition, source files for inclusion within a Pascal program are provided, containing the external procedure declaration and all constant declarations needed by a Pascal application.

The B\$UTIL utility package includes existing programs for the copying of Btrieve files to and from normal sequential data files. This allows for the rapid transfer and sharing of data between Btrieve applications and other data handling systems.

Vendor Experience

Btrieve was first shipped as a product in January 1982, and was the first product for SoftCraft. They have since installed in excess of 1000 copies of Btrieve, and have introduced other personal computer products into the marketplace. They have a good reputation for product support.

■ PRODUCT OVERVIEW

Terms & Support

Terms • Btrieve is available for purchase only from SoftCraft, Inc, through computer dealers, software dealers, and mail-order firms throughout the U.S. and internationally; quantity discounts are available to volume corporate purchasers.

Support • technical support is provided via the corporate phone, 512-346-8380; registered purchasers receive announcements of new products and product updates, and are allowed special rates on update purchases; updates of Btrieve may currently be purchased by registered users for a \$20 handling fee; no toll-free 800 number is currently available.

Component Summary

Btrieve is supplied on one single-sided floppy disk, containing the following software elements.

BTRIEVE.EXE is a Btrieve Record Manager program. It must be loaded to start Btrieve. B\$UTIL.EXE contains the Btrieve Utility Package program. BASXFACE.EXE is the memory resident BASIC interface that may be accessed by any interpretative BASIC program for calling the Btrieve Record Manager. BASXFACE.OBJ is one of 2 object modules which make up the Compiled BASIC interface. PASXFACE.OBJ is one of 2 object modules which make

up the Pascal interface. COBXFACE.OBJ is one of 2 object modules which make up the COBOL interface. XDATA.OBJ is one of 2 object modules which make up the Pascal, Compiled BASIC, and COBOL interfaces. BEXTERN.PAS is the Pascal source file containing the external declaration for the BTRIEVE.EXE function; it must be included in the source of a Btrieve application written in Pascal. BCONST.PAS is the Pascal source file containing constants for all Btrieve operation codes and status codes; for inclusion in the source of a Btrieve application written in Pascal. C86XFACE.O is the object module for the Ci-86 interface. LCXFACE.OBJ is the object module for the Lattice C interface.

Btrieve:

\$145 lcms

Computers & Operating Systems Supported

Btrieve was designed specifically for the IBM Personal Computer, PC/XT, and compatible machines using PC-DOS or MS-DOS versions 1.0, 1.1, or 2.0. Versions are also available for the TI Professional Computer, Victor, and Wang systems. A new version for the Hewlett-Packard 150 is currently in test, and network versions of the package are now available.

Minimum Operating Requirements

Btrieve requires a minimum of 96K bytes of memory in a DOS 2.0 system (64K in DOS 1.0 and 1.1) and at least one disk drive. It can support a hard disk if available. User-callable routines require a minimum of 14K bytes in addition to the memory required by the user's application program.

Features

Btrieve is a data management system providing high-level access and manipulation of databases for applications written in standard programming languages. Key features supported include:

Multikey Access to Records • each key within a file defines a separate access path to records in the file; records are logically ordered by ascending values for each key in the file; a file may have as many as 8 separate keys or access paths defined for it.

Relational Access Among Files • Btrieve files provide the underlying structures required to build a fully relational database.

Automatic Maintenance of All Keys • the index files associated with Btrieve files are automatically updated, and transparent to the application system; index records for key fields are adjusted whenever records are inserted, modified, or deleted.

Duplicate & Modifiable Keys • at file creation time, each key that is declined may be designated as to whether duplicate values or key modifications should be allowed; if prohibited, Btrieve will prevent any database operation that would cause duplicates or modifications to occur; if allowed, each operation is fully supported by the Btrieve routines.

Partitioned Files • for applications that require very large data files, Btrieve supports the ability to extend a data file across 2 separate disks.

I/O Buffer Cache • Btrieve I/O requests are made through a cache system, where a segment of memory is defined to hold images of the disk; attempts to read portions of the disk that are already in memory are satisfied without the necessity of actually performing the disk operation; the size of the memory space allotted for the cache can be determined by the user.

Two Levels of Built-in Integrity Controls • if upon opening of a Btrieve file it is determined that the file is in an incomplete state because of a previous system failure, Btrieve automatically recovers the file to a consistent state; the programming interface allows the grouping of a series of record operations into a single transaction; if the transaction is aborted prior to completion of the sequence of operations, either through user request or system failure, Btrieve will automatically remove those operations that were performed.

LCNS: license fee.



SoftCraft Btrieve Data/File Management System

Unrestrictive File Sizes • the maximum size of a Btrieve file is approximately 4 billion bytes; the maximum number of key values and the maximum number of records within a file is unrestricted.

Utilities for Maintenance & Creation of Files • Btrieve provides

6 utility programs that allow simple creation and maintenance of Btrieve files without the necessity of writing an application.

• END





Sofstar, Inc Business Planning Tool

Financial Planning Package

■ PROFILE

Function • financial planning tool.

Computers/Operating Systems Supported • IBM Personal Computer, IBM PC/XT, and compatibles; runs under PC DOS 1.0, 1.1, and 2.0.

Configuration • 128K bytes of RAM; one or more single or double-sided disk drives; compatible monochrome graphics or color monitors.

Current Version/Version Reviewed • Version 1.0/Version 1.0 was the test vehicle.

First Delivery • October 1983.

Number of Installations • information not available.

Comparable Products • Business Planning Tool is somewhat unique; in some fashions it competes with the features of VisiCalc, Multiplan, and Lotus; yet package complements rather than competes.

Optional Associated Software • vendor supplies the VisiCalc Real Estate Template and Peachtree Connection to bridge gap between Lotus 1-2-3 and Peachtree's General Ledger.

Price • \$195 retail price.

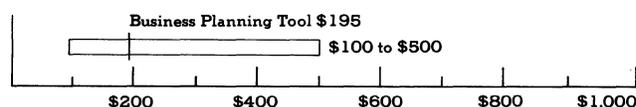
Vendor • Sofstar, Inc; 13935 U.S. Highway #1, Juno Square, Juno Beach, FL 33408 • 305-627-5511.

Canada • currently no Canadian headquarters or distributors.

■ ANALYSIS

Business Planning Tool is a powerful new form of decision support system. Following self-explanatory menu options, the user can develop complex business plans, including long-range forecasts based on current data, and project "what-if" assumptions to predict outcomes of alternate financial decisions. One of the most powerful adjuncts to Business Planning Tool is its ability to transfer its files to either Lotus, Multiplan, or VisiCalc programs. There are 2 basic reasons why one would want to do this. First, it is quite possible that other systems within an organization would not have, nor need, the functions of Business Planning Tool, yet may have the need for some of the data. Also, users of those other systems may wish to play their own "what-if" games on a particular spreadsheet package. The second, and possibly more important reason, is that Business Planning Tool provides very limited graphics capability.

PURCHASE PRICE RANGE Software Price Range



SOFSTAR BUSINESS PLANNING TOOL PRICING • open bar shows the typical range of prices for **FINANCIAL PLANNING** software used in corporate environment • the vertical line within the bar graph indicates the price of **BUSINESS PLANNING TOOL**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	████████████████████									
DOCUMENTATION	██									
FUNCTIONALITY	████████████████████████████████									
EASE OF USE	██									
SUPPORT	██									
SYSTEM INTERFACE	████████████████████████████████									
VENDOR EXPERIENCE	██									

*For an explanation of rating criteria, please refer to the Spreadsheet Features section in the Software Evaluations (805) report.

Business Planning Tool features an interactive graph screen, which can be used to visually display or "shape" account data to coincide with observed seasonal variations or business trends. One of the more outstanding features of the package is the Time Window feature, which provides the capability of projecting account data backward or forward—within a time span from 1940 to 2039—from the present date or other user-designated dates. This could be very useful in doing a historical analysis of a product, division, or company (or other type of organization) in preparation for acquisitions and the like.

□ Strengths

As a fully menu-driven package, Business Planning Tool is extremely easy to use, and brings powerful financial capabilities to those who require them but have not yet developed these talents. For those who are experienced financial planners, Business Planning Tool brings true time savings to their personal computers in the office. Business Planning Tool can get the job done in a short time instead of waiting perhaps 12 to 18 months for an important application to be programmed and put into a prioritized implementation schedule by MIS groups, or laboriously entering all of the needed formulae to spreadsheet packages, or worse yet, doing the calculations by hand.

Business Planning Tool uses color in a limited fashion for background. Colors available are blue, red, or black (the default color). Additionally, the package can be run at either IBM terminal speeds or at a faster minicomputer-based speed. The faster speed, however, causes distracting scan lines to float across the screen as new characters are entered. To the vendor's credit, this is pointed out early in the documentation. The recommendation is to decide whether a clear, crisp screen image is more important than the extra speed. Personally, the increase in speed was not significant enough for this reviewer to put up with the scan line problem, although many might disagree.



Sofstar, Inc Business Planning Tool Financial Planning Package

□ Limitations

It should be realized up-front that Business Planning Tool is neither a spreadsheet program, nor is it a full financial planning package. Business Planning Tool takes a complex set of tasks (i.e., income statement and balance sheet preparation) and simplifies it to simply answering prompts and moving through command menus.

A particular drawback of the Business Planning Tool is the severe absence of graphics output to go along with the screen display. While one can specify a printer device as the recipient of screen data, there are no escape sequences or device supports to allow printers or plotters to utilize built-in features.

Another limitation is the transfer of files to other programs the vendor claims are supported. While it is true that Lotus, Multiplan, and VisiCalc can accept Business Planning Tool files, it is necessary to rename them in VisiCalc terms, and then to run them through translation or transfer routines resident in the other programs. This generally calls for some advanced knowledge of the package to be transferred to.



■ HANDS-ON EVALUATION

Business Planning Tool has just recently been upgraded to run under DOS 2.0, and while the documentation issued includes reference to this, the installation of the disk still must be initiated under DOS 1.0 or 1.1. Sofstar is presently doing the disk initialization for its customers, such that all one need do upon placing the single system disk in Drive A is to type "BPT" to make it run. Without some fairly tricky maneuvering it is not currently possible to boot Business Planning Tool from a hard disk, although it can be copied onto the disk. As a result, it is necessary to use the program as an access to the program. Once done, however, it can be removed and the program run from the hard disk copy, leaving the A drive free for use as a backup drive for data or for quicker access to Lotus via its access system disk.

The first screen which comes up after booting the program is the main selection menu. At this point one can choose to alter the background color of the screen or move the terminal status to IBM speed or "Faster" mode. Faster mode allows the screen to be painted much quicker than possible with the IBM (normal or default) mode, but provides distracting scan lines on an IBM color monitor.

Moving through the menu selections is very easy to do, calling for a single key depression in most cases, except when one has entered into a workspace. In this situation, it is necessary to first enter a "/" followed by depression of the menu selection key. This is actually a precaution against accidentally entering a command prompt in place of data characters. The usage of the "/" key is also a good choice in that it is not a key in the normal movement area of a typist's fingers. This helps reduce the accidental movement and loss of data entries that could occur with the switch to command mode. It is also compatible with VisiCalc and Lotus user provisions.

Use of the worksheet is quite easy for simple financial

statement generation; comparatively easier than products from other software vendors. It is important to take time to read the documentation regarding output, especially with regard to the Template. Its use is not readily apparent, nor is it easy to discern for the first-time user. For those familiar with the use of VisiCalc or Lotus files, and the transfer or translation of them, it is no problem to understand or to execute the output template options.

□ User Interface

The Business Planning Tool user interface consists of single-character commands (which are invoked from menus) and option fields. Command summaries or option fields are displayed on the top 4 lines of the screen at all times, thus making reference to the documentation unnecessary except for particular situations.

Menus: 5 selections can be made from the main menu: Quit, Help, Screen (plus color or hardware, each with 2 choices), Output (for the printing, storing, or template conversion to VisiCalc format of files), and Workspace (to gain entry to edit, modify, and other commands). The menus operate totally on a hierarchical basis; one must go through successive exits or quits to change modes.

Control characters: None; the Escape key can be used for a one level backup when errors are made.

Function/special keys: None; the "/" is needed to precede the exiting of a work sheet prior to issuing command selections.

Command language: Business Planning Tool does not incorporate a command language; menu display command choices.

Positive feedback: Audible beeps sound when one makes an incorrect menu selection or other error.

Status display: Line 1 provides information on the current mode of activity, the time, and the amount of memory being used; line 2 is the command line, but is also used for informational messages when inside a worksheet or output menu; line 3 is reserved for detail information regarding summary messages on the above line; line 4 indicates the worksheet items, such as Account Name, Type, and Base; line 5 either begins the worksheet indicating the account type and column headings for months, totals, etc, or acts in output mode as the entry area for an action such as Select Drive C or Enter Template File Name.

Help facilities: HELP messages are accessible by typing "H" from the main menu, worksheet, and output menu; HELP messages, in terms of informational displays, are shown for every mode entered as part of the status display.

□ Environment

Although it is not normal, the Business Planning Tool presently arrives already installed for the IBM PC or PC/XT running under DOS 2.0. This is done only because the installation program has yet to be upgraded for usage with DOS 2.0. The other programs on the disk, as well as the documentation, have already been upgraded. Sofstar is now in the process of completing this upgrade and following that, it will again become the responsibility of the user to



Sofstar, Inc Business Planning Tool Financial Planning Package

install the DOS programs onto the diskette. Earlier versions of the Business Planning Tool were compatible with DOS 1.0 and 1.1 operating systems. Business Planning Tool is also made available with compatibility to the CP/M operating system for use on the Apple computers and their compatibles. Microcomputers compatible with the IBM PC that can run DOS, such as the Compaq, Hyperion, Eagle, and Columbia computers, are supported by Business Planning Tool.

Business Planning Tool is stored in RAM, once loaded. As a result, it does not operate significantly faster because of the presence of a hard disk. Some, however, would prefer to maintain software on hard disk simply for the sake of convenience. As mentioned, this is currently not possible without advanced manipulation.

□ Documentation

Business Planning Tool documentation is extremely well laid out. In a 3-ring binder the size of IBM documentation, the sections are separated by plastic index tabs. From front to back, the sections are: Introduction and Table of Contents, Start Up, Quick Run Through, Tutorials, Reference, and Commands.

Start Up contains information regarding installation and diskette backup, the customer hotline, starting the system, and a general discussion of the program's use with the IBM PC and DOS.

The Quick Run-Through section is essentially a whirlwind tour of Business Planning Tool, including booting the system, worksheet creation, statement preparation and manipulation, screen display and screen graphics display, printing a report, and an in-depth discussion of Business Planning Tool (who needs it, what it will do, how it differs and commands, error correction methods, templates, and printers and the Time Window feature).

The Tutorials section starts with the assumption that the user has skipped all earlier sections, as many do when first trying to jump a new program. It again presents the booting procedure, but refers one to earlier sections for information on installation of DOS onto the program disk. This section is presented in functional terms that guide the user gradually through more complex ways of using the package.

The Reference section provides sample documents that were created during the tutorial exercises, illustrating simple and more complex financial statements. It also shows a simple graph screen printout, another created after transfer to Lotus, and a sample VisiCalc Template. This is followed by a complete glossary of terms used within the documentation manual. Next comes a listing (with explanation) of error messages the program includes, and the section ends with a cross-referenced index of the manual.

The Commands section presents the names and functions of the commands in the order one may expect to encounter them in while using Business Planning Tool, and beside each is the section reference page number and the number of the command as it is presented within the tutorials or Quick Run Through sections. The documentation manual concludes with an even more detailed operational description of the commands, their fundamental concepts, how the

menus work, creation of accounts, output operations, worksheet design and editing features, printout options, and template creation and usage.

□ Functionality

Business Planning Tool is a forecasting and budgeting tool. It is designed to aid the user in the creation and/or modification of a financial model of a new venture or an existing business. Anything done in the Business Planning Tool can also be done by any reasonable spreadsheet package, but not as easily or as quickly. It was purposely designed to do only a few things well, which would otherwise consume a long period of time with concordant opportunity for errors.

The program supports the creation of financial models to accommodate income and expense accounts in the form of a Profit and Loss Statement, and allows the results to be displayed and analyzed in a comparative sense (any 2 months within a period), as long as both results are resident within the same file where 12 months of data is presented (this can be actual historical data of projected data), and for a given single month within a period in a file. These presentations also hold true for Balance Sheets, which can contain separate asset accounts and liability and equity accounts.

There is no need to prepare calculation rules in this program. This has already been done and included as a part of the package. The Business Planning Tool does provide on-screen graphics, which present the results of an analysis of any line item within a file. However the display translates onto paper via a printer with "\$" signs filling in the spaces to represent a bar graph. Decent business graphics can be obtained by transferring the file through the Template routines into some other, more suitable package.

□ Ease of Use

Once installed and booted, Business Planning Tool is very easy to use. Anyone remotely familiar with the use of a computer terminal can learn to use the package (at least to the level of a junior financial analyst specializing in the preparation of income statements and balance sheets). Since the program does not automatically recalculate values, it is easy for a new user to play "what-if" analyses without fear of becoming lost in the process. When the user has entered all of the changes to data variables required for a given scenario, the entry of the C(alc) command provides very rapid results.

The HELP menus provided by Business Planning Tool are quite to the point, and easily accessed by simply activating "H" from anywhere within the program, except when in a work space. At these times it is also necessary to first key in the "/" as indicated earlier. The nice thing about the HELP menus is that as informative as they are, they are rarely (if ever) needed after the user has spent more than a few hours with the package.

For a small businessperson or middle manager in a larger enterprise, Business Planning Tool is ideal for occasional use.



Sofstar, Inc Business Planning Tool Financial Planning Package

Obviously, for the larger accounting and financial departments of major organizations, the package would hold less appeal, but even then only if their applications are being met by MIS groups in a timely fashion. For those departments, especially, the learning curve will only be hampered by the speed with which they can assimilate the documentation tutorials and examples.

For most people, the entire package can be learned in less than 2 to 4 hours, and what is retained is probably 90% of what is required, just from that single run-through.

Support

In addition to the technical support available via a hotline service, Sofstar will provide new updates to a purchaser with a valid registration serial number for 6 months following purchase free of charge in exchange for the master disk. After this period, updates are available for the nominal fee of \$25 plus the master disk. The vendor provides 2 identical copies of the disk upon initial purchase, and for each subsequent update received.

System Interface

Business Planning Tool has its own internal format which is converted via the Template to other packages such as VisiCalc, Multiplan, and Lotus using VisiCalc format and translation facilities. It is also possible to create ASCII text file formats for output to word processing packages such as WordStar. This allows use of Business Planning Tool for the creation of statements which can be transferred to a larger spreadsheet program for comparative analysis, and to output to word processors for the purpose of including the file in an annual or quarterly report. Use of the more powerful text editing features of those packages can provide enhancements to the text, such as bold-facing, solid underlining, and the like.

Vendor Experience

The first Sofstar package, VisiCalc Real Estate Templates, was conceived by its president J. Michael Carlisle to meet his own business needs as a real estate broker. The Templates package was written by a real estate professional to address a practical business problem. Each of the other Sofstar packages, including Business Planning Tool, has grown from the same concept of business practicality, and a direct problem-solving approach. Business Planning Tool has been on the market since October 1983.

■ PRODUCT OVERVIEW

Terms & Support

Terms • Business Planning Tool is sold in some stores across the U.S., but at present distribution is sketchy; there is a Western region that is just getting the product out to the stores.

Support • customer support is supplied via a hot line which connects you to regional technical support groups; arrangements are also in effect with current dealers to provide support • it is necessary to fill in and return the owner registration card prior to receipt of support; the vendor also suggests that callers have their registration serial number handy when calling; this speeds up verification of authorization access to support.

Component Summary

Business Planning Tool is supplied on a single dual-sided diskette, and is accompanied by an identical backup copy. It is necessary to install DOS onto the original diskette to enable booting of the package, either through the control-alt-delete method, or via power up with the installed diskette in drive A. The diskette includes the executable file, menu files, the install program, and its own "autoexec.bat" file.

Business Planning Tool:

\$195 lcns

Computers & Operating Systems Supported

At present, Business Planning Tool is only available for the IBM Personal Computer, the XT, and compatibles which use DOS 1.0, 1.1, or 2.0. The vendor is mainly interested in this marketplace, but may get onto the Apple MacIntosh bandwagon later this year.

Minimum Operating Requirements

The minimum system requires 128K bytes of RAM, one or more (single- or double-sided) disk drives, and a monochrome or color monitor. The documentation also recommends the presence of a printer, but does not require it. Obviously, should one wish to use Business Planning Tool, it would be convenient for a printout of the financial reports to be generated.

Features

Command Type • single letter from list of menu items and subitems; commands may also be selected via a return (or enter) key depression of the highlighted choice.

Financial Functions Supported • Income and Expense Accounts, Net Profit, Asset Accounts, Liability and Equity Accounts, and Balance Sheets and Income Statements.

Command Structure • main menu contains selection commands for Worksheet, Output, Screen, HELP, and Quit; on a hierarchical basis, the worksheet commands include: edit, delete, reproduce, calculate, value formatting, file, zap (clears worksheet, but not memory), graph (with the mentioned limitations), trend, print, name, time (to change the time window), modify (for specific account components), post (used in conjunction with edit, modify, or move), HELP, and Quit.

Account Types • account types include I(tem) with values; H(eading) only, no values; U(nderline); R(epeating) for continuous symbols across a page; T(otal) and subtotal (ranges here allow for up to 6 sub-totals and one total for a given major account item; X (a non-totalling account); and A(ccumulating) item, used for adding a previous month's data to the current month (usable on balance sheets only).

Error Recovery • errors can be corrected by hitting the escape key which simply moves the progress of the program back one level, or by entering either edit or modify commands.

Output Commands • these include: S(ource), the file to output; D(irectory) of files on any disk (A,B,C,D); E(rase), a specified file; A(dress), to include or omit an address from a display or printed report; R(eport), activates menu selection for Income Statement or Balance Sheet or C(ombined) template Income Statement and Balance Sheet; F(ormat) historical, single month or comparative month-to-month analysis (on the same file only); C(alendar); V(alue), to set display formats for I(nTEGER) or W(IDTH); D(estination), to select report for P(rint) or T(ext) to disk file; L(ength) of page; W(IDTH) of page; S(etup) code for special printer print type; D(irectory) of files on drives; H(elp); and Q(uit) exit to main program menu.

Print Facilities • prints either Income Statement or a Balance Sheet in any of 3 formats: single month; comparative or any 2 specified months within the same file; and historical, meaning you select a starting and ending month for a 12-month period from any single file; reports can be printed with either dollars and cents or integer values; column widths may be altered, thus reducing the

LCNS: license fee.



Sofstar, Inc Business Planning Tool Financial Planning Package

printout accordingly; the printout is pre-set for a maximum of 80 characters, but can be down-sized.

File Transfer Capabilities • it is possible to output reports via the template in VisiCalc format or in ASCII text format for transfer to word processing systems; Business Planning Tool accepts both ASCII and VisiCalc formatted files.

Window Capabilities • no window facility is provided in the package, however it is easy to jump from one type of worksheet to another via the "Alt + Home" or "Alt + End" key combinations.

• END





Software Arts, Inc TK!Solver

Mathematical Modeling & Problem Solving Aid

■ PROFILE

Function • provide the numeric solutions to one or more algebraic equations through direct solution or iterative modeling; create graphic and tabular representation of data.

Computers/Operating Systems Supported • IBM PC and PC/XT using PC-DOS version 1.0 or later; PC-compatible systems using MS DOS.

Configuration • 96K bytes of RAM and one disk drive; additional memory to 256K bytes is utilized; additional floppy or hard disk drives are optional; an 80-column display is recommended but not required.

Current Version/Version Reviewed • 1.2/version TK-1 (2I) for PC-DOS and the IBM PC.

First Delivery • February 1983.

Number of Installations • information not available.

Comparable Products • no product to our knowledge in the micro market duplicates all of TK!Solver's functions; some of the packages statistical and financial operations can be performed by spreadsheets.

Optional Associated Software • TK!SolverPack provides financial management models.

Price • \$399 retail price.

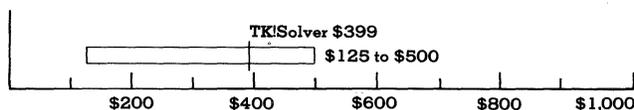
Vendor • Software Arts, Inc; 27 Mica Lane, Wellesley, MA 02181 • 617-431-6500.

■ ANALYSIS

TK!Solver is created by the same people that created VisiCalc, the original electronic spreadsheet package for microcomputers. In some ways the package resembles a more powerful electronic spreadsheet. Operation of the program is very similar to that of popular spreadsheet packages such as VisiCalc, with similar command structures, keyboard usage, and terminology. Functionally, however, TK!Solver more closely approximates a powerful programmable calculator. TK!Solver provides the capability of solving an algebraic equation for an unknown variable, or a system of algebraic equations for a number of unknowns. In addition, the package provides the capability of performing iterative modeling, in which the user provides a "guess" as to the correct answer and the program then solves the problem.

The documentation provided with TK!Solver is good, with a progressive tutorial section as well as a reference manual.

PURCHASE PRICE RANGE Software Price Range



SOFTWARE ARTS TKISOLVER PRICING • open bar shows the typical range of prices for **MATHEMATICAL MODELING** software used in a corporate environment • the vertical line within the bar graph indicates the price of **TKISOLVER**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	_____									
DOCUMENTATION	_____									
FUNCTIONALITY	_____									
EASE OF USE	_____									
SUPPORT	_____									
SYSTEM INTERFACE	_____									
EXPERIENCE OF VENDOR	_____									

*For an explanation of rating criteria, please refer to the Spreadsheet Features section in the Software Evaluations (805) report.

The manual goes beyond a simple description of how to use the package, providing enough information on the workings of mathematical modeling that a clearer understanding of the purpose and use of the program are obtainable. Used in conjunction with the financial management models available from Software Arts, the TK!SolverPack, numerous complex problems in financial analysis were made almost trivial. TK!Solver is also applicable to many engineering problems as well, particularly in mechanical engineering and architecture.

TK!Solver could still use more functional support, as well as more mathematical power. Some of the models provided in the TK!SolverPack, such as the calculation of compound interest, could be reduced to a functional level. More mathematical power would be nice for engineering applications, as complex variables, numeric integration, and statistical functions are not supported.

Any application requiring the use of a programmable calculator, or an applications calculator, is a potential application for TK!Solver. Particularly when a large number of equations or a significant amount of data are involved, TK!Solver may be the solution. Use of TK!Solver on problems requiring simple algebraic solutions could eliminate the need for custom applications programs.

Strengths

TK!Solver is very easy to use, anyone who finds the program necessary is more than capable of using it in a minimum of time. Command and screen formats resemble those of several popular electronic spreadsheet packages, making operation even easier for those experienced with such packages. This simplicity is enhanced by good documentation and a reasonably good Help function.

The iterative solution feature available with TK!Solver makes possible the solution of problems not easily solved with paper, pencil and calculator. The package can make quick work of vast amounts of data and systems requiring large numbers of equations, reducing the amount of time



Software Arts, Inc TK!Solver Mathematical Modeling & Problem Solving Aid

involved in solving complex problems as well as increasing the accuracy of the results. The applications packages available from Software Arts enhance the use of TK!Solver, providing well thought out, well documented models without the need for time consuming research and development.

Limitations

TK!Solver is definitely limited in utility. It is not an electronic spreadsheet package, nor is it a scientific programming language. Functional support is limited from the point of view of both economists and scientists. In addition, Software Arts seems inclined to treat their customers casually—a customer support phone number does not seem to be an overly demanding request.

Other limitations are relatively minor operational notes: the program fails to use the function keys on the IBM PC, and keypad usage is also inadequate. Software Arts also missed an opportunity to make use of the PC's extended character set—mathematical notation makes great use of the Greek characters included as a part of this set.



HANDS-ON EVALUATION

TK!Solver is tailored specifically for the IBM PC. This is evident at once as the procedures described for installation refer to IBM DOS commands and operations. The program is similar in concept and operation to an electronic spreadsheet, although the different orientation of the package makes it somewhat different from a traditional electronic spreadsheet such as VisiCalc. The documentation is well presented, and testers experienced in electronic spreadsheet operation had little difficulty gaining familiarity with the package.

The types of problems that TK!Solver is designed to solve are technical in nature, so less academically oriented staff members were not impressed with the package. The staff members who felt the need for more functionality in a traditional electronic spreadsheet were more satisfied with the functions presented by this package. Some members of the accounting department quickly adapted to the TK!Solver format, and began using the program to solve problems in compound interest and debt service. While the package resembles an electronic spreadsheet package in format and presentation, the functions provided and the way they are used most closely resemble a powerful scientific or financial calculator.

Use of the package is enhanced through the use of the TK!SolverPack, a package containing mathematical models for use with TK!Solver. TK!SolverPacks are available for financial management, mechanical engineering, building design, and basic science. The one we tested was the financial management pack. The TK!Solver fans on the staff were overjoyed with this combination, and spent a lot of time finding applications and uses for all the models in the TK!Solver pack.

User Interface

Menus: Menus are provided to control some functions

which are applicable to a menu-driven format. Two examples are the global parameters menu, which controls many operational aspects of the program from selecting redisplay and iteration options to page sizes for printer output, and the plot menu, which allows selection of options for plotting an x-y coordinate graph.

Control Characters: None.

Functions/Special Keys: None.

Command Language: None.

Positive Feedback: All potentially destructive commands require verification before the command will be performed. This usually takes the form of a prompt requiring a yes/no response.

Status Display: The 2 top lines of the display are dedicated to status information. The top line is the status line, and information is provided about the currently selected "sheet" (variable, unit, rule, etc), memory remaining, and the current state of the model, i.e., solved or unsolved. Also displayed on this line is the contents of the current cursor position when the cursor is in a "sheet." The second line is the prompt/error line, command prompts and error messages are displayed here.

Help Facilities: An online Help facility is available from the command level; Help screens are topic selectable. Provided in the documentation is a pocket reference guide, and a large multicolor poster depicting the TK!Solver commands.

Environment

TK!Solver is not overly constrained environmentally. The minimum memory requirement of 96K bytes of RAM are not too severe, and operation is possible on a single-disk system, albeit with a certain amount of diskette swapping. Additional memory is utilized to a maximum of 256K bytes. Additional floppy or hard disk drives are supported, and the overlay portions of the program may be copied to hard disk to minimize floppy disk access. Unfortunately, the entire program may not be installed on hard disk as the distribution diskettes are copy protected. File size is limited on single disk systems by the necessity of copying program overlay files to the data diskettes, this will be a significant problem on older systems equipped with single-sided drives. Both 40- and 80-column displays are supported, but an 80-column display is recommended.

Documentation

The documentation for TK!Solver consists of a tutorial/reference manual, an introductory guide, and a pocket reference guide. Also included is a large 22-inch x 34-inch multicolor poster depicting the TK!Solver commands (suitable for framing). The latter, when hung at the workstation employing the package, did actually provide some small assistance in operation during the initial learning curve period, as well as providing assistance to the occasional user.

The tutorial section of the manual is generally very good. The style of the document bears a not so surprising



Software Arts, Inc TK!Solver Mathematical Modeling & Problem Solving Aid

resemblance to that of VisiCalc. Illustrations abound, and the examples are usually simple enough to understand while still illustrating the point in question. There are some sections where the tutorial lapses into college lecture mode, sending the average user into a confused daze. We found one of our testers sound asleep at the console while attempting one particularly difficult passage. Testers with little mathematical experience tended to avoid the more technical sections of the tutorial. Technically oriented staff members that were able to understand the more complicated sections felt that those sections were necessary for full understanding of the package.

The reference manual is also generally very good. It is divided into ten sections, with the features of the program clearly divided between the sections. Information concerning almost every aspect of the operation of TK!Solver is easily found, though in some cases the descriptions of command and function usage tends to be a little sparse. The manual contains both glossary and index as well as appendices containing descriptions of the files used by TK!Solver, and an alphabetical error message list. Technically oriented users found the reference manual quite adequate; non-technical personnel were not able to gain much benefit from the reference manual and preferred the tutorial.

The pocket reference guide contains more information than just the usual command parameter list. Also contained on the card are descriptions of the eight "sheets" that form the logical structure of the program. These are illustrated with screen images and include examples as well. The pocket guide also contains a list of functions that includes examples. Technically oriented types used TK!Solver quite successfully by referencing this card, after a quick review of the tutorial manual. Others tended to use the card only as a refresher, relying on the more complete descriptions that were available in the manual.

□ **Functionality**

While TK!Solver resembles an electronic spreadsheet in appearance, functionally it resembles a high-powered programmable scientific or financial calculator. The program is divided into eight functional blocks, each block is represented by a data entry screen, or "sheets." (The terminology used by Software Arts is oriented towards a user familiar with electronic spreadsheet usage.) These "sheets" are used to define the models to be solved, and to specify user functions, define tables and plot data.

Movement through the sheets is performed with the cursor control keys on the right side of the keyboard. Status information is displayed on the top of the screen as each field is entered, the type of information displayed varies depending on the screen and field. Any two of the sheets may be viewed simultaneously using the dual window feature, particularly helpful when merging two or more existing models. Commands exist for blanking, copying, moving to a field, and editing a field. A "row" may be deleted or moved, allowing an entire variable description or formula to be operated on. Command format is similar to that of many popular electronic spreadsheets. The cursor movement and row manipulation capabilities are less than

those available in most spreadsheets, but the way in which data is organized and the division of functions between the various sheets make any extra capacity redundant. No one felt the need for additional cursor control.

The "global sheet" is used to set parameters dealing with TK!Solver operation. These parameters deal with three areas of program operation. One area dealt with is printer formatting: parameters controlling page length and width, left margin offset, page breaks and page numbering are set here. Printer setup strings may be specified, and output may be optionally "printed" to the disk by specifying the output filename on this sheet.

Also entered on this sheet are the parameters that control iterative modeling. Iteration may be automatic, whereby the program supplies approximate values for each successive calculation, or iteration may be controlled manually. Intermediate values may be displayed or not, as desired. The maximum number of iterations to be performed on a model may be specified on this sheet, if the default value of ten is undesirable. Two parameters are related to value comparison: the point at which two numbers are assumed equal may be specified, as well as the point at which a number is assumed to be zero.

One additional parameter is related to operation: when a formula is entered on the "rule sheet" the variables that make up the formula may be automatically entered on the "variable sheet" if desired. We found that the ability to disable automatic variable entry facilitated developing models in pieces, and later combining them.

The formulas used by TK!Solver are made up of symbolic variables, constants, and functions. The variables are defined on a "variable sheet." This sheet is used to set the input and units of a variable. Variables are referenced by name in TK!Solver. A new variable may be created by entering its name on the variable sheet or by referencing it in a formula with automatic variable entry turned "on." A variable name may also be associated with a list of values, or may be used as a guess in an iterative model. The value of a variable may be displayed in a different unit of measure than the one used for calculation.

Unit conversions are specified on the "units sheet." This sheet is used to set the conversion factor and offset between units of measure, unit names, conversion factors and offsets are all user specified values. Unit conversions may be "nested" four deep: for instance miles may be converted to rods, rods to yards, yards to feet, and feet to inches. Inches could not then be converted to millimeters, however, as this would be a fifth level of conversion. This limitation may be circumvented by relating all the units to one "central" unit: miles, rods, yards, inches, and millimeters all converted to feet for instance. The sheet also has provision for a comment, although the length of the comment, and the length of the variable name, are both limited.

The heart of TK!Solver is the "rule sheet." This sheet contains the formulas that TK!Solver will operate on. Most sets of algebraic equations can be solved using TK!Solver. There are limitations to the package, however. Complex numbers are not supported by TK!Solver, a fact which can limit its applications in some areas of engineering. Matrix



Software Arts, Inc TK!Solver Mathematical Modeling & Problem Solving Aid

operations are not supported either, and the application of numeric integration techniques would be difficult in all but the simplest of cases. A good range of trigonometric functions are available, including hyperbolic; and of course log and natural log are supported. Arithmetic functions available are similar in number and scope to the more capable spreadsheet packages. Additional functions include dot product, net present value, evaluate a polynomial, find the sign of a number, and sum a series. Functions are also provided to allow a variable to be supplied with a list of values. List support includes such functions as one to provide the number of the current list element. User functions may be defined with the "user function sheet," while this feature is somewhat limited in scope, additional equations can always be entered into a model to provide intermediate values in a calculation.

TK!Solver allows a variable to be defined as a list. This feature may be used to provide a series of values to a model for evaluation, or to record a series of values to a model for evaluation, or to record a series of results for a particular variable. Two other capabilities of the package are related to this list making ability. Files from electronic spreadsheet packages such as VisiCalc, which have been created in the DIF file format, may be used as input to a list variable. Lists may also be written as a DIF file for inclusion in a spreadsheet. Another list related function is the creation of tabular displays. Data that is contained in a list may be displayed in tabular form to either screen or printer through the use of the "table sheet."

Once again, non-technical personnel felt that there was little difference between this package's capabilities and those of a conventional electronic spreadsheet, while the technical personnel took the opposite view. Their impression was that, if a good calculator was insufficient to deal with a problem, either because the amount of data involved was too great, or the number of equations involved made the problem too tedious, then TK!Solver was definitely the answer. The iterative capabilities of TK!Solver also allow the solution of problems that would otherwise require custom software. More complicated programs requiring powerful functional support were felt to be beyond the capabilities of the package. Cyclic calculations and Monte Carlo type simulations are also beyond the capabilities of the package, our technical specialist was quite disappointed in the lack of complex variable support, making an electronic circuit simulation somewhat difficult. Functional support is particularly limited in the area of financial calculation, the accounting staff felt that some of the more common usages such as compound interest calculations could be supported functionally. These shortcomings are alleviated somewhat by the TK!SolverPack for financial management, which provides thirteen models on disk and ready for use. Other TK!SolverPacks are available for applications in mechanical engineering, building design and construction, and basic science as well.

Ease of Use

Given the types of problems that TK!Solver is intended for, it is quite simple to use. In fact, some of our testers found it less difficult to use than VisiCalc, while no one thought it more

difficult to operate than the spreadsheet package. Use of the package to solve complicated problems involving the direct solution of many equations and variables is quite straightforward, easier in most cases than using a calculator such as the HP-85. Use of the more advanced features such as variable lists and iterative models requires some experience with the package, but still does not present any great difficulty.

The documentation was well received by most of the staff, although some personnel found functions of the tutorial to be heavy going. Operation of the package is straightforward; the commands and displays resemble those of VisiCalc which helped our testers gain familiarity quickly. The amount of command prompting is fairly good, with prompting for fields where required. No disk directory option is available during save and load operations, which caused some complaint among the staff members. This is more an annoyance than a problem, but the type of people who found the package most useful were only occasional users of the system and consequently less used to dealing with the minor difficulties that can crop up. Fields and options are well documented on the various input sheets, and most sheets have a provision for including comments, simplifying both development and use of a model. A Help function is available, but seemed to be of little value. The Help explanations tended to wander from the subject at hand and often failed to provide more information than the pocket guide.

Another minor complaint we received from a majority of the staff was about function key usage, or rather the lack of it. Inexplicably, the function keys on the IBM keyboard are totally ignored. While again a minor problem, use of the function keys could simplify operation from the point of view of the occasional user. In order to gain acceptance, a package like this must offer both convenience and enhanced functionality when compared to programmable and applications specific calculators. Use of the function keys would help in this area. Another key that was apparently forgotten was the delete key. While the backspace key performs a backspace and delete function as expected, the delete key is ignored. Most testers felt that compatibility with existing packages such as electronic spreadsheet packages was less important than convenience of operation. Something suggested by our technical specialist was support for the IBM PC extended character set—particularly in view of the fact that the Greek characters in the set are traditionally used in mathematical notation.

We used the package in two different types of applications, both financial and scientific in nature, and both groups of testers were generally satisfied with the package. Both groups felt that the package could have offered more functionality in their particular areas of interest, with the technical types decrying the lack of complex variables support while the financiers felt that some of the more common uses of the package could have been implemented as functions. This argument was dulled somewhat by the inclusion of the TK!SolverPack for financial analysis in the evaluation, since this provided 13 different financial models in ready to use form. The diskette on which the



Software Arts, Inc TK!Solver Mathematical Modeling & Problem Solving Aid

TK!SolverPack is supplied is not copy protected, and the models can be modified if desired.

Support

No telephone number is provided for customer support in the documentation accompanying TK!Solver; in fact no phone number is provided for the company at all. The introduction to the reference manual obliquely refers to "additional support" that is available to registered users of the package. Also included with registration, which is accomplished by returning the warranty card, is a free copy of the TK!Solver user's journal, TK!Satn. Also provided is an official Software Arts TK!Solver baseball cap—a useful item in any corporate environment.

After obtaining the phone number for Software Arts, we attempted two calls, both during normal business hours. On the first call, we were informed that the day was a state holiday, and that the office was closed. We called again just after lunch the following day, and were connected to the receptionist in the customer support department. She promised that someone would return the call later, but no return call was forthcoming.

System Interface

Little or no information is provided on the file structures used by TK!Solver. The appendix includes a vague description of the files created by the package, but no details on the structure of them. Not surprisingly, the DIF file structure is supported by TK!Solver (since Software Arts developed it), but even here there is no structure information. DIF format files may be used as input to list variables, or a list variable may be written to a DIF file for use with another program.

Vendor Experience

Software Arts developed the original electronic spreadsheet package, VisiCalc. They did not publish the package, however, the rights to the package being taken by VisiCorp. Software Arts also developed the DIF file structure, a standardized file format used to transfer data between applications programs. TK!Solver is a relatively recent addition and is Software Arts' first attempt at mass marketing a product.

■ PRODUCT OVERVIEW

Terms & Support

Terms • TK!Solver is available for purchase only from Software Arts, computer dealers, and software retailers through the U.S.; recent advertisements indicate that substantial discounts may be available.

Support • telephone hot-line available; and technical notes are sent to users.

Component Summary

Software elements for TK!Solver include the following: TK.COM, TK.OVL—program and program overlay files containing the

LCNS: license fee.

TK!Solver program; TK.HLP—a file containing the TK!Solver help displays; INSTRCUT.BAT—a batch stream for moving the TK!Solver overlay and Help files to another disk; also provided are eight sample models which are used in conjunction with the tutorial manual; all of the above files are provided on two diskettes, thus providing a backup copy.

TK!Solver Package:

\$299 lcns

Computers & Operating Systems Supported

TK!Solver runs on the IBM PC and PC/XT using PC-DOS version 1.0 or later. It also runs on PC-compatible systems using MS-DOS.

Minimum Operating Requirements

Minimum memory required is 96K bytes; additional memory to 256K can be used. One disk drive is required, and an additional floppy or hard disk is optional. Both a 40- and 80-column display are supported but the 80-column display is recommended.

Features

Size Limitations • the size and complexity of a problem that may be solved by TK!SOLVER is limited only by system memory; minimum memory configurations of 96K bytes of RAM provide 34K bytes for problem definition; the maximum configuration of 256K bytes of RAM allows problems to grow to 194K bytes in size.

Financial Functions Provided • a function is provided to calculate the Net Present Value (NPV) of a series of cash flow values.

Statistical Functions Provided • none.

Mathematics Functions Provided • provided are the standard and hyperbolic trigonometric functions, log and natural log, absolute value, modulus, maximum value, minimum value, sum and count of a series, dot product, and square root; also provided is a function to calculate the value of a polynomial with given coefficients.

Engineering & Scientific Functions Provided • none.

Support for User-Defined Functions • a limited capability for table-driven user defined functions is provided.

Variable Reference • variables are referenced by name; lists of variables may be created and referenced by list name, functions are provided to process lists of values.

Mathematical Capabilities • the program provides the capability of solving sets of algebraic equations; also provided is an automatic iterative modeling feature; no support for matrix operations, numeric integration, or complex variables is provided.

Print Facilities • the TK!SOLVER program is functionally divided into 11 "sheets" dealing with different aspects of problem solution; each of these sheets may be printed in whole or part; output may be printer or disk.

Load/Save Facilities • all or part of a model may be saved or loaded; variable lists may also be loaded and saved in the DIF file format, providing a degree of data interchangeability with some common electronic spreadsheet program.

Other Facilities

TK!SolverPack is also provided by Software Arts. This package provides 13 different financial models that can be used in conjunction with TK!Solver.

TK!SolverPack:

\$100 lcns

• END



Software Publishing Corp pfs:File Data Management Package

■ PROFILE

Function • database management.

Computers/Operating Systems Supported • IBM Personal Computer, PC/XT, personal computers using MS-DOS, Compaq Computer, and other IBM-compatible systems.

Configuration • 128K bytes of RAM, 2 single-sided or double-sided disk drives, hard disk of at least 2M-byte capacity also supported • monochrome display or color/graphics board and 80-column monitor • operating system required is DOS 2.0 or less or the equivalent MS-DOS • only 64K bytes of RAM is required for DOS 1.1 and less.

Current Version/Version Reviewed • version A:00/not specified on diskette.

First Delivery • September 1980.

Number of Installations • 300,000 copies of pfs:File, pfs:Report, pfs:Graph, and pfs:Write combined.

Comparable Products • VisiCorp VisiFile, Ashton-Tate dBase II, MicroPro ReportStar.

Optional Associated Software • psf:Report is optionally available at a nearly identical price and can be used to augment the reporting capability of pfs:File.

Price • \$140 retail price.

Vendor • Software Publishing Corporation; 1901 Landings Drive, Mountain View, CA 94043 • 415-962-0191.

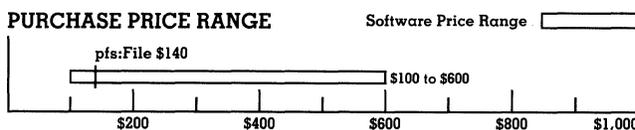
■ ANALYSIS

pfs:File is a menu-driven database management system which operates on the principle that data is linked to forms. The user is required to create a form with which to input and update the data. The form can contain prompts and titles; it can extend for multiple screens; but currently, no input editing is supported.

It provides an easy-to-learn method for creating a database at a price low enough that most corporations will have little trouble in justifying its purchase; however, it contains insufficient functionality to be considered a serious entry in the corporate database management system arena. It provides the user with a viable access method, but lacks sufficient support operations to make even its low price attractive.

The minimal reporting capability of this product contributes to its unattractiveness even at the low price. Software

PURCHASE PRICE RANGE



SOFTWARE PUBLISHING CORP PFS:FILE PRICING • open bar shows the typical range of prices for DATA MANAGEMENT software used in a corporate environment • the vertical line within the bar graph indicates the price of pfs:File, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	_____									
DOCUMENTATION	_____									
FUNCTIONALITY	_____									
EASE OF USE	_____									
SUPPORT	_____									
SYSTEM INTERFACE	_____									
EXPERIENCE OF VENDOR	_____									

*For an explanation of rating criteria, please refer to the Data Management Features section in the Software Evaluations (805) report.

Publishing has recognized the deficiency and produced a second package, pfs:Report, the sole purpose of which is to augment the reporting capability. This "option" is available at a cost almost equivalent to the purchase price of pfs:File. One method of achieving additional functionality would be for Software Publishing Corporation to bundle it with some of their other products, especially pfs:Report and pfs:Graph. The corporate user will find that, without any additional support, pfs:File falls short especially in providing adequate reporting.

pfs:File does provide an easy-to-use database management system, and as usual, Software Publishing Corporation has provided clear, illustrated documentation. While we do not believe that this product contains sufficient features to make it attractive in the large corporate environment, it may be that smaller corporations and businesses will find the program acceptable at the price.

□ Strengths

We found pfs:File easy to learn and use. The documentation provided contained sufficient illustrations and examples to lead the user through each of the functions of the program, regardless of experience in the field of computers. The limited number of options available meant that our technical and secretarial staff were able to use the product with minimal reference to the manual after a short learning curve.

Indeed, if ease of use alone is the primary consideration for a database management system, then this product would be a strong candidate. We found that no one on our staff had any difficulty in working through the tutorial portions of the manual to produce a file.

□ Limitations

The most glaring deficiency in this product is the limited report capability. The user is able to create rudimentary reports with the facilities provided by the system. In fact,



Software Publishing Corp pfs:File Data Management Package

such reports as may be easily produced, would be helpful in verifying the accuracy of the input, but the serious corporate user will want to produce reports which greatly transcend the included reporting functions. Software Publishing Corporation does produce a product, pfs:Report, which would partly offset this deficiency; however, they market it separately and **make no mention of it within the pfs:File** documentation.

The colon ":" is used as the character which signifies the beginning of a field where data is to be keyed in the forms design step. This precludes the user from placing a time stamp on the form in the heading portion. It does not disturb the display, but it does cause a problem with the print. Evidently, the reverse video (black letters on a white background) colon ":" is sensed to mean the beginning of a display field by the print portion of the program. It picks up the hours but does not print either the minutes or the first input field heading when the time stamp is placed as the last heading field. This situation can, of course, be avoided by removing the colon from the time stamp at design time.

The program does not provide an end-of-screen indicator. Therefore, the user is allowed to enter data beyond the end of the form! The careful designer can avoid this problem by placing a character in the lower right-hand corner of the display screen—this will cause the lower portion to become a blank heading which cannot be written upon.

No editing of input data is performed. Even reasonability checks for dates are conspicuous by their absence. In the documentation, it is recommended that dates be stored in YY/MM/DD format, but no means of enforcement is provided and, while the form designer may be able to place a prompt of the desired format above the field if there is sufficient room, a report needs to be run to verify the input.

■ HANDS-ON EVALUATION



We found that we were frustrated in our attempts to accomplish any except the most rudimentary operations with this product.

First, the product is drive-specific and won't run except on the "A" drive of a floppy disk system. (Our technicians informed us that the program will run on the "B" drive if the spare copy of the package resides on the "A" drive; however, they recommended that the program be executed from the "A" drive to avoid potential problems.) Note: We tested using a 128K-byte RAM IBM PC with two floppy disk drives.

Second, once we were up and running, we found that the documentation was unclear in defining the exact specifications for building the form. They neglected to mention that the entry space for one field continues until the next non-blank character and that you can key data into any unhighlighted portion of the form, even if it was after the logical end of the form. The user should define the form to use all available space. We found an asterisk in the lower right-hand corner to be sufficient.

Third, we were disappointed at the lack of any significant editing of data. We had hoped to find some data reason-

ability checking at least. The lack of edit checking meant that we were required to produce a complete listing of the file which was reviewed by someone other than the individual(s) who performed the actual keying. This was the only way we had of catching errors of transposition and format.

Further, once we had entered our data, we were again disappointed at the lack of sophistication of the print capabilities. We found the ability to sort on only 10 characters a distinct disadvantage.

In general, we were disappointed in all except the mechanics of operation and the documentation of this product. We found the lack of adequate editing capabilities in input and output functions to be a serious flaw in the overall design of the product.

□ User Interface

pfs:File uses menus to control its functional flow. It also employs function keys for special features within each functional area. The overall effect is a user friendly, simple database environment based upon the creation and filling out of forms.

Menus: The functional flow of this product is controlled exclusively through menus. The main menu offers paths to design a form, add information to a file via a form, copy a file, search or update records on a file, print a file, remove a form, and return to the operating system. Secondary menus are present for some functions. No short cuts between secondary menu functions are supported and, indeed, none are necessary.

Control characters: Ctrl + Home erases the current page while in the design phase. No other control character sequences are supported.

Function/special keys: Certain function keys are active for selected operations. When available, a description of the key and the function which it performs is displayed on the screen. The F10 key is generally used to signal that a command is to be accepted; this deviation from the standard practice of using RETURN can cause confusion.

Command language: None.

Positive feedback: When a potentially destructive operation is chosen, the user is required to confirm the selection. The "Remove" option which erases a form is such an option.

Status display: The lower portion of the screen is used to display prompts and to describe function key operations. In addition, if any prompted input is required, it will appear in this area.

Help facilities: None.

□ Environment

pfs:File will run on a 64K-byte RAM system utilizing a single-sided disk drive with DOS version 1.1 or earlier. They recommend, however, that 2 disk drives be used because 2 of their functions, Copy and Change Design,



Software Publishing Corp pfs:File Data Management Package

will not work without them. DOS 2.0 requires at least 128K bytes of RAM to run. More memory space does not seem to affect the operation of the programs although the sort may work more quickly on large files.

pfs:File initially allocates 128/128-byte blocks for any file. When space is used up, additional 64/128-byte blocks are added to the file. Software Publishing Corporation recommends that a single file be placed on a diskette which will allow for approximately 1,100 records on a single-sided diskette (160K bytes) or twice that number on a double-sided diskette.

We tested using an IBM PC with 128K bytes of RAM with two disk drives. We also used the color/graphics board with a Princeton Graphics System monitor. Our printer on this system is an Okidata Microline 92.

The product is copy-protected, a fact which defeats any attempt to optimize the disk usage.

Documentation

The documentation for pfs:File is composed of a single spiral-bound manual which serves as both tutorial and reference manual. The choice of words and explicit illustrations clearly indicate that the manual is geared for the computer novice, but these features are also helpful to the accomplished veteran.

The material in the manual is presented by major function in the same order in which they appear on the main menu screen. The reader is taken on a tour of the pfs:File facilities in the same order as he or she would be likely to use them.

Also included, but as a separate flyer, is an Installation Guide. It lists the computer configurations and provides step-by-step instructions for installing the product on a hard disk.

Functionality

Our staff took a little time in getting used to the idiosyncrasies of pfs:File. We attempted to enter a database which would hold our program inventory. We spent at least 3 iterations in designing the screen as we wanted it. First, we input all of our date fields with editing (perhaps we have too much computer education and want too much) and displayed the form. We found that each field's entry area begins after a semicolon (mentioned in the manual) and ends at the next non-blank character (not mentioned in the manual). We also found that there is no way to control the color on the monitor. White on black is fairly easy on the eyes, but the black-on-white of the forms was far too bright.

Our second try was better. We eliminated all thoughts of edited input and added "*" as the ending boundary for each field if necessary. We also right-adjusted our titles to give the form a more professional look. (We could have kept our left adjustment and aligned the colons.) One more try and we got it. We indented our form top and right (the titles had a tendency to blend in with the black surrounding the reverse video form). We added an extra line at the

bottom of the form for the same reason and finally began to enter our data.

Entering data in pfs:File can be accomplished in 1 of 2 modes, either "add" or "search/update." For our initial file building we chose the "add" option. We found that in general the forms were easy to use, but they had their little quirks. The initial cursor position was placed in the second position of the first field which required that we either backspace 1 position or add 1 position to the length of the field. Based on the suggestions of form design provided in the manual, we added the position. We also found that using the "tab" key to move through the fields on the form also had this effect, whereas the "return" key moved to the true first position.

We decided that each form we created would contain a date/time stamp which would assist us in maintaining control over our forms (file) inventory. pfs:File provides the date in their suggested format, YY/MM/DD, by entering the F5 function key. They also provide the time in HH:MM format as F6. We included both on the form. We experienced no difficulty with the display of the form; however, when we printed the form, the colon in the time was treated as a field identifier and we lost the minutes **and** our first heading.

pfs:File offers selectivity in the retrieval of information by providing a testing capability. These tests consist of "is equal to," "is greater than," or "is less than." In addition, the user may change the sense of the test by adding a "not" condition to the test. The tests are implemented on a character-by-character basis, but "wild card" characters which hold a place in the test character string without being tested themselves, may be employed. For example, if we were to search on surname, we might wish to set up our search string as "Johns@n" (the @ is the wild card) to get Johnson and Johnson. They also provide a second feature useful in searching, called the "don't care" symbol. By placing this symbol, actually two consecutive periods, within the search criteria, the user is able to search for particular character strings anywhere within the field. An example of this would be "..PFS:". This would match any word which had "PFS:" anywhere within it. These two features, the "wild card" and the "don't care," coupled with the basic tests supplied, provide a powerful tool for the selective retrieval of data. It is unfortunate that they did not think it worthwhile to supply a sorting capability with retrieval as they did with printing. In retrieval, the order seems to be LIFO (last in, first out).

We found the printing function provided with pfs:File to be adequate only for simple extract reports. They provide a 3-phased approach to printing which we found cumbersome. First, the user is required to provide the selectivity of the data; then, on a second screen, the user must provide the general print options, lines per page, etc; and finally, the user must specify the field (actually, only the first 10 characters) on which the field is to be sorted, whether or not an item is to be printed and, if it is, whether or not to advance a line (if not, skip 2 spaces). Upon completion of printing, a screen with the number of forms printed is displayed.



Software Publishing Corp pfs:File Data Management Package

The editing and data validations of this program are minimal. For instance; pfs:File recommends that dates be input in YY/MM/DD sequence for sorting purposes, but provides no input editing on any field except for number of characters, then it beeps when the last position of a field is filled in. After the beep, you have to enter a carriage return or the tab key to get to the next field. There is no way to ensure that the date is entered in the proper sequence. Our technical staff postulated that Software Publishing had more faith in us than we had in ourselves.

Ease of Use

pfs:File only possesses 7 functions which are selected from its main menu and, while no one on our staff had any difficulty in following the directions included, it would be inaccurate for us to say that this package is easy for the corporate user to create and report upon a standard business function. Our experience has been that each facet of a corporate organization will view the same data from a slightly different vantage point and want to have their reports reflect that view. This is not feasible with pfs:File alone.

Software Publishing provides several examples of applications which the package can support, among those being invoice, customer lists, patient records, personnel records, and phone messages. Of these, only the customer list seems to be of significance, perhaps to a salesperson and then only if equipped with a portable computer. All of the other suggested uses either have already been implemented on mainframes or require reporting well beyond the capabilities of this product or, as in the case of phone messages, require networking to make them effective.

We also found no references on how to enter data from another file. All references to input imply keyed input. Insufficient details on the method of storage are supplied to give adequate specification for interfacing and, while we do not doubt that most corporations have a technical staff able to overcome this obstacle, it seems to us that it should not be necessary.

pfs:File also contains a program not selectable from the main menu. It is called "PRINTER" and is provided to send special characters to the printer for the purpose of changing spacing, etc. Clearly, Software Publishing Corporation has acknowledged the paucity of its output capacity.

We found the choice of display format utilizing reverse video characters to delineate the fixed portions of the form to be very hard on the eyes for prolonged use. We attempted to change the color (black on white) for something more soothing, but pfs:File initializes the display screen which resets all of the colors; pfs:File does not offer any choice of color even when using a color monitor.

Support

We thought that we would mention our colon problem (where the time stamp appeared correctly in the display, but caused the loss of data on the report) to the people at Software Publishing Corporation to see if this was a known problem.

We carefully read through the documentation under support policy and found no mention of where to send questions or what number to call for technical support. It does require that the user Group Enrollment Card be filled in as a prerequisite to participation in their support service.

We finally looked up Mountain View, California in an Atlas, found it to be in the Oakland—San Francisco area, and called information for their number. We were not able to find a solution.

System Interface

pfs:File is a standalone product. It makes no references to any other programs except to the operating system, DOS. This seems somewhat strange because other Software Publishing Corporation products such as pfs:Graph and especially pfs:Report provide much needed facilities for it.

pfs:File stores its data in its own format; thus, any outside vendor would probably find that the time necessary to investigate and decode the data structure would not be economical.

Vendor Experience

Software Publishing Corporation has been primarily a supplier to the smaller user. Their IBM PC products have given them some exposure into the world of the corporate user, but their experience is still in its infancy.

■ PRODUCT OVERVIEW

Terms & Support

Terms • pfs:File is available for purchase only from Software Publishing Corporation, through computer dealers, software dealers, and mail-order firms throughout the United States • no specifics of international distribution are provided • the retail price of the program is \$140.

Support • no telephone hot-line number is provided; user enrollment card must be returned to vendor for support service participation, presumably by mail.

Component Summary

Software elements consists of the following programs: FILE, INSTALL, HARDDISK, SETUP, and PRINTER. The FILE program is the database management program; it creates and maintains data by use of forms. The INSTALL program is a batch procedure provided to install IBM DOS on the program diskette; applicable to the IBM PC and compatible systems. HARDDISK is a program to install pfs:File on a hard disk. The disk must be at least 2 megabytes large. It may only be used 5 times. SETUP is a program to set up a serial printer or to change the default work drive. The PRINTER program allows special characters to be sent to the printer.

pfs:File:

\$140 lcns

Computers & Operating Systems Supported

pfs:File is supported for the IBM PC, PC/XT, Compaq, and other IBM PC-compatible systems using MS-DOS.

Minimum Operating Requirements

Requires only 64K bytes of RAM and 1 single-sided disk drive if DOS 1.1 or less is used. Recommended for DOS 2.0 or equivalent

LCNS: license fee.



Software Publishing Corp pfs:File Data Management Package

MS-DOS is 128K bytes of RAM, 2 disk drives, and monochrome display or color graphics board and 80-column monitor.

Features

Record Size Limitations • pfs:File employs a variable record structure utilizing 128 character blocks for storing control information and data; a form (record) may consist of up to 32 pages (screens) of information; a page will hold up to 100 items.

File Size Limitations • 1,100 pages will fit on a standard single-sided disk, 2,200 data blocks on a double-sided disk; files of up to 4M bytes are supported on hard disk.

Field Size Limitations • an item must fit on a screen.

Key Field Limitations • the first item in a form is treated as a key; indexed retrieval is performed on it; all other items are retrieved via a sequential search.

Screen Format Description • forms design is handled via the DESIGN FILE selection on the main menu; date and time are available via function keys; user is given a blank screen on which to create a form.

Entry Edit Capabilities • none.

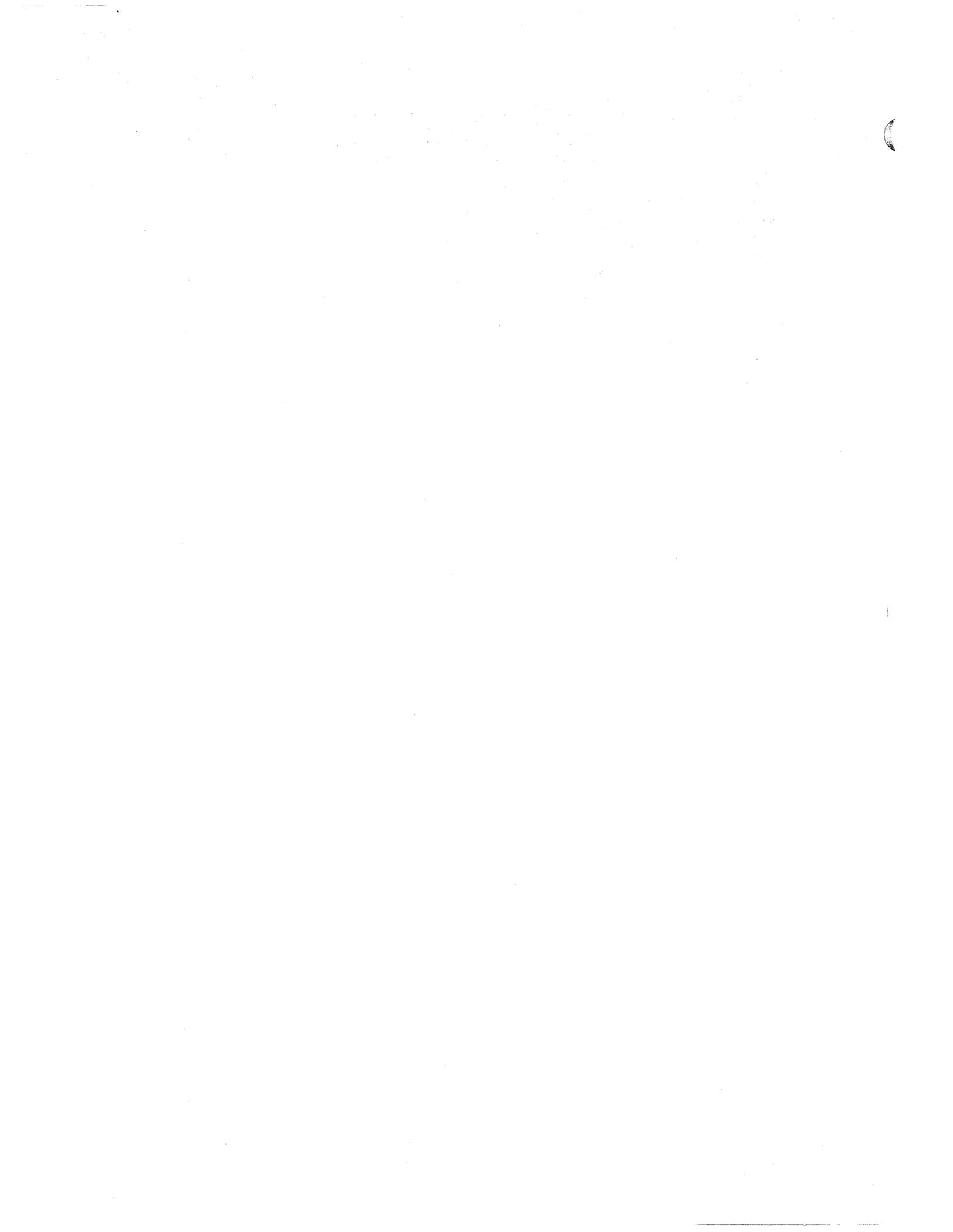
Report Format Definition • in the absence of print specifications, items are printed as they appear on the screen; print specifications are: "x" print this item and advance to the next line, "+" print this item then skip 2 spaces; "S" specifies sort on the first 10 characters of the field; no other options are supported • a companion report product, pfs:Report, is available.

Sort/Merge Capabilities • the Copy Selected Forms option on the main menu supports the merge function; the user is cautioned to ensure that sufficient space exists prior to merging.

Query/Selection Capabilities • query is supported via the Search-Update function; limited record selection is supported via the Copy function, but it does not allow reformatting.

Programming & Batch Processing Capabilities • none.

• END





Software Publishing Corp pfs:Graph Business Graphics Package

■ PROFILE

Function • produces line, bar, or pie graphs from directly keyed data, from pfs:File, DIF files, or from the output of popular spreadsheet packages.

Computers/Operating Systems Supported • IBM PC or equivalent compatible system; Apple II, IIe, or III Plus; the IBM version requires PC-DOS or MS-DOS to operate—no version specified; the program will run on a PC/XT and will use hard disk storage if available.

Configuration • 128K bytes of RAM, 1 disk or diskette drive, and an IBM color graphics adapter or equivalent; graphics printer or plotter optional; required if printed graphs are desired • requires DOS Version 1.1.

Current Version/Version Reviewed • A:02/review version specified on diskette.

First Delivery • March 1983.

Number of Installations • 300,000 total for pfs:Graph, pfs:Report, pfs:File, and pfs:Write.

Comparable Products • Redding Group GrafTalk Business & Professional Software BPS Graphics.

Optional Associated Software • none.

Vendor • Software Publishing Corporation; 1901 Landings Drive, Mountain View, CA 94043 • 415-962-0191.

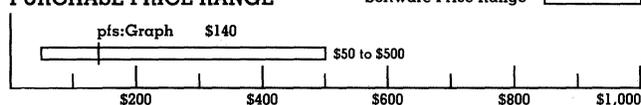
Price • \$140 retail price.

■ ANALYSIS

pfs:Graph is an unpretentious, bare-bones package designed to produce line, pie, or bar charts from direct keyboard input, from spreadsheet data, or from files produced either from pfs:File or from any package capable of generating VisiCalc-format DIF files.

Business graphics needs relate primarily to attractive presentation of information. pfs:Graph provides support for chart production in an easily learned, easily-applied manner, but it seems to fall short of excellence. The major problem is that it cannot support flexible titling or formatting of information being graphed. Since doing a graph implies a need for an attractive form, it would seem that the options available in such a package would provide a wide range of lettering options. They do not, and that fact is likely to be the largest source of complaints in an otherwise beneficial piece of software.

PURCHASE PRICE RANGE



SOFTWARE PUBLISHING PFS:GRAPH PRICING • open bar shows the typical range of prices for GRAPHICS software used in a corporate environment • the vertical line within the bar graph indicates the price of pfs:Graph, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	████████████████████									
DOCUMENTATION	██									
FUNCTIONALITY	████████████████████									
EASE OF USE	██									
SUPPORT	████████									
SYSTEM INTERFACE	██									
EXPERIENCE OF VENDOR	████████████████████									

*For an explanation of rating criteria, please refer to the Graphics Features section in the Software Evaluations (805) report.

Strengths

If ease of use is a primary consideration in the selection of a graphics package, pfs:Graph is worthy of consideration. The documentation is excellent and the software features are logically structured so that beginners have no problem generating simple graphs with no supervision.

For companies requiring only rudimentary graphics for things such as memos, presentations, informal reports, etc, this package should be adequate. The price is also easy to take—almost in the “petty cash” category.

The printers and plotters supported by the package are a good cross-section of the popular models of the marketplace, and both a graphics printer and a plotter can be supported at the same time.

Limitations

The price for ease of use is often lack of sophisticated features, and this is true for pfs:Graph. While it can easily handle graphs which have a single set of X/Y values (the month-by-month performance for a single salesperson, for example), multiple plot graphs are more complex to enter, and no more than four separate sets of X/Y points can be shown on a single graph. The graphs produced, while appealing to the user who has never successfully printed one, soon look rather “primitive” in form due to the lack of title and label options in the program.

Like many other packages, pfs:Graph is copy protected unless you're using hard disk (see Hands-On Evaluation), and this can cause users with single-drive systems serious operational problems. DOS 2.0 will not install on the pfs:Graph disk, so it cannot be made bootable. Because COMMAND.COM, IBM's program to supply the system prompt and read command lines, will also not fit on the graph disk, so some disk shuffling is needed at the end of the program.



Software Publishing Corp pfs:Graph Business Graphics Package

pfs:Graph will support the DIF file format popularized by Software Arts, but importing VisiCalc files in that form required a set of actions that didn't prove to be inherently logical or easily used. It will not support the formats for ALL spreadsheet packages, so users with a favorite should check to see if it will produce a compatible file before investing in pfs:Graph.

The graphics capability is further limited by its ability to combine only 4 X/Y relationships. Thus only 4 separate entries can be shown on a graph. Further, the chart sizes are restricted to standard and over-sized, and the type size and fonts cannot be altered. In all fairness, we should point out that pfs:Graph is a very inexpensive package (\$140) and is not intended for sophisticated applications. The limitations mentioned here are only meant to alert those who may be looking for sophisticated facilities.

■ HANDS-ON EVALUATION



The manual provided is indeed impressive. The tutorials are clearly written, and the many illustrations and examples led us to believe that pfs:Graph would be a snap to use. Wrong! Our first problem occurred when we tried to make the disk self-loading. The manual tells you to run a program called INSTALL which is supposed to move DOS files to the program diskette. When we tried this with DOS Version 2.0, we got a message telling us we had insufficient disk space. We checked the manual to find out what to do, and found **no mention** of this problem. Now this is no way to start a relationship, especially for inexperienced users. If something as simple as installation fails, they begin to think something is wrong with the software.

The standard solution for this problem is to move the program disk to drive B:, and put a formatted work disk with the DOS files into drive A:. This didn't work because the program tried to find a file on the A: disk even though B: is the current drive. We had to power down to get going again. These problems stem from the fact that the program is copy protected, so you cannot create a double-sided disk with the system and command files on it and copy the GRAPH program to it for execution. Two copies of the program disk are supplied, so if one is damaged you can use the other.

The installation section made no mention on how to load with a hard disk, even though the package runs on it. We discovered the procedures in the Appendix of the manual where we also found that the installation program can be run 5 times for each copy of the program disk. It seems that you can make 10 illegal copies if you're lucky enough to have a disk.

User Interface

pfs:Graph uses a simple menu structure to drive all of its functions. Minimal use is made of either control or function key commands, but the lack is not significant in terms of complexity added to the interface. The major complaint about the user interface is the use of the F10 function key to signal the program to act on an entry, a practice contrary to the convention of using the RETURN key.

Menus: The main menu for the product controls all aspects of processing. In addition to entering data and returning to the operating system, the options include choices for defining, displaying, saving or retrieving, printing plotting, and clearing a chart. Each choice of the main menu has a secondary menu which allows the user to choose the particular options for that function. The user is required to use the menu structure as is because no shortcut commands are implemented; they are not really missed. Generally, the user selects a function or option by entering the number of the item corresponding to the operation wanted or by responding to a prompt. The menus are an integral part of the command structure of the product and cannot be suppressed.

Control Characters: Ctrl + Home moves the cursor to the first item on the screen. No other control sequences are implemented.

Function/Special Keys: F10 is used instead of the enter key to signify that a choice has been made. Minimal special key combinations are used. They depict specific data types, such as "YM" to signify a date in year/month/day format.

Command Language: None.

Positive Feedback: Selecting the potentially destructive "clear chart" option from the main menu displays a warning message and requires user confirmation before proceeding.

Status Display: The lower section of the screen is used to display prompts to which the user must respond; it also displays useful information such as which function keys are active and their purpose.

Help Facilities: A "Samples" diskette with pre-keyed data in support of text is provided. No Help menu is provided, but the functions are simple enough not to require one.

Environment

pfs:Graph will load and run (with some diskette switching) on a single drive system with single-sided diskettes, but it requires 128K bytes of RAM. Larger memory space does not seem to make a significant difference in speed of operation. It will support the IBM Graphics Printer, the popular Epson printer, and IBM character printer retrofitted with the graphics option, and printers in the NEC, Okidata, and other lines. It will also support most popular plotters. The configuration requirements are clearly stated on the external label of the package, and are highlighted in the first chapter of the manual.

A color graphics board is needed to operate the program; you cannot use the package even to print graphs if this board is missing. A message is displayed suggesting that the dealer be contacted if you attempt to use the package with the monochrome display.

pfs:Graph is copy protected and uses hard disk drive assignments. It must be run either from the A: drive or from hard disk. Neither DOS 2.0 nor DOS COMMAND.COM operator interface install on the program diskette. Version 1.1 of DOS installs and runs properly.



Software Publishing Corp pfs:Graph Business Graphics Package

Documentation

The documentation is composed of a single spiral-bound manual which presents the information and instructions in a clear, easy-to-understand manner. Users with no graphics familiarity and little personal computer experience were able to understand the features and operations of GRAPH. The manual structure mirrors the structure of the main menu of the program, taking the user through the steps in graph setup and printing in a very logical manner. There are many illustrations and screen examples, and they are included at strategic points in the material to reinforce learning and to give a clear picture of the results of a successful operation.

The various graph types and the options for formatting within each type are explained and shown on sample charts. We found that users tended to "go shopping" for the type they liked and then follow the directions to produce it. Since the manual is not large and the graphics options are largely contained in the section "Define Chart," this should not cause significant loss of time and could reduce false starts and trials.

The appendices contain instructions on specific error messages, configurations, and installation, and even a tutorial on useful DOS commands. There is a quick reference guide which defines the function of each of the keys used by GRAPH.

The only shortcoming we found related to the problem with installing the operating system on floppy disk. No mention was made of potential problems with installation of DOS 2.0, and the absence of any comments or warnings gave users the feeling that something was wrong with the system or the program.

Functionality

GRAPH provides a basic method for creating line, bar, and pie charts from 3 sources of data: manual input into GRAPH, output from pfs:File, DIF files, and from spreadsheet packages or other sources. The package contains numerous logical defaults to speed processing, and nearly all who used it were able to produce graphs with no difficulty. The graph process is divided into sections, each defined by the main menu and each represented by a chapter in the manual.

Graphs can combine multiple sets of X/Y relationships, up to a total of 4. This limit meant, for example, that a sales performance graph could not show more than 4 salespersons, a restriction which limited the usefulness of the package.

Chart format was probably the most significant problem, however. The charts can have only two possible physical sizes (standard and over-sized) and the size and font of titles and other lettering in each form could not be adjusted. Exact values could not be printed at the head of bars in bar graphs, and the method used to indicate points in a line graph was not user-selectable. We found that the graphs produced by the package often required manual "tuning" for use in important documents because of these

restrictions. Plotted graphs can be in color, but the color choice could not be overridden. The form of cross-hatch used for black-and-white graphs provided unusually good definition of different layers in bar graphs or segments in pie charts.

Printing or plotting graphs is a separate menu choice, a factor we feel will displease some users.

Ease of Use

If the package is used to manually enter data or with data derived from pfs:File, then it is very easy to use. The time taken for any level of user to input data and to produce the desired graph was well within limits of acceptability. Breaking the graphing task into logical segments like "get data," "define chart," "produce graph," "print graph," etc made the process of data definition and use an easy flow which aided in the understanding of the package.

The use of DIF files for input posed a major problem. Most VisiCalc or other spreadsheet layouts provide multiple plots of values in the same chart. A sales performance chart used as a test had 4 (the maximum number allowed) salespersons whose bookings were plotted by month. When this was run with manual input, it required 48 data entries but was completed without difficulties. The same project, when based on a VisiCalc worksheet, baffled all the users even with the examples in the manual. The problem was that because the spreadsheet provided all 4 columns of data, the users expected the GRAPH program to automatically pick them up and show 4 bar chart segments per month, one for each salesperson. Instead, they had to extract the data 4 times, each time using a different column of the DIF file as the source. To make matters worse, the reference to the spreadsheet data in the GRAPH program is relative to the ORDER IN WHICH THE ROWS OR COLUMNS WERE SAVED INTO THE DIF FILE and not to the row number or column letter used by the spreadsheet package. None of the users liked the system for processing the spreadsheet input, even after they learned to use it successfully.

Another petty annoyance is that the user must terminate each command entry with the F10 key, rather than with the RETURN key. The number of mistakes made here was roughly equal to the number of entries made—everyone did it wrong most of the time. Entry accuracy can be vital, too. When we selected a printer address option which was not supported on the system it caused a hardware lock which required a cold start to eliminate. The supplier warns you against this, and suggests that you save any charts before trying to print them. However, the printer selection appears each time you print. The configuration of the print options via the SETGRAPH program only sets the defaults, and it is easy to key into a field by mistake.

Support

The documentation provides **no** telephone number to call with problems, and after you reach technical support they may not have the answer. When we decided to call about the loading problem, we first had to look up the number in a vendor directory. When we finally reached someone



Software Publishing Corp pfs:Graph Business Graphics Package

in technical support, he said the problem was not listed in the book and he did not know the answer. Discussions with the people at Mountain View didn't provide the solution either.

The next day, we received a call from the technical specialist who admitted that we had "taught them something in Tech Support." The protection scheme used by the package makes it try to access the A: disk unless it is booted from hard disk. If the attempt fails, the package "thinks" it is an illegal copy. Our comment that this form of copy protection placed some pretty unreasonable restrictions on users with corporate conventions on drive assignments was met with silence.

While the people at Software Publishing tried to be helpful on the phone, a lack of ANY specified path for customer questions or support, and failure to provide a phone number for such support, is clearly unsatisfactory from a corporate point of view.

System Interface

The documentation provides no information on interfacing pfs:Graph with packages other than VisiCalc or pfs:File. The DIF file format described by Software Arts, Inc is used by other vendors such as Lotus, but no mention is made of that fact.

Use of a "standard" structure such as the DIF format would be an advantage if the vendor provided a representative list of other software systems which produced DIF files or identified the company who defined the format. Software Publishing Corporation does neither, and gives no indication of what characteristics of other software packages might influence their ability to produce DIF files in the GRAPH format.

Vendor Experience

Software Publishing Corporation has been primarily a supplier to the smaller user, and although their IBM PC products are taking them more into the world of the corporate user, it is still an unfamiliar world to them.

LCNS: license fee.

■ PRODUCT OVERVIEW

Terms & Support

Terms • pfs:Graph is available for purchase only, from Software Publishing Corporation, through computer dealers, software dealers, and mail-order firms throughout the U.S. • no specifics of international distribution are provided.

Support • telephone consulting with vendor technical support people.

Component Summary

Software elements include 3 programs: pfs:Graph, INSTALL, and SETGRAPH.

pfs:Graph is a program to produce bar, pie, or line charts from directly keyed or imported data, supplied on a single diskette with a second sample diskette containing chart examples. INSTALL is a batch procedure provided to install IBM DOS on the program diskette, applicable to the IBM PC and compatible versions. SETGRAPH is a program to set the default printer and plotter options for the pfs:Graph program.

pfs:Graph:

\$140 lcns

Computers & Operating System Supported

Runs on IBM PC or compatible system and Apple II, IIe or III Plus. The IBM version runs under PC-DOS or MS-DOS Version 1.1.

Minimum Operating Requirements

The package requires a system with 128K bytes of RAM, 1 disk or 1 diskette drive, 1 IBM color graphics adapter (or equivalent); graphics printer/plotter optional.

Features

Graph Formats • pie, bar, and line charts are supported; bar and line charts may be stacked.

Data Source • input may be from the keyboard or from a file; DIF type files are supported as are the files created by other pfs products.

Graph Size & Positioning • axes for a graph may be rescaled; no other options are available.

Text & Label Support • graph and axes labels are scaled by the system; no additional textual information is permitted; no additional fonts are supported.

Image Processing Features • graphs may be stored in picture format for use in other programs; the format is the same as the BASIC BSAVE command.

Mathematical/Statistical Features • none.

Text/Report Integration • except as noted under Image Processing above, no integration is supported.

• END



Software Publishing Corp pfs:Report Database Management

Finally, the choice of implementing a control break program, however limited, is a reasonable **first** step in bringing the features of pfs:File up to a level consistent with business needs.

Limitations

The most severe limitation of this product from a corporate viewpoint is that Software Publishing has omitted many features which, although not essential from an individual or small business point of view, are critical to the accomplishment of the larger corporate mission. The limited implementation of the control break reporting capability above is a prime example.

The individual or small business user may not feel cramped at having only 2 sort fields or only 1 level of subtotals, but most corporate users will require more. Similarly, the small scale user may find that 16 possible columns of data is more than he or she would ever use, while the large scale user might use them all and be looking for more on the first standard report.

While a single-line title may be enough for the small scale user, the inability to include lines for the corporate name and departmental information would be as one corporate user put it "political suicide."

The fact that Software Publishing has chosen to copy protect this program is the second limitation of this product. Here it is far more noticeable than it might have been otherwise because this product is designed to function with only 1 other product. The copy protection scheme makes it impossible to combine the 2 products on a single diskette. Also, pfs:Report will not accept DOS 2.0 (on either the primary or the backup copy) on its diskette. This means that, if one already has pfs:File up and running with DOS 2.0 (very likely as we experienced no difficulty) and then installs pfs:Report with DOS 1.1 because DOS 2.0 won't work, one WOULD NEED TO REBOOT the system when switching between them.

And as if that were not enough, the user would have to remember to use work diskettes for pfs:File that were formatted using 8 sectors per track, the most that DOS 1.1 will address. This both reduces the amount of file space available and increases the chance of error. We could also leave the diskette unbootable and place a DOS diskette in the "A" drive when called for.

Another limitation of the product is that only 8 report definitions may be stored for a given file. Again, this may be acceptable with the small scale user, but the large scale user will find that only 8 views will be restrictive and the prospect of redesigning the report each time it is requested is not pleasant.



HANDS-ON EVALUATION

We read through the installation guide provided as a separate flyer to the manual, but as we were not installing this product on hard disk, we turned to the installation instructions in the manual.

We followed the instructions exactly. First, we brought up the system, second we moved DOS to drive B and inserted pfs:Report in drive A and typed "INSTALL." As described, we saw a series of DOS commands and the in-use lights on the diskette drives came on alternately as the system was being copied; however, COMMAND.COM would not copy to the pfs:Report drive. We ran the DOS CHKDSK utility to find and correct any errors on the diskette, but were still unsuccessful in creating a self-loading diskette.

After careful examination, our technical staff indicated that the problem lay in trying to use Release 2.0 of DOS. We tried again with DOS 1.1 and were successful in creating the diskette.

A flyer entitled "pfs:Report" was also included in the package. On the back page of it, Software Publishing Corporation states their motto and objectives: "The simpler. The better." Is providing copy protected software, which will fully support only an outdated version of the operating system of the computer, providing either a simpler or a better solution to anyone's computing needs?

Software Publishing does provide a program, HARDDISK, which is used to install the programs on the IBM PC/XT, but without the required 2M bytes of disk space we were only able to generate an error.

User Interface

pfs:Report uses a combination of menu structure and command sequences to add some much-needed functionality to the pfs:File database program. The command sequences consist of mnemonic character strings indicative of the function which they will perform. As with other pfs products, the result is an easily-assimilated, user-friendly product.

Menus: A single menu is used to control the flow of the program. There are three options to perform functions and an exit. The options are: Print a Report, Pre-define a Report, and Set New Headings.

Control Characters: Minimal use is made of control key functions. Ctrl + home moves the cursor to the top of the page.

Function/Special Keys: The use of function keys is displayed in the status line of the display. Mnemonic character strings are used to control functions such as calculations, e.g. T for total.

Command Language: None.

Positive Feedback: Errors are displayed. Correct action generally results in a change in display. Destructive operations result in an "are you sure" type screen.

Status Display: The bottom few lines of each screen contain status information. Included in the display are the uses of the active function keys.

Help Facilities: No online Help facilities are present; however, there is a tutorial which includes examples of each option.



Software Publishing Corp pfs:Report Database Management

□ Environment

pfs:Report requires at least 64K bytes of RAM, at least 1 diskette drive (single-sided or double-sided), a monochrome display or an 80-column color monitor and color graphics adapter, and PC-DOS version 1.1 or earlier. DOS 2.0 requires additional memory and cannot be installed on the diskettes provided.

Hard disk systems such as the IBM Personal Computer/XT with a minimum of 2M-byte disk space are also supported. Since you may not need anywhere near that figure, this is a restriction difficult to accept.

Software Publishing Corporation has chosen to copy protect this product. The employment of copy protection precludes combining this program with other pfs products.

□ Documentation

pfs:Report comes in a slip-cover box which contains a single spiral-bound combination reference manual/tutorial and a separate installation guide flyer. Two copies of the program diskette, primary and spare, are secured on a specially equipped page in the manual.

The material in the manual is well organized and presented in a clearly understood manner. The documentation leads the reader through an introduction to the printing of a report and then fills in with each of the available options.

□ Functionality

We found the format of pfs:Report to be similar to that found in pfs:File. It includes 3 phases: Retrieve Specifications, Report Options, and Report Specification.

Retrieve Specifications consists of 5 categories: full and partial item matches, numeric item and range matches, and the "NOT" match. The full item match has some additional features which should be of assistance. First, it ignores spaces before the initial non-blank character and after the last non-blank character. Second, it treats more than 1 space in a series as a single space. Third, it does not differentiate between capital and small letters. With this feature, "city/state" combinations in addresses and the like can be easily found.

The partial item match contains 2 features of note. First, the "wild card" symbol which tests "true" for any character but is only one character long and second, the "don't care" symbol which allows the search to begin or end or both begin and end anywhere. With these features specific items may be found within a paragraph. The numeric item match facility allows for the use of 3 algebraic symbols for "less than," "greater than," and "equal to." The numeric range test adds the "don't care" symbol between a low and high range. The "not" match can be used in conjunction with any of the above matches to negate the sense of the selectivity. The selectivity corresponds exactly to choice "4" in pfs:File entitled "Search/Update." Thus, the user already familiar with pfs:File should have no trouble here.

We found that pfs:Report offered more report options than pfs:File including a means of using reports which have already been developed, and we were even allowed to enter a single line report title. Clearly, this is still geared to the small-scale user. The corporated user may be able to employ some of the features if the format is not of primary concern. In pfs:Report, as in pfs:File, the user is allowed to select some or all of the fields within the database to be included in the report. The style of report provided by pfs:Report is that of a "control break" program. This is one of the most useful types of reports for categorization and summation.

In our most modest invoice sample data base we were able to count the number of outstanding invoices and to total the amounts owed without problem, but larger data-bases with more breaks required will create a problem.

pfs:Report provides for up to 16 columns in which a field may be reported. The first 2 columns are treated by the program as the sort key. The user may choose to skip to a new page when the first column (and only the first column) changes.

Another new feature offered by pfs:Report is the specification of column calculations. These include totaling, counting, and averaging of any column for the entire report. These operations may also be specified to occur whenever the value in column 1 changes.

We also found the occasion to use the "Derived Column" feature of pfs:Report. In fact, we quickly used up the 3 allowable derived columns. This feature is similar to that found in most spreadsheet programs. The contents of each item of a column may be combined with any of the other columns by simple mathematical functions: add, subtract, multiply, and divide. Parentheses may be used for clarity and grouping.

We also used the "Keyword" feature which allows the user to retrieve items which contain the specified keyword buried in text. This specification only works in column 1.

Another feature which we found helpful was that of changing the field headings. The need of keeping titles short on an input screen usually means that the field titles, if provided, are abbreviated, i.e. "department" becomes "dept" and "State" becomes "St." The titles are much more acceptable in their expanded form on reports, especially if the abbreviation used is obscure.

We found the increased functionality of pfs:Report to be a step in the right direction, but are surprised to find this as a separate product and not an upgrade to pfs:File, especially since pfs:File is required in order to create the files on which pfs:Report runs.

It also seems that this increase in functionality, which is bare minimum for the corporate user, will effectively double the cost of the product.

□ Ease of Use

pfs:Report is an extension of pfs:File but we were unable to install pfs:Report on the pfs:File diskette because of COPY



Software Publishing Corp pfs:Report Database Management

PROTECTION. This problem was further emphasized by the fact that pfs:Report would not install with DOS 2.0. We found it most annoying to be required to reconfigure another product from the **same** manufacturer with an obsolete version of an operating system just to avoid the potential problems created by the copy protection scheme. Hopefully, the problem would have been avoided on a hard-disk system.

Except for the problems noted above, we found pfs:Report easy to use. Both secretarial and professional staff members were able to make the transition from pfs:File with no trouble and in less than 2 hours we were able to produce reports which exercised every facet of the program.

The documentation provided explicit instructions on how to use each of the options of the program. All members of our staff found the examples in the tutorial to be clear and easy to follow.

We were caught once by the lack of input editing. A member of our secretarial staff designed a report which would produce a listing of all programs acquired this year using our test pfs:File database as the input file. When the report was run, we noticed that one of the programs which we knew to be on the file was not appearing. Inspection of the record via pfs:File revealed that the individual who had keyed this particular entry had entered the acquisition date as 06/01/83, rather than 83/06/01, as it should have been entered. It only took a moment to correct the entry, but it serves to highlight the type of problem which can easily occur in a corporate environment with a large volume of data. We believe that properly designed programs should protect the operators from themselves insofar as possible. Here, Software Publishing has chosen to ignore the issue.

Support

Software Publishing provides a business reply card which the purchaser is required to fill in and mail in order to participate in their support service. This also registers the purchaser as a member in their User Group.

We continued through the standard warranty disclaimers and found the corporate address, but no telephone number. We **really** wanted to find out if the problem which we experienced in attempting to configure the diskette with DOS 2.0 was intentional, so we obtained their number from telephone information and called them. They could offer no solution, nor provide a date by which support would be made available.

System Interface

pfs:Report is designed to process files created by pfs:File. It actually adds report designs to an existing file. We experienced no difficulties in either reading or writing the data created in pfs:File from pfs:Report, however, the potential problems associated with different versions of DOS are significant.

There is no information in the documentation that this product can be used to generate reports with any other file organization other than that used by pfs:File. It also

does not seem to be possible to employ other pfs: products, such as pfs:Graph, to add an integrated graphing capability.

Vendor Experience

Software Publishing Corporation has been primarily a supplier to the small-scale user. The IBM PC products have given them some exposure into the world of the corporate user, but their experience is still in its infancy.

■ PRODUCT OVERVIEW

Terms & Support

Terms • pfs:Report is available for purchase only from Software Publishing Corporation, through computer dealers, software dealers, and mail-order firms throughout the United States; no specifics of international distribution are provided.

Support • no telephone hot-line support service available by vendor; user must return reply card to vendor to participate in support service (presumably by mail) and to register for User Group membership.

Component Summary

Software elements consist of 2 programs: REPORT and INSTALL.

REPORT is the report design and selection program; it provides the user with pfs:File report options • INSTALL is a batch procedure provided to install IBM DOS on the program diskette; applicable to the IBM PC and compatible systems • HARDDISK is a program to install pfs:Report on a hard disk; the disk must be at least 2M bytes large; it may only be used 5 times • SETUP is a program to set up a serial printer or to change the default work drive • PRINTER is a program to allow you to send special characters to the printer • **Note:** SETUP and PRINTER are also included with pfs:File.

pfs:Report:

\$125 lcns

Computers & Operating Systems Supported

pfs:Report is supported for the IBM PC, PC/XT, Compaq computer, and other IBM PC-compatible systems using MS-DOS.

Minimum Operating Requirements

Requires at least 64K bytes of RAM, 1 diskette drive (single- or double-sided), monochrome display or 80-column color monitor and color graphics adapter, and PC DOS 1.1 or earlier. Use of DOS 2.0 requires 128K bytes of RAM and a hard disk of at least 2M-byte capacity. (DOS 2.0 is not accepted by pfs:Report on either the primary or backup copy on its diskette.)

Features

This product is a companion of pfs:File. All data input is handled by pfs:File.

Record Size Limitations • not applicable.

File Size Limitations • not applicable.

Field Size Limitations • not applicable.

Key Field Limitations • not applicable.

Screen Format Definition • inquiry only is supported.

Entry Edit Capabilities • none.

Report Format Definition • extends the reporting power of pfs:File to include sorting on the first two report columns, and stylized control breaks on the first column report column; (the order of report columns is under user control); up to 16 columns may be used for one report.

LCNS: license fee.



Software Publishing Corp pfs:Report Database Management

Sort/Merge Capabilities • for report purposes only; sorting is performed on the first two report columns; sorting of a report can be bypassed by designating the lowest report column as three.

Query/Selection Capabilities • selection based on keywords may be implemented on the data in column one.

Programming & Batch Processing Capabilities • none.

Other Facilities

pfs:File is a data management package which can be used in conjunction with the reporting capabilities of pfs:Report.

pfs:File:

\$140 lcms

• END



Software Publishing Corp pfs:Write Word Processor

■ PROFILE

Function • word processor.

Computers/Operating Systems Supported • IBM PC, PC/XT, or PC-compatible computer systems; DOS 1.1 or 2.0, or equivalent is required

Configuration • 128K bytes of RAM, 2 disk drives, color graphics adapter or monochrome display, parallel or serial printers.

Current Version/Version Reviewed • version A:00 is the initial and current version.

First Delivery • May 1983.

Number of Installations • approximately 300,000 copies of all PFS products sold.

Comparable Products • MicroPro WordStar, Satellite Software Wordperfect.

Optional Associated Software • pfs:Report, pfs:Graph, and pfs:File from same vendor.

Price • \$145 retail price.

Vendor • Software Publishing Corporation; 1901 Landings Drive, Mountain View, CA 94043 • 415-962-8910.

■ ANALYSIS

pfs:Write is a basic word processing package which attempts to use the display capabilities of the IBM PC or other compatible system to full advantage, and to present a friendly and easily used environment to both the clerical and professional user.

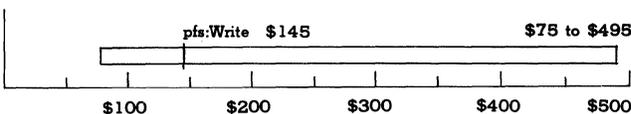
From a feature/analysis point of view, pfs:Write is a very basic product. Many specialized document production features are totally absent: temporary margins, multiple windows, and large document support, for example. But the basic features of a word processor are present and generally well-structured. pfs:Write may perform better in simple memo production than word processors of more than twice the price.

Users with requirements for the production of very large documents or specialized formats will probably find the lack of special features in pfs:Write prevents its effective application, but those who want only basic word processing will find it a good value.

□ Strengths

As a basic package, pfs:Write is uncluttered by complex

PURCHASE PRICE RANGE Software Price Range



SOFTWARE PUBLISHING PFS:WRITE PRICING • open bar shows the typical range of prices for WORD PROCESSING software used in a corporate environment • the vertical line within the bar graph indicates the price of pfs:Write, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	████████████████████									
DOCUMENTATION	██████████████████									
FUNCTIONALITY	████████████████████									
EASE OF USE	██████████████████									
SUPPORT	██████████████									
SYSTEM INTERFACE	██████████████████									
EXPERIENCE OF VENDOR	██████████████████									

*For an explanation of rating criteria, please refer to the page behind the Packages By Vendor (800) tab.

menus and screens which display so much information it cannot be read. The operation of the word processor relies on the cursor control pad and the function key pad, plus a few command menus for special functions such as page setup and printing. This structure makes the product very easy to use, especially for those who might be intimidated by more complicated systems.

The screen display of pfs:Write is an excellent image of a printed page, and the data which is keyed is formatted dynamically into paragraphs without special user action. This makes it unlikely that an insertion will cause an undetected problem with the formatting, again a big plus for the unsophisticated user.

Files from other sources, such as VisiCalc or the other pfs products (Graph, Report, and File), can be combined with text at print time, making reports with text and other forms of data presentation easier to execute.

□ Limitations

The trade-off to gain simplicity of operation has resulted in a significant loss of specialized features in the pfs:Write. The product limits the user in many areas rather than just not providing support. The manual is full of error messages which contain the words "too large," "too many," "full," etc. A key problem for many users is the fact that the entire document must fit into computer memory at the same time. The size of blocks of text which can be duplicated is also limited. While the limitation is not likely to affect the average business letter writer, a large report will not fit in a 128K-byte system.

Operation of the product is generally excellent, but is hampered by the use of the F-10 key as a "continue" function rather than the conventional carriage return.



■ HANDS-ON EVALUATION

The small size of the pfs:Write manual and the relative detail of the installation section of the document make the



Software Publishing Corp pfs:Write Word Processor

product appear from the start as one designed for the entry-level user. Installation was hampered by the all-too-common set of software conditions. The disk is copy protected and the current DOS 2.0 release is too large to fit on the distribution diskette. You are thus prevented from making the diskette self-loading, something which prevents giving typists a disk which loads the program automatically when the system is started.

Configuration gave a few problems because of terminology. The system can be set for either the color graphics adapter or the monochrome display, and the choice seemed clear. Beware if for some reason you have a color adapter with a black-and-white monitor. The "color monitor—yes" choice gives an unreadable set of light and dark greens, while the "color monitor—no" choice results in a display of underlined text in a way resembling reading through a picket fence.

There was a sharp difference in the learning curves for the package depending on the degree of familiarity of the learner with other personal computer software. Those who had little or no exposure to other packages found that pfs:Write was extremely easy to learn and use. This was particularly true of workers who, for various reasons, were intimidated by computers. One secretary, who had steadfastly refused to work with other products, found pfs:Write to be acceptable and even useful. On the other hand, users with previous computer experience were hampered by the annoying requirement of using the F-10 key to indicate the end of a command entry rather than the RETURN key. They also noted that the way in which block functions operate on a range of text to perform delete, move, or copy functions were restrictive and unconventionally implemented.

For small documents with forgiving format requirements, the product performed extremely well and fully satisfied the users. Professionals who attempted to use it for very large documents were frustrated by the size limitations placed on blocks of text and on the total document.

User Interface

pfs:Write uses a menu structure for the entry of basic edit options and a bordered full-screen display for the entry and editing of text. There is a tab and print position ruler at the bottom of the edit screen. Commands entered in editing mode are invoked via function keys, for which a template is provided. The interface is generally easy to use, but the use of a function key to replace Return as a "proceed" command to the system causes some confusion with new operators or those used to other products.

Menus: Menus are hierarchically structured in two layers, with an average of four selections per menu, indicated by numeric values. The F10 key must be pressed after a selection is made. There are no provisions for menu bypass for expert users, and the menu structure is clear and uncluttered.

Control characters: Not used—interpreted as data if keyed.

Function/special keys: All commands in edit mode are mechanized through the function keys, alone or shifted. A function key template is provided for reference, and a reference of commands is located in an appendix to the

manual. No user adjustment to function key assignment is supported.

Command language: None.

Positive feedback: Most keystrokes will either cause characters to appear or change in the text, or will cause a change to a menu or prompt format. Visual highlighting of marked blocks is used to provide an indication of the scope of block operations.

Status display: The last lines of the display are used for status information while in edit mode. The document name, buffer utilization, line, and page are displayed at all times. Special attributes such as bold and underline are displayed in the status line to indicate that text keyed will possess the attributes shown.

Help facility: Pressing the F1 key will cause the program to display a simple template of the function keys and a brief explanation of the commands.

Environment

Because of its use of memory as a text storage area rather than temporary disk files, pfs:Write requires only one disk drive but needs at least 128K bytes of RAM to run. It can be installed on hard disk systems, but only if the disk or directory you specify has a capacity of at least 2M bytes, a restriction which seems unrealistic since the floppy disk storage for the product is only 160K bytes. We were told by our technician that is probably done to prevent the product from being copied to a floppy in order to defeat the copy protection.

Copy protection caused a particular problem with this product, because its ease of use encourages application to very unsophisticated users. In an attempt to insulate these users from the command structure of DOS, we normally prepare a self-loading disk which automatically loads the user program when the computer is turned on. Because there is not enough space on the distribution disk to copy the current DOS version 2.0 and, because the distribution data cannot be copied to a double-sided disk to create more space, we were forced to load DOS first, change disks, then load pfs:Write. The copy protection scheme also requires that the program be run from the "A" drive.

Documentation

The manual for the product is small and has an even smaller tutorial introduction, accompanied by a sample diskette. Although the limited amount of material first suggested inadequacy in content, the tutorial provided very satisfactory in covering the use of the word processor. It consists of a series of samples which cover memos, price lists, and finally a report. The report section shows an example of an integrated graph and financial report based on the companion products pfs:Graph and pfs:Report.

The reference section of the manual starts, logically enough, as Section 1. Unfortunately, the page numbers 1-1, 1-2, and so forth are easily confused with the Introduction page numbers I-1, I-2, etc. One user became totally frustrated by attempts to locate the "delete" reference material because of this confusion.

The reference material is grouped by the main menu



Software Publishing Corp pfs:Write Word Processor

functions of the product: type/edit, define page, print, get/save/remove, clear, and exiting. Advanced features such as block operations, searching and replacing, and combining files at print time are covered in a later section, as is the use of the pfs:File product to aid in producing form letters. A list of error messages is contained at the end of the manual in an Appendix, and some of the explanations and suggestions are a bit whimsical. In the section of the DOCUMENT FULL error, which indicates that there is no more space for text, it notes that "you could also remove text from the working copy" of the document. This brought a howl of laughter from a secretary who felt that significant portions of a certain document could easily be eliminated, but it is rarely a practical suggestion.

The only significant problem with the documentation is its lack of command reference. The Appendix, which provides a reference guide, lists, for example, the function of the F-9 key as "append." There is no further indication of what this means (it is shown on a template provided with the product as APPEND, so repetition is hardly useful) and the index of the manual lists no references for it.

□ **Functionality**

pfs:Write provides a full-screen edit display with the page boundaries marked with a bright border. A tab ruler is located at the bottom of the page. The cursor movement is done through the standard key pad and with the forward-back tab keys. Page up, page down, home, and end all functions work as expected. Function keys may be used to move by word or to the beginning or end of a line. Page commands work by screen and not by printed page, making them a little more useful for fast movement because no data is passed without being displayed.

Using pfs:Write for small memos was an instant success, and in general it worked well with any form of business correspondence which did not require extensive formatting. The copy protection problem limited the usefulness of the companion pfs:Graph, File, and Report interfaces because only hard disk systems could access these programs readily. The operators were not able to overrun the package when keying in Insert mode, and automatic reformatting took place at acceptable speeds in all modes of operation. Corrections, deletions, and inserts were all supported in a logical way and did what was expected.

Larger reports and documents experienced problems with the limitations of the range commands. One writer had a large section of text to delete, and using the F-5 LABEL function to mark a range of text, proceeded to attempt a delete. pfs:Write told him that the block was too large to save and asked if it should still be deleted. That seemed like a nice feature; if you made an error you could undelete it by moving it back. Our writer checked the range and then went ahead. The problem came later, when the same writer wanted to move a block. The message this time said that the block was too large to move. Moving the text in little (about 30 line) chunks was workable, but hardly easy. Copying a range of lines caused the same problem.

Problem number 2 came later with a piece of ad copy

which was to be printed in block form, using both right and left justification on a line. You cannot do it with pfs:Write. The documentation lists nothing under "justification" so we tried "right" and sure enough there was a "right justified" entry listed. Our user's elation was short-lived, however. There is a FORMAT LINE command which lets you specify that a line is to be right justified. Since this particular piece of copy was about 150 lines, the advertising manager gave it to a secretary to do. The result was startling. Right justify means to produce text with flush right margin and ragged left. We were unable to find any application for an ad in that format and were forced to redo it.

Printing is unsophisticated in that there is no support for any particular printer type. This means that only standard character printers are supported. Print support does exist for both underscore and bold print with supported printers.

We found that the ability to merge documents at print time via the JOIN command was useful in overcoming the limitations on document size, but it can create problems as well. A JOIN command is embedded in text at the point where the other file is to be added, and the entire command is bounded by asterisks (i.e., *JOIN file*). You can JOIN files from many sources, including the pfs products and VisiCalc. We tried this with a financial report and it worked as stated, a useful feature indeed. A spreadsheet which was over 80 columns wide was inserted at one point using the PRINTER command, embedded in text like the JOIN command, to send a command to the printer to print condensed format.

The merge/print features of pfs:Write are impressive in many ways. The package actually costs less with merge/print included than some popular word processor systems charge for merge/print alone. The data file to be merged must be created by pfs:File, but the information can be merged from the file into form letters or labels of nearly any structure. No conditional printing ability exists, however, so we had some labels which contained blank lines because the form of address for that client required fewer lines than the pfs:File form provided.

After about a week of use, the organization divided itself between those who had found ways to make pfs:Write do all of their normal word processing tasks (60%) and those who had one or more hurdles which could not be overcome. Even calls to the vendor could not resolve the problems of this latter group, and they were forced to use other packages.

□ **Ease of Use**

Although everyone found basic text entry to be easily accomplished with pfs:Write, anyone with some computer background and a little confidence had problems with the command menu structure. First, every command requires an F-10 key to terminate the entry of data, a seemingly useless divergence from the standard use of the RETURN key. Second, the package uses the TAB key to move from field to field within a command menu, something which is not noted on the screen and can be learned only if you take the tutorial. The beginners all did, and had no



Software Publishing Corp pfs:Write Word Processor

problems. The "experts" plunged right in, and eventually had to ask how it was done, since the command reference in the Appendices does not list the TAB key's function in the command menu area.

With the annoying exception of the command menu entry, pfs:Write is easy to learn and to use. The basic editing and cursor control keys function normally with the word processor, making text entry easy even for users who have very little experience with word processors. The function key operation is quite easily learned as well. The more complex features are perhaps a little more difficult to use, but many of the documents did not require them and they seemed to present no particular problems to even the novice users.

Range operations will provoke some questions because of the unconventional way in which they are done. To move a block, you use the LABEL function to mark it (it had better be fairly short) and then the DEL key to delete it. The DEL actually saves the text in a hold area, but this was not calculated to build confidence in the users. The next step is to use the cursor keys to position to the destination area and use the DUPL function to perform the move. This move-by-deleting-and-putting-back-elsewhere did not get high marks, but the limits on the size of material to be moved tended to discourage its use anyway. The copying of a block is a little more logical. You use the LABEL to mark it then the DUPL key causes it to be saved in a holding area. You then move the cursor to the destination and press DUPL again. In spite of the seeming lack of logic in this process, users became accustomed to it easily enough.

Bold and underscore capabilities require the user to pass the cursor over the area to be underscored/bold-faced in a character-by-character manner. You cannot easily un-bold something either; we had to retype it.

In all, the operation of pfs:Write seemed to be accepted by all user types, but those with minimal experience became quite attached to the package.

Support

Dealer support seems the key to the strategies of Software Publishing Corporation; they do not list a phone number with their product. We located a number in a popular vendor directory and called to ask about the 2M-byte disk requirements for installation on hard disk. We were answered promptly, referred to technical support, and told the restriction meant that the destination disk in a hard disk install operation must have a total capacity of at least 2 million bytes. Some of that space may be used by other files, and the program will not actually take that much space. As our technician had suggested, this is done to prevent people from installing the program on floppy disks for the purpose of copying it.

The question of why the company did not publish its phone number with the material was not answered.

System Interface

pfs:Write can read print-image files from the other pfs products and from VisiCalc. We found that nearly any program which puts its files to disk will work in this form.

We even tried a small document transmitted from a DEC computer over a modem.

No special attention is given in the documentation to the reading of non-pfs, non-VisiCalc files, and no attention at all is given to the subject of using pfs:Write files on other computer systems or with other software packages.

Vendor Experience

Software Publishing Corporation has been primarily a supplier to the smaller user, and although their IBM PC products are taking them more into the world of the corporate user, it is still an unfamiliar world to them.

■ PRODUCT OVERVIEW

Terms & Support

Terms • pfs:Write is supplied on a license purchase basis only from Software Publishing Corporation; through computer dealers, software dealers, and mail order firms throughout the U.S.; IBM lists the product in their direct mail sales catalog.

Support • providing you are willing to track down the telephone number of their support group, vendor will provide telephone assistance.

Component Summary

The word processor system consists of 5 individual, but integrated programs: WRITE, pfs:Write, INSTALL, SETWRITE, and HARDDISK.

WRITE is a program which loads the pfs:Write program into computer memory. pfs:Write is the word processor itself, providing all functions and features from a memory-resident image; the diskette need not remain loaded after the program is in memory. INSTALL is a program to make the program disk self-loading (will not function properly with DOS 2.0). SETWRITE is a configuration program which permits the user to select from color or monochrome display and to specify the printer port to which printed output is directed. HARDDISK is a program to install pfs:Write system on a hard disk drive.

pfs:Write:

\$145 lcms

Computers & Operating Systems Supported

pfs:Write is designed for use on IBM PC, PC/XT, or PC-compatible microcomputer systems. PC-DOS Release 1.1 or 2.0 are required, or the MS-DOS equivalents on compatibles.

Minimum Operating Requirements

A minimum 128K bytes of RAM are equivalent for word processor operation. Although the system can function with one disk drive, 2 are recommended. A hard disk with 2M bytes of capacity can be substituted. Other system requirements include a color graphics adapter or monochrome display unit, and a parallel or serial printer.

Features

Display Type • orders of the page are bounded with display lines, the bottom line being a ruler; data is displayed within the boundaries in print-image form.

Display Feature Utilization • cursor is a blinking rectangle rather than an underline when inserting text; underline and bold print attributes are displayed appropriately; blocks are marked by using reverse video to display the text range.

Command Structure • commands are entered via function keys for which a template is provided.

Error Recovery • document can be saved periodically using the

LCNS: license fee.



Software Publishing Corp pfs:Write Word Processor

Save Document option; backup versions are not created automatically.

Block Operations • blocked text is labeled (highlighted) and is stored in the "block buffer" until it is replaced by another block or until the computer is turned off; text in the block buffer can be copied, moved, or deleted.

Merge/Print Functions • merges data from a pfs file with a document to produce form letters; will print a chart created with pfs:Graph as part of a document.

Spelling Check/Aid • not supported.

• END



SoftWord Systems Multimate Word Processor

■ PROFILE

Function • word processor.

Computers/Operating Systems Supported • IBM PC, PC/XT, Compaq, Columbia Personal Computer, other IBM compatible systems/PC-DOS, 1.1 or 2.0 or equivalent MS-DOS.

Configuration • 128K bytes of RAM, 2 single-sided or double-sided disk drives, hard disk is also supported for the XT; color graphics board and monitor and/or monochrome display and monitor; additional memory is required for PC-DOS 2.0.

Current Version/Version Reviewed • Version 3.20/Version 3.11 for the IBM-PC.

First Delivery • December 1983.

Number of Installations • information not available.

Comparable Products • most Wang-like word processors.

Optional Associated Software • none required.

Price • \$495 retail price.

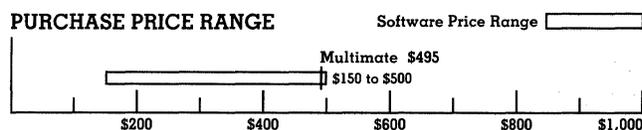
Vendor • SoftWord Systems; 52 Oakland Avenue, North, East Hartford, CT 06108 • 203-522-2116.

■ ANALYSIS

Multimate is a powerful, menu-driven, function-key oriented word processor for personal computers, styled after dedicated word processing systems. It contains over 80 of the features normally found in high-quality word processors including boiler plate, form letters, and automatic page numbering. Multimate provides for complete control over the printing of the document, allowing changes in format including spacing and enhancement at any point within it. It also possesses an online HELP facility which may be invoked at any point within the session.

To extend its utility in a multiprogram, multicomputer-type environment, Multimate is equipped with a series of utility programs which allows interfacing with other products. It allows you to convert Multimate files into ASCII or DIF format and the reverse. If your printer is not among the ones currently supported, SoftWord Systems will provide a printer configuration for you if you return your system diskette to them or, should you prefer to do it yourself, they also provide a utility to configure the printer option file for any printer.

PURCHASE PRICE RANGE



SOFTWORD SYSTEMS MULTIMATE PRICING • open bar shows the typical range of prices for **WORD PROCESSING** software used in a corporate environment • the vertical line within the bar graph indicates the price of **Multimate**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	████████████████████									
DOCUMENTATION	████████████████████									
FUNCTIONALITY	████████████████████									
EASE OF USE	████████████████████									
SUPPORT	████████████████████									
SYSTEM INTERFACE	████████████████████									
EXPERIENCE OF VENDOR	████████████████████									

*For an explanation of rating criteria, please refer to the Word Processor Features section in the Software Evaluations (805) report.

SoftWord Systems has also included color-coded key stickers in the manual which, when attached to the proper keys, aid in the learning process. Novice and casual users will find this helpful.

Version 3.20, which is the current release, includes an 89,000 word spelling checker/corrector and corrects some of the known problems. Registered users will be contacted by letter and asked to return their system diskettes to have the revisions applied.

□ Strengths

SoftWord Systems has taken the time to provide high-quality documentation in support of Multimate. The padded manual cover has a facility for it to function as its own stand. The paper is heavier than usual and it is filled with large easy-to-read type. The pages are printed black or white with green highlighting. The individual functions are logically and clearly presented. The documentation also includes training lessons which cover all of the functions in a hands-on approach to learning.

With Multimate, the document is keyed and presented on the screen as it will appear on the printed page (except for fonts and line spacing). This allows the operator to control pagination, line length, and format with confidence. And, because Multimate is page oriented, the operator will no longer wonder on what page a particular paragraph will appear, he or she will know. Formatting of pages is also quite flexible. If one page is to be single spaced while the next is double spaced, it is accomplished with a minimum of fuss. In fact, different spacing on the same page is readily supported.

A number of short-cuts for the experienced user bypass the intermediate menu selection screens. Where the novice is able to save a document, return to the menu, select the print option all by following through the normal menu selections, the knowledgeable user is able to bypass the menu and exit Edit mode directly to the print format screen.



SoftWord Systems Multimate Word Processor

The features of Multimate make it an excellent choice for users who demand maximum functionality. Wang word processor users may find that Multimate's close emulation of Wang features and functions make transition to a micro-based word processor surprisingly easy.

Limitations

Multimate requires that each page end in a carriage return character. When it repaginates, Multimate inserts carriage return characters at the end of a page. When the document is edited again and repaginated again, the user will usually find some stray carriage return characters implanted in the text. If the unwary user does not remove them, they may cause unwanted spacing in the printed document.

The background printing feature provided allows the user to edit one document while a second document is printing. It allows all other functions to precede it and is, consequently, quite slow. In fact, it comes to a complete halt when the user processes files.

Multimate provides a utility which will create an ASCII file from one of its formatted documents. The underscore character, however, is not transferred from Multimate to ASCII. Our technical staff contacted SoftWord Systems. They acknowledged that the condition did in fact exist and that their next release (3.20) does not correct it. This means that it is difficult to use Multimate as a composite word processor/program editor unless one omits the use of all underscores and other non-converted characters.



■ HANDS-ON EVALUATION

We followed the instructions given in the manual for the creation of a working copy and a backup copy of the system, but we used PC-DOS 1.1 instead of PC-DOS 2.0 because Multimate programs occupy approximately 126K bytes of RAM and our test machine only had a 128K-byte RAM. We tried it nevertheless, and it didn't fit. Instructions are provided for both single- and double-sided diskette and hard disk systems, and for setting up default drive assignments tailored to your system. The defaults are: System drive—A, Document drive—B, and Library drive—B. We let the defaults stand. Our staff moved on into the training lessons.

We experienced no problems with the tutorials. All of the lessons were presented in a clear and easy-to-follow format. We then attempted all of the listed options with our own constructs. We were able to cause the system to lose its place on 2 occasions: once, when we exceeded the input page length, and the other when we attempted to highlight an unfinished sentence at the end of a page. SoftWord Systems technical support proved to be knowledgeable and polite. They explained that the line input problem is corrected in release 3.2.

Other than the problems mentioned above, we experienced no catastrophic errors. Our other complaints about the system then became fairly subjective. On the whole,

our staff enjoyed working with Multimate. Little features, like having the previous argument appear on a subsequent search, were considered helpful.

User Interface

Multimate makes extensive use of function key commands in order to control its functions and features. It combines the simplicity of menu selection for major process control such as printing. The result is a powerful, user-friendly environment which emulates the standalone word processing systems.

Menus: Entry to Multimate is through the main menu. It controls the connectivity to the main tasks: editing a new document, updating an existing document, printing a document, utilities, and more. Sub-functions are also menu supported. The print function, in particular, uses the menu function to control the physical printer interface, draft, margins, and so forth.

Control characters: The Alt key in combination with other keys replaces the Ctrl key sequences for some processing features.

Function/special keys: the bulk of special processing features and commands are invoked via the function keys. The reference manual is required for users who cannot remember function series, because on-screen help for these keys is not sufficient.

Command language: None.

Positive feedback: The product automatically saves the file when you exit the editing function. You must enter the document utilities menu in order to delete a document. Reasonable safeguards are provided there.

Status display: The status line contains the name of the document, and your current page, line, and column, within it. A "format" line is also available with which the user may control spacing, tabs, and line length.

Help facilities: Pressing the shift + F1 key will cause the main HELP menu to be displayed. Within it are five major areas on which the system will report: cursor positioning, editing functions, format line control, printing functions, and miscellaneous. The return key is the path back to previous HELP menus or the screen from which you entered.

Environment

Version 3.11 of Multimate, the one we tested, supports DOS 2.0, but requires an additional 64K bytes of RAM to function. However, it does not support file name "paths." We used an IBM PC with 128K bytes of RAM, 2 floppy disk drives (one with 160K bytes, the other 320K bytes), a color graphics board and monitor, and an Okidata Microline 92 printer. We were forced to use DOS 1.1. As the printer was not on the list of those supported, we elected to create the printer customization module ourselves. The instructions are all included in the utility, so the sketchy documentation on what to do did not seriously hamper our technical staff.



SoftWord Systems Multimate Word Processor

The distribution diskettes are not copy protected, so we were able to give each operator a diskette with a private library of special phrases.

Documentation

Multimate's documentation is in itself almost a smooth-running system. It contains a high-quality tutorial/reference manual which takes the user first through a brief description and introduction of the available functions and then goes into more detail in the tutorial section, elaborating more on the examples previously in order to clarify questions the user may still have.

The manual contains sufficient visual examples of screen and functions. The wording is clear and straightforward. We found the secretarial staff enthusiastic, while the technical staff noticed a few problems, but generally had favorable comments. The manual also contains an index by function in alphabetical order; therefore, one does not have to wander around the manual looking for specifics.

The manual is prepared with an eye to the future, pages in the manual are isolated by subject making the inclusion of updates a simple and inexpensive task.

Functionality

Our staff had no problems in generating letters and memos, or in doing short reports. In fact, the only significant problem we had was in doing a massive insert of several hundred lines. All of the expected features were there, although the disk seemed rather slow. That detracted from the performance of the search function.

The displayed format matches the printed page. The user can alter the document as it is being written with the aid of the status line and system format line. The status line is a reference point showing the name of the document, the page number, and the column number. It appears on the first screen of every page in the document. The system format line can be changed at any point in the document. The format line sets tabs, margins, line spacing, etc, and it can be transferred anywhere within the document. The Indent feature was very popular with our secretarial staff as one of the test documents made extensive use of it. This feature allows you to remain at your selected tab stop without tabbing to it—a real time-saver in many documents.

There is header/footer control as well. The user can determine where the message will appear and can instruct the system to cancel that function on a given page. The system numbers the pages at set points (center, top, bottom, etc) and it allows you to jump from one page to another without taking you through the whole document.

One of the features in release 3.11 of Multimate is Column Calculations. This allows the user to sum a column of numbers either horizontally or vertically. Some restrictions apply, i.e., vertical addition cannot be carried out across page boundaries. However, it has proved very helpful to our secretarial staff, especially when preparing invoices and in the preparation of budgetary information. We found

that it eliminated the need for spreadsheet programs or calculators for some departmental reports.

A feature worthwhile mentioning is External Copy. Moving the cursor to where you wish the external copy to appear, then pressing the Shift F8 key to access the foreign document, highlights the section and returns to your document using the same function keys. This can be used to "paste" stock paragraphs from a source file into contracts or proposals.

Mail merge functions were not much of a problem. Instructions are clear, although a bit cumbersome, and although mail merge functions require more typing and the user has to exercise care not to forget the required variables, this task was made easy by the simplicity of the commands imbedded in the system. Functions can be undone by pressing ESC or by using the cursor in the opposite direction.

The search and replace function works well, although it, as with any disk input/output, is slow. It considers not just words but character strings as well. Strings must be quote-bounded and may contain spaces.

Those reviewing the package who were involved in serious typing efforts appreciated the Center feature a great deal. With this feature any line can be centered in the document and no additional commands are required at printing time. However, each line has to be centered individually. Another interesting feature is the Align feature. It aligns columns of numbers on the decimal points or allows you to right-justify columns of text.

Library functions are available. These allow you to keep frequently used words, phrases, paragraphs, etc in a library, and they are identified each by a different name. The designated names can be attached to the current document, thus saving the user from rekeying the whole commonly used phrase. We revised our initial setup of the package to give each operator a master working diskette with a copy of Multimate and a private library. This proved more effective than trying to get everyone to agree on what were key phrases and what were appropriate identifiers.

Ease of Use

Our entire staff found Multimate very easy to use. The combination menu-driven, function-key orientation proved easy to work with by all levels of our personnel. Even those on our staff with little experience with word processors found the product easy to use.

Major operations, such as Edit a Document, are begun by selecting the appropriate option on the main menu. Once the choice is made, other functions such as search or re-pagination are handled with the function keys. Multimate makes good use of the functions of the keyboard. The Insert and Delete keys are supported, as are the cursor movement keys. When the document is completed the operator can follow the menu structure back to the operating system, or bypass the selection menu with an Expert function and return to DOS.



SoftWord Systems Multimate Word Processor

The phrase capabilities of Multimate encouraged us to provide each user with a private library of stock words/phrases which could be recalled with a few keystrokes. This not only reduced the keying effort, it improved consistency of documents and the spelling of technical terms.

Professional and technical personnel quickly learned to use the product and found it very logical and easy to apply to their writing tasks. The office staff was somewhat intimidated on trying to extend Multimate beyond the basics, but once they learned the functions, they found that they could remember and repeat them with little difficulty. In all, the product had an excellent reputation with the entire organization.

Support

SoftWord provides the user with an 800 number to call on any problem. We called them with the problems mentioned earlier. We found their staff to be helpful and courteous. They explained that the excessive data problem was a known bug that would be corrected in the next release. They also stated it was known that the underscore and other control and/or special characters were not supported in file conversion from Multimate to ASCII, and that it would not be corrected in the new release. You are requested to give your system serial number when asking for assistance. Documentation lists SoftWord Systems as the primary source of support.

SoftWord sends letters to all authorized users when a new release is to be distributed. The letter instructs the user to return their Multimate diskettes to them for upgrading. The user is not inconvenienced as he or she can run from the working copies.

System Interface

SoftWord Systems provides a utility program which permits Multimate to share data with other products. The feature supports the translation between standard ASCII print files and the Multimate format. Unfortunately, not all characters are translated properly; the underscore attribute cannot be translated to ASCII from Multimate, for example. This utility can be used to bring a first image of text from another system into Multimate, and to permit Multimate to export its text files. Because it cannot and will not translate special word processing control features, some manual adjustment of the converted information is likely to be required, and some other word processors may not accept ASCII print-image data.

Multimate will also accept DIF files generated by spreadsheet programs.

Vendor Experience

SoftWord is not a major supplier in the personal software arena. The company does not have other major corporate

products in the field as yet, but its staff has expertise in dealing with larger corporations. Several were previously in the employ of large computer vendors.

■ PRODUCT OVERVIEW

Terms & Support

Terms • Multimate is supplied on a license purchase basis; it is available from SoftWord Systems, personal computer dealers, software dealers, and mail order firms nationwide.

Support • Software Systems provides telephone support via an 800 number; revisions are supplied if user mails back diskettes.

Component Summary

Multimate is a personal computer word processing and mail list merge program supplied on floppy disks. The program disk must be resident during execution for full functionality to be available. The product provides standard word processing features, merge capabilities for production of labels or form letters from a list, and phrase storage and recall. Printer Action Tables (PATs) are printer command files used to configure Multimate to operate with the popular letter-quality or matrix printers.

Multimate Diskettes:

\$495 1cns

Computers & Operating Systems Supported

Multimate can be installed on IBM PC or PC/XT systems running under PC-DOS 1.1 or 2.0. Other compatibles, including Compaq and Columbia Personal Computers running under equivalent MS-DOS systems, are also supported.

Minimum Operating Requirements

PC-DOS 1.1 environment requires 128K bytes of RAM, 2 single-sided or double-sided disk drives, and a color graphics board and monitor and/or monochrome display. For PC-DOS 2.0, additional memory is required. A variety of printers can be supported through the use of supplied PATs.

Features

Display type • modified full page; special symbols are imbedded in the display to denote printer functions such as bold, etc; these may affect printed text without changing the display.

Display Feature Utilization • the extent of block operations such as delete are marked by highlighting the text; error and warning messages are also displayed with highlighted text; color may be used as a highlight feature if the computer is equipped with suitable color graphics display.

Command Structure • commands are issued via a combination of menus for overall control, function key for intermediate control and functions such as HELP, with Alt key combinations to handle the overflow.

Error Recovery • none.

Block Operations • block operations follow a 6 step approach: first move the cursor to the first character or symbol, then initiate the command, highlight the area to be operated on, reapply the command, move the cursor to the new location, and enter the function once again; move, copy, and delete are supported, although delete does not use the last 2 steps.

Merge/Print Functions • merging files for printing form letters and mailing labels is supported.

Spelling Check/Aid • Release 3.2 and beyond support a spelling check function.

Multiple Windows/Multiple Document Support • none.

• END

LCNS: license fee.



Sorcim Corporation SuperCalc-2 Electronic Spreadsheet Package

■ PROFILE

Function • the development of financial reports, budgets, balance sheets and forecasts using an electronic image of a conventional accountant's spreadsheet.

Computers/Operating Systems Supported • IBM PC or PC/XT and PC-DOS, other 8086-8088-based systems using MS-DOS or CP/M-86, or MP/M-86 • also Z80-based systems using CP/M or MP/M.

Configuration • systems equipped with 8088 or Z80 require 48K-byte RAM and one disk drive; 8086-based systems require 64K-byte RAM; additional memory to 512K bytes may be utilized • multiple floppy drives are supported, and the package may be installed on a hard disk; a monochrome display or color graphics adapter is required, a printer is optional.

Current Version/Version Reviewed • 1.00/Version 1.00 for the IBM PC.

First Delivery • April 1983.

Number of Installations • approximately 250,000.

Comparable Products • VisiCorp VisiCalc, Microsoft MultiPlan.

Optional Associated Software • SuperData Interchange file conversion utility included with the package.

Price • \$295 retail price.

Vendor • Sorcim Corporation; 2310 Lundy Avenue, San Jose, CA 95131 • 408-942-1727.

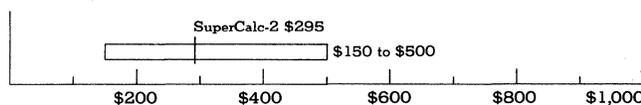
■ ANALYSIS

SuperCalc-2 is an easy to learn, easy to use electronic spreadsheet package. Although a relatively new release, it is basically an updated version of the SuperCalc package which has been available for some time. SuperCalc-2 provides a hierarchical command structure with good prompting, augmented by a Help function. The documentation is well organized, with a good tutorial.

Many of the features of this package seem to be aimed directly at the traditional shortcomings of spreadsheet programs. Some of the functions and capabilities provided greatly ease the production of a spreadsheet, while others provide enhanced report generation capabilities. A wide variety of mathematical and logical functions are available with this package, as well as the ability to create and operate from batch streams to allow data entry and printing by untrained personnel.

PURCHASE PRICE RANGE

Software Price Range



SORCIM CORP. SUPERCALC-2 PRICING • open bar shows the typical range of prices for **ELECTRONIC SPREAD SHEET** software used in a corporate environment • the vertical line within the bar graph indicates the price of **SUPERCALC-2**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	████████████████████									
DOCUMENTATION	██████████████████									
FUNCTIONALITY	██████████████████									
EASE OF USE	██████████████									
SUPPORT	██████████									
SYSTEM INTERFACE	██████████									
EXPERIENCE OF VENDOR	██████████									

*For an explanation of rating criteria, please refer to the Spreadsheet Features section in the Software Evaluations (805) report.

SuperCalc-2 provides a good balance between ease of use and functionality. It is well suited to both the occasional user and the spreadsheet professional. Command and display formats are very similar to that of VisiCalc, and experienced VisiCalc users have little difficulty in adapting to this package. Those experiencing an electronic spreadsheet for the first time will find SuperCalc-2 easier to learn than many other packages. The file conversion utility supplied with this package allows files from other types of programs, such as database programs, to be incorporated into a SuperCalc-2 spreadsheet. It also allows spreadsheets created under VisiCalc to be converted for use by this package.

While this package does not provide the mathematical power required for complex scientific or statistical applications, it is well suited to nearly any business application that fits a spreadsheet format.

Strengths

SuperCalc-2 provides a good balance between functionality and ease of use. It adheres to the command structure of VisiCalc, allowing experienced spreadsheet users to adjust to the product with a minimum of difficulty, while at the same time providing some of the features that VisiCalc lacks.

The documentation provides an excellent tutorial and reference manual, as well as a very good pocket guide that is geared towards the experienced user. The command prompting and Help function make the reference manual unnecessary for experienced personnel. Numerous sample spreadsheets are included on the distribution diskette, and the tutorial section develops two sample spreadsheets as a final exercise, all of which helps to bring new users up to speed very quickly.

The file conversion utility provided as a part of the SuperCalc-2 package allows the conversion of two different types of files for use by the spreadsheet program. Files created by database programs such as dBase II may be



Sorcim Corporation SuperCalc-2 Electronic Spreadsheet Package

converted, as well as DIF files created by such programs as VisiCalc. Detailed file structures are provided as a part of the documentation of this program.

□ Limitations

There are a few minor irritations in the areas of text entry and editing with SuperCalc-2. Text to be entered must be preceded with an "escape character," a symbol which tells the program that the information which follows is alphabetic text.

The cursor control keys on the right side of the keyboard do not all function as expected, which compounds the irritation over the correction of minor format errors by making the natural correction action an incorrect one.

Another annoyance was the divergence of the program from VisiCalc format in such areas as the entry of formula functions and the "go to" command. Command formats are so similar in general that our VisiCalc professionals tended to forget which package they were using, until they entered a "go to" or formula and created an error.

Some additional enhancements would have been nice. The ability to give a cell a symbolic name, and later reference that name in a formula, is a feature that should not be omitted in a modern spreadsheet package. Additional statistical and scientific functions would also enable SuperCalc-2 to expand into new areas as corporate commitment to microcomputers becomes more widespread.

The file conversion utility provided as a part of SuperCalc-2 allows files to be converted from DIF format into SuperCalc-2 format. It does not, however, perform the opposite function. Files cannot be created by SuperCalc-2 and then used by other packages supporting the DIF format.



■ HANDS-ON EVALUATION

First impressions of SuperCalc-2 are very good. Installation is easy, and well documented in the separate installation manual. The documentation is well organized, with a good tutorial, and novice and experienced users alike are led quickly to a point of familiarity. Accounting personnel familiar with other spreadsheet packages found the tutorial almost unnecessary, they were able to use the package after only a glance at the quick start manual. The pocket guide provides the only form of documentation needed by an experienced VisiCalc user.

These experienced users did voice one complaint relating to the format of the commands. Generally, command format is very similar to that of VisiCalc, the package with which our users are most familiar. There are some exceptions, however, such as the "go to" command. Because of the general similarity they often found themselves entering VisiCalc commands and generating errors.

Two other complaints were heard from staff members at all experience levels. The first deals with text entry into a cell. Text to be entered must be preceded with an escape character, in this case a quotation mark. When a lot of text is to be entered, this can become something of a burden, particularly since this procedure is again the opposite of that of VisiCalc. The other complaint dealt with editing formulas and text, and changing or correcting data during input.

Neither the delete key nor the backspace key deletes a character during input or edit. The delete key doesn't do anything, while backspace only moves the cursor to the left. Character deletion is done by entering the "down arrow" on the keypad. According to the documentation, insertion of a character is also illogical; an "up arrow" must be entered to create space for the character. In reality, the "insert" key on the IBM keyboard allows data to be inserted without this extra step, a fact which we found experimentally. Everyone felt that the delete key and the backspace key on the IBM keyboard should function as normally expected.

□ User Interface

Menus: None.

Control characters: The cursor may be controlled using control characters which are arranged in a diamond pattern on the left side of the keyboard.

Function/special keys: The cursor may be controlled using the cursor control keys on the right side of the IBM keyboard.

Command language: SuperCalc-2 provides for the automation of the spreadsheet process through the use of command files. Command formats are identical to the online command formats with the exception of the cursor control commands. All SuperCalc-2 functions may be accessed from a command file, and control may be passed from command file to keyboard and back in order to "black box" spreadsheet applications.

Positive feedback: Feedback is provided in the form of an interactive command and field display. When a command code is entered, for example a "/L" for load, the program supplies the remainder of the command name, in this case "oad" so that the display reads: "/Load". The quit command requires verification before terminating the program, allowing data to be saved. Protected cells may not be deleted or overwritten, an error message results.

Status display: A 3-line status display is provided at the bottom of the SuperCalc-2 screen. The first line displays information about the current active cell, such as cell coordinates, format options at the individual level, contents, and protect status. The next line is the global status and prompt line. The global status is displayed when the program is in data entry mode, this includes such information as the column width of the active cell, the amount of memory available, and the last row and column in the spreadsheet. When the program is in the command mode, the current prompt is displayed on this line. The last line is the data entry and command line. In data entry mode, information is entered directly into the active cell. In command mode, 1 of 5 commands may become operative. These are the "go to" command, the "recalculate" command, the "switch window" command, the "resume command file" command, and the "/" command. The latter is the escape character used to access the SuperCalc-2 functions.

Help facilities: Help displays are available from any point in the program. They are always accessed by typing a question mark, and return to the point where the function was called.



Sorcim Corporation SuperCalc-2 Electronic Spreadsheet Package

□ Environment

SuperCalc-2 is extremely lenient in terms of operating environment. Only 48K bytes of RAM and a single disk drive are required for operation on the IBM PC. Additional memory may be utilized in 64K-byte increments up to a maximum of 512K bytes. Multiple disk configurations are supported, and the program may be run from any disk that is specified as the default drive. Hard disk operation is also supported. The distribution diskette is not copy protected, allowing both hard disk installation and the creation of backup copies.

Both 40- and 80-column displays are supported, allowing operation of the package by users having a Color Graphics adapter and a low-resolution monitor. Systems equipped with both monochrome and color monitors are also supported. The installation program allows modification of monitor screen dimensions, facilitating the use of non-standard monitors. Printer page dimensions and printer initialization strings may also be specified.

□ Documentation

The documentation supplied as a part of SuperCalc-2 includes a tutorial/reference manual, an installation manual, a pocket guide to operations and a "quick start" manual. The quick start manual is a unique little booklet entitled "10 Minutes to SuperCalc-2," and it provides a very simplistic overview of the basic commands as well as a small glimpse of the more advanced capabilities of the package. This was popular with experienced electronic spreadsheet users, who attacked SuperCalc-2 armed with only a quick skimming of this manual and an occasional reference to the pocket guide. The pocket guide is a particularly good one, providing all optional fields and parameters for every command and function. Those staff members that felt they couldn't wade their way through another tutorial manual found these two items to be sufficient to operate the package.

The tutorial sections of the manual describe a progressive, step-by-step procedure that takes the user through all the functions and capabilities of the package. It is augmented by several sample spreadsheets which are included on the distribution diskette. Also a part of the tutorial is the development of two sample spreadsheets: a break-even analysis and a simple profit projection. The tutorial sections include many screen illustrations as well as examples. Everyone found it simple to use, and there were very few complaints about the section being "too simplistic," it seems to strike a good balance between simplicity and effectiveness.

The reference section of the manual is sub-divided into five parts. The first two chapters contain a description of the cellular nature of electronic spreadsheets, and more specific information pertaining to the individual displays and status lines and how they relate to the cells of the spreadsheet. One section deals with data entry into a cell, and the differences between data entry and command entry. The commands for cursor movement are described here. The remaining two chapters deal with commands and formulas. The command descriptions are arranged by type rather than function, an unfortunate fact but not generally too much of a problem as the command name is usually the function performed. The command descriptions are clear,

and examples are provided. The section on formulas provides an alphabetic listing of the mathematical functions available. The manual is generally well organized, with many good examples in each section, and illustrations where appropriate. The appendices include an alphabetic listing of error messages, a discussion of the sort collating sequence used by SuperCalc-2, and a glossary of terms. The manual also contains an index which lists entries in both the tutorial and reference sections.

Also included with the documentation is the user's guide and reference manual for the file conversion utility provided with this package, SuperData Interchange. This provides an introduction and simple tutorial in the use of the utility, as well as a detailed description of the file structures created by SuperData Interchange. An example of a complete file is also included.

There were one or two shortcomings with the documentation provided in the package. No configuration data was provided in the manual or the appendices, we had to call Sorcim to get that information. Some things, like the IBM's "insert" key, just weren't mentioned in the manual. Finally, there was no mention of a customer support policy, or phone number, anywhere in the documentation. The phone number for Sorcim is not even included in the reference manual; we got it off the back of the pocket guide. None of these items detracted in any way from the functions of the documentation, they were more in the category of minor annoyances.

□ Functionality

SuperCalc-2 is an updated and improved version of SuperCalc, an earlier electronic spreadsheet package from Sorcim. It offers all of the traditional features of such packages, and a few additional features that seem to be directed at some common shortcomings in spreadsheet packages. While the features offered make the program more capable than some other electronic spreadsheets, there is still room for improvement. Users from our accounting department felt that the range of functions available for financial computation could be expanded, and some additional cursor control capability would also be nice.

Cursor movement is controlled via the "arrow" keys on the right side of the IBM keyboard. These keys are used for moving the active cell through the spreadsheet, and also for moving the cursor through text and formulas which are being edited. While the "home" key causes the cursor to move to the upper left of the display window, the "end" key has no effect: there are no commands for "go to end of row/column" or "go to end of form." There is a "go to specified location" command. Cursor positioning may be used to specify locations and ranges in formulas, a feature often called "pointing." To sum a section of a column, for instance, the cursor could be moved to the beginning cell, a colon entered, and then the cursor moved to the ending cell, thus specifying the range to be summed.

When text is keyed into a SuperCalc-2 cell, and the length of the text exceeds the length of the cell, the text is carried into the adjoining cell if that cell is clear. This feature is very nice when the spreadsheet results are to be used for report or display purposes, the time to create a sheet containing large amounts of text is drastically reduced. To



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snatch defeat from the jaws of victory, however, SuperCalc-2 requires that all text entries be preceded by a quotation mark. Entries not preceded by this escape character are assumed to be formulas. Experienced spreadsheet users had more difficulty with this, but everyone was prone to entering text without the escape character, only to have to space back into the line, add a space, then add the required quotation mark character.

Formatting control is pretty standard with SuperCalc-2. Four levels of format priority are available: global, column, row, and entry. Each level overrides the preceding one, a single entry can be specified with a different format than the rest of the spreadsheet. Column widths may be set from 0 to 127 characters. Numeric format can be specified as integer, floating point (with automatic scientific notation), exponential, or fixed point with two decimal places (dollars). Numeric values and text may be left or right justified independently. We had no problems with data formats.

SuperCalc-2 offers two additional formatting options: bar graphs and user defined formats. The bar graph format is a very limited capability for displaying a column of integer values as horizontal rows of asterisks. Most of the staff felt that this was generally useless, but one office jokester did manage to use it to create a picture of Snoopy. The user defined format option is quite a bit more interesting. Up to eight user formats may be specified, and each allows control of seven parameters dealing with the way numeric values are displayed. These parameters include a floating dollar sign to the left of the value, embedded commas (as in 1,000), negative values in parenthesis, and display zero as blank. Values may also be displayed as a percentage: the value is multiplied by one hundred and a percent sign appended before display. The number of decimal places may be fixed at zero to seven, and values may have a scaling factor applied before display. Some very nice looking expense report sheets were created using user defined formats, and in addition to a snappy appearance both the time to produce the sheets and the time to fill them out was reduced through clever formatting.

Load and save operations are also pretty standard in SuperCalc-2. All or part of a spreadsheet may be loaded from or saved to disk. During loading, non-overlapping spreadsheets may be loaded together, or spreadsheets may be overlapped. Spreadsheets may also be "consolidated," and one of four arithmetic operations may be selected to control the consolidation. Thus three spreadsheets, each forming a monthly sales report, could be consolidated to form a quarterly report, something we found very useful on expense reporting. Save options include saving values only, rather than the entire spreadsheet including formulas and formats, and the ability to overwrite existing files with the same name, or change it to a backup file by changing the filename extension.

Some fairly flexible print options are provided in this package. In addition to printing all or part of the spreadsheet, with or without borders, the output from the print function may be directed to disk or console. Disk output offers the same filename flexibility that the save command does. This command also allows formulas to be printed instead of values. While this seems, at first glance, to be of little value, the ability to produce a hard copy of a sheet and pass it to

someone else can be a real time and headache saver. Novice spreadsheet users tend to get confused when large formulas and large spreadsheets are created, circular and forward references are often the result. We found that the ability to print the sheet with errors and dump it on a more experienced user's desk enabled these problems to be solved in less time, with less impact on everyone's schedule. The console output feature is also a big time saver, as report formats can be checked and corrected without having to wait for the printer.

Formula generation and cell referencing are areas where the features offered by SuperCalc-2 are pretty much as expected. Numeric constants as well as cell references may be used in calculations. A formula may be relocated or duplicated, and the cell references contained in it may be maintained as absolute, or changed relative to the new location. SuperCalc-2 does provide a command for blanking rows/row segments and column/column segments. This can be very handy during the development of a complicated spreadsheet, and our more experienced users in particular were very glad to see this feature. Another handy feature is cell protection, SuperCalc-2 provides protection for rows, columns, blocks and segments of rows and columns as well as individual cells.

Two areas not addressed by SuperCalc-2 are the referencing of cells by name, and the specification of a cell as relative or absolute via a format-like command. Either one of these features would greatly enhance the use of constants in a large spreadsheet, for example a discount rate in a price list. Replication of formulas is hindered by having to specify "constant" cells as absolute every time a formula is copied into another part of the spreadsheet, especially as every cell reference must then be specified. Naming cells and then referencing that name in a later calculation can be a great labor saver, in the past we have been forced to resort to lists of constants and their cell coordinates to prevent endless searching for forgotten cells.

SuperCalc-2 provides two display windows, each with separate scrolling, format, title, and border control. Multiple display window operation can be very useful for projection and modeling. The window function in SuperCalc-2 allows the creation of both vertical and horizontal windows. The same region of the spreadsheet can be viewed in each window using different display formats or global display options, allowing inspection of both formulas and values in a particular region. A spreadsheet may be saved with the windows set, again a useful feature in a sheet used for modeling and projection.

One of the more interesting commands provided by SuperCalc-2 is the "execute" command: it is basically a command to execute a list of commands. The stated purpose of this command is to automate parts of the spreadsheet process, such as the loading and printing of an existing file, or to allow keyboard entry into an existing file by untrained personnel. All commands and data that may be entered at the keyboard may be entered via an execute file, and two additional commands are available. These two additional commands allow suspension and resumption of automatic execution, enabling keyboard entry. We found form of data entry very satisfactory for special functions such as the entry of bookkeeping data. Because the exe-



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cute command feature sets up a context for data entry, it prevents the keyer from adjusting other parts of the spreadsheet.

SuperCalc-2 supports all the standard arithmetic operations and functions. These include the obvious ones like addition, multiplication, and exponentiation as well as functions to find the average of a range of cells, or the sum of a range of cells. Functional support is sufficient for most accounting applications although more support could be offered in the area of complex financial computations. No support is offered for iterative modeling or statistics. Functions are provided for determining the maximum and minimum values in a range, and both common and natural logarithms are supported. A special function that can be very useful is a table lookup function. This can be helpful in both interactive modeling and in the generation of reports, one quick and easy use we put it to was in adjusting expense account allowances based on travel destinations. The logical operations IF, OR, AND, and NOT are supported as well. An additional feature of SuperCalc-2 is the range of date functions that are provided. These eight functions allow the reference and manipulation of date values in formulas, and also provide for the inclusions of the system date in the spreadsheet.

Last but not least in SuperCalc-2's list of features is the sort command. This command enables a user to arrange a row, partial row, column or partial column in ascending or descending order. Sorting is based on a collating sequence which is different from that provided by the ASCII character set, and which Sorcim claims "more closely arranges the characters in dictionary order." This collating sequence is thoughtfully provided in the appendix. A sort function is another function which can speed spreadsheet development, as data can be entered haphazardly over a period of time and quickly arranged in a logical order.

□ Ease of Use

SuperCalc-2 is easy to use right out of the box. Installation on the IBM PC is a trivial task that consists mainly of making a backup copy. Even if a non-standard printer or monitor is used the task is not difficult, though printer setup strings are not provided by the installation program and must be supplied by the user.

Operating the package is very straightforward. Help is available at all levels, and although the help screens are limited in scope they are almost unnecessary anyway. A command list is provided when the command delimiter is entered, and when a command code is entered "they are all one character" the rest of the command name is filled in automatically. Field prompts are supplied as needed. Users that were experienced with other spreadsheet packages found reference to the tutorial and reference manuals unnecessary, after a glance at the quick start manual and with pocket guide in hand they went right to work with the package. Less experienced users found the documentation to be very helpful.

Certain aspects of SuperCalc-2 seem to be a deliberate effort to address common shortcomings in electronic spreadsheet packages. These aspects of the package found particular favor with experienced users: the ability to blank ranges of cells, and the automatic carryover of text from

one cell to another. Speed of operation does not seem to be a problem, and recalculation can be disabled when a spreadsheet becomes large enough that data entry is slowed by the recalculation time.

There were a few areas where the package tended to annoy everyone, but especially the experienced personnel. An escape character is necessary to enter text into a cell, which everyone tended to forget. This became especially annoying when coupled with the difficulties encountered in editing a line of input. The backspace key does not delete characters, and the delete key does not work at all. Deletion of a character is accomplished by using the "down arrow" key on the cursor control (numeric) keypad to the right of the IBM keyboard. According to the documentation, use of the "up arrow" key is required to insert characters. Our ever inquiring technical specialist found that the insert key does work on the IBM, however, eliminating the need to use the arrow key. Another problem area from the point of view of experienced VisiCalc users was the similarity of commands to that package. Command formats were so similar that they tended to forget which package they were working with, and then fell into the trap of entering a VisiCalc command which was different than the corresponding SuperCalc-2 command. This occurred most often with the formula entry within a cell; VisiCalc requires an "@" as the first character of a function label such as "@AND". SuperCalc-2 does not, and the use of the "@" is hard to un-learn. Another problem is the "go to" command. These "not-so-similar" commands were not a problem with first time users, or occasional users of other packages.

□ Support

There is no mention made of a customer support policy in the documentation supplied with SuperCalc-2, nor is a customer support phone number provided. In fact, the phone number is only provided on the back of the pocket guide and the quick start manual, it is not provided in the reference manual. We made a call to Sorcim in San Jose first thing in the morning, California time, and were told that all the customer support lines were busy and someone would return the call. About an hour later our call was returned by a pleasant and knowledgeable young lady who took the time to answer our many questions about customer support, as well as technical questions concerning memory options and file compatibility.

There is no mechanism for local dealer support or regional support from Sorcim. All support is direct from the factory. While there is no notification of problems or new releases directly to customers, notifications are published in Sorcim's newsletter, which may be obtained by calling them during normal business hours. Updates for problem correction may be obtained by calling a separate number, which was provided during our call.

□ System Interface

Included in the package with SuperCalc-2 is a file conversion utility called SuperData Interchange. This program may be used to do four types of file conversions. It may be used to convert files from SuperCalc format into ASCII fields separated by commas, or into a special format file called an SDI file. The former file type is similar to that created by many database management programs, and



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Sorcim states that the purpose of this conversion is to allow the use of SuperCalc-2 data by such programs. The stated purpose of the conversion to SDI format is to allow access to SuperCalc-2 by custom programs.

Files may also be converted from SDI format into SuperCalc-2 format. SDI format is a superset of the popular DIF format, so DIF files can be used as input to SuperCalc-2. This allows data from database programs such as dBase II or DataStar to be converted for use with SuperCalc-2. Unfortunately, SDI format files may not be used by packages supporting the DIF file structure, a fact which is not mentioned in the SuperData Interchange manual but which we determined experimentally. This was later verified by our call to Sorcim.

The SuperData Interchange manual provides extensive information on the format of the SDI file, as well as an example. Information is also provided on the expected format of a comma separated value file. The manual also indicates the differences between a DIF format file and a SDI format file.

Additional information is provided on the compatibility of SuperCalc-2 files with files created by the earlier SuperCalc. Information is also provided on how formulas and values are converted into the various file formats, and the manual warns of some pitfalls that may trap the unwary user.

Vendor Experience

SuperCalc-2 is a new product: the copyright date on the documentation that we received was April 1983. It is, however, basically an updated version of SuperCalc, which has been around for some time. Sorcim has existed for about three years, and has other business oriented products available, including a further enhanced version of SuperCalc called SuperCalc-3.

■ PRODUCT OVERVIEW

Terms & Support

Terms • SuperCalc is available for purchase only from Sorcim, computer dealers and software retailers; it is possible that significant discounts may be obtainable through some retail channels.

Support • telephone support line; all support direct from the factory • notification of new releases is published in a Sorcim newsletter; the newsletter may be obtained by calling the telephone consultants.

Component Summary

SC2.COM is a program containing the majority of the SuperCalc-2 electronic spreadsheet package.

SC2.OVL is an overlay program containing elements of the SuperCalc-2 electronic spreadsheet package.

BUDGET.CAL, BRKEVN.CAL, CHECKS.CAL, SAMPLE.CAL, and TENMIN.CAL are sample spreadsheets provided with the SuperCalc-2 package as a part of the tutorial.

SDI.COM, SDI.OVL are program and program overlays containing the SuperData Interchange file conversion utility supplied with the SuperCalc-2 package.

INSTALLS.COM is an installation utility provided with the SuperCalc-2 package.

COLOR.COM, MONO.COM are programs used to select between black and white, and color monitors on systems that are equipped with both; supplied as a part of the SuperCalc-2 package and used before starting the SuperCalc-2 program.

LCNS: license fee.

AUTOEXEC.BAT, AUTOBW.BAT, AUTO40.BAT, AUTO40BW.BAT are batch files used to start SuperCalc-2 automatically upon startup or reset:

\$295 lcns

Computers & Operating Systems Supported

SuperCalc-2 runs on the IBM PC or PC/XT using PC-DOS and also on other 8086-/8088-based systems using MS-DOS or CP/M-86 or MP/M-86. It also runs on Z-80 based systems using CP/M or MP/M.

Minimum Operating Requirements

The minimum memory requirements for systems with an 8088 or Z80 processor is 48K bytes; 8086-based systems require 64K bytes. Additional memory to 512K bytes can be used. One disk drive is required and multiple floppy drives are supported; the package may be installed on a hard disk. A monochrome display or color graphics adapter is required; a printer is optional.

Features

Spreadsheet Size • spreadsheet size is 63 columns x 254 rows, for a total of 16,002 cells; maximum spreadsheet size is a function of system memory, and varies from a minimum of 1K bytes for a system equipped with 48K bytes of RAM to 465K bytes for a system with 512K bytes of RAM.

Command Type • most SuperCalc-2 commands utilize an escape sequence followed by an alphabetic code; some special commands consist of one special character such as an exclamation mark or semicolon; cursor control is performed using the cursor control keys on the right side of the IBM keyboard, or control characters which are arranged in a diamond pattern on the left side of the keyboard.

Financial Functions Supported • the only financial function provided is the Net Present Value (NPV) function.

Statistical Functions Supported • COUNT—counts list items; SUM—finds the total of list; AVERAGE—provides average value of items in a list; MAX—finds largest value in list; MIN—finds smallest value in list.

Cell Reference • cells may be referenced by cursor position and cell coordinates; references may be relative or absolute, and a cell may be referenced as part of a range or block of cells as well as individually.

Window Capabilities • SuperCalc-2 provides a dual window capability, with windows created both vertically and horizontally; both windows offer a full range of functions; scrolling may be synchronized between windows.

Range Facilities • commands that operate over a range of cells include: blank cell, copy cell, load (when loading a partial spreadsheet), output (to printer, terminal, or disk), protect cell, replicate cell, save, and unprotect; commands that operate on a range of rows or columns are: delete row or column, format row or column, insert row or column, and move row or column; some commands operate on single rows or columns, these include the arrange command, which sorts the entries in a row or column, and the title command, which locks all rows above the cursor and/or all columns to the left of the cursor into the title.

Print Facilities • spreadsheet information may be sent to printer, disk or display; all or part of a spreadsheet may be printed, and optionally the contents rather than values of the cells may be printed; printer setup strings may be set from the output command, and other optional parameters include page length and width, double space, and single-sheet paper; the disk output facility allows the creation of a backup file as well as a print file.

Load/Save Facilities • all or part of a specified spreadsheet may be loaded with SuperCalc-2; in addition the load command provides a consolidate option, which allows the arithmetic combination of two spreadsheets when the second is loaded; the save command also allows part or all of a spreadsheet to be saved; the command provides for the creation of a backup copy of the file, and also allows changes in filenames as well as providing a directory of the disk; a spreadsheet may be saved as values only, without formula information.

• END



SORCIM Corporation SuperCalc-3

Spreadsheet, Data Management & Graphics Package

■ PROFILE

Function • the development of financial reports, budgets, balance sheets, and forecasts using an electronic image of a conventional accountant's spreadsheet; includes facilities for data management and the generation of graphs based on spreadsheet data.

Computers/Operating Systems Supported • IBM PC or PC/XT using PC-DOS, other 8086-/8088-based systems using MS-DOS.

Configuration • requires a minimum of 96K bytes of memory, 2 floppy disk drives or a hard disk, and a display device; optional supported devices include Epson MX 80/100 and FX 80/100 printers, all HP plotters, and the IBM Instruments plotter.

Current Version/Version Reviewed • Version 1.0/Version 1.0 for IBM PC.

First Delivery • September 1983.

Number of Installations • information not available.

Comparable Products • Lotus 1-2-3, Microsoft Multiplan, VisiCorp VisiCalc IV.

Optional Associated Software • none.

Price • \$395 retail price.

Vendor • SORCIM Corporation; 2310 Lundy Avenue, San Jose, CA 95131 • 408-942-1727.

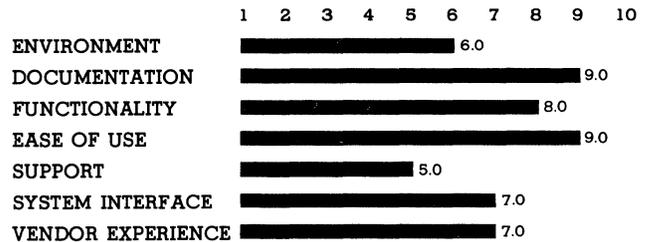
Canada • currently no Canadian distributor.

■ ANALYSIS

SuperCalc-3 is a very good-looking successor to SORCIM's last electronic spreadsheet, SuperCalc-2. It includes many of the latest features available in the product area, such as the ability to draw and plot business graphs based on the spreadsheet data, and data management capabilities such as selective extraction, sorting, and searching facilities. It contains a wide range of financial functions for business use, and is very efficient in its use of computer memory.

Though SuperCalc-3 performs some functions better and with more ease than the current leader in the spreadsheet arena, Lotus 1-2-3, it lacks just enough of the finer features of 1-2-3 to keep it from taking over the top spot. SuperCalc-3's graphing functions are easier to use and more flexible, and the data management facilities are quite excellent. But 1-2-3 beats it quite handily in such areas as speed and flexibility of recalculation, use of all of

PRODUCT QUALITY RATINGS*



*For an explanation of rating criteria, please refer to the Spreadsheet Features section in the Software Evaluations (805) report. The Overall Package Average is 7.3.

the PC function keys and keypad keys, and statistical and table-lookup functions available.

If your spreadsheet requirements do not stretch the state-of-the-art itself, then SuperCalc-3 should be an excellent choice, and you will save some money too. It is an easy-to-use and highly capable product. If you have the most complex spreadsheet requirements imaginable and money is not an issue, then Lotus 1-2-3 may still be the program choice, at least until the next version of SuperCalc appears.

□ Strengths

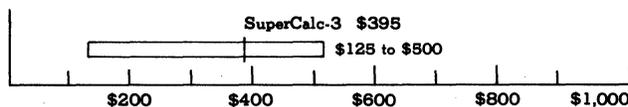
The graphics capabilities of SuperCalc-3 are powerful, flexible, and easy to use. All graphing capabilities are built-in and do not require the exchanging of floppy disks. This makes the fine tuning of a graph for optimum visual impact simple and efficient. It supports 7 different graph types, and graphs may be viewed on the screen prior to printing or plotting. Though it draws graphs to the best of its ability on a monochrome monitor, a graphics monitor provides the best results. The titling of graphs and the labeling of axes is simple and straightforward. Color fill for graphs on the display monitor is fast, and all options have default values that allow a novice to immediately begin producing high-quality graphs.

SuperCalc-3's data management functions are not quite as powerful as Lotus 1-2-3's, but still provide some very nice capabilities in an easy-to-use manner. In addition to search, sort, and extract operations, SuperCalc-3 provides a selective extraction function that allows you to view each record as matches are found and individually decide whether to accept or reject the record.

SuperCalc-3 also contains a good selection of financial functions necessary for business applications. Built-in functions for the calculation of Net Present Value, Internal Rate of Return, Payment, Future Value, and Present Value

PURCHASE PRICE RANGE

Software Price Range



SORCIM SUPERCALC-3 PRICING • open bar shows the typical range of prices for SPREADSHEET software used in a corporate environment • the vertical line within the bar graph indicates the price of SuperCalc-3, the evaluated product, relative to the price range of similar products.



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are provided. Unfortunately, these appear to be offset by the lack of a similar number of statistical functions provided by other spreadsheets, such as variance and standard deviation calculations.

□ Limitations

It is surprising that more spreadsheet programs that are battling for position have not adapted the recalculation modes available in both Multiplan and Lotus 1-2-3. SuperCalc-3 adopts the original VisiCalc method of forcing the user to design his spreadsheet such that all calculations can be performed in a single left to right or top to bottom pass. Making a person change his way of thinking in order to use a computer is exactly what causes a lot of fear and worry for novice computer users. The best spreadsheets do not place this artificial burden on the human's shoulders, but rather make multiple passes over the spreadsheet if necessary in order to complete all calculations. Some even allow for certain types of circular references, where 2 cells reference each other's value. SuperCalc-3 does not allow such freedom of will in the arrangement of the spreadsheet. While this will not stop you from creating a particular type of spreadsheet, it will force you to think about how to arrange it according to SuperCalc-3's rules.

There are essentially 2 current approaches today for the handling of very large spreadsheet applications. One method is to provide support for extremely large spreadsheets, with sophisticated options for combining and consolidating smaller spreadsheets into the final large version. The second method supports some means of linking separate spreadsheets so that whenever one changes, the others will be updated the next time they are loaded. One spreadsheet may reference cells from another by name, for instance. It seems the second method is superior, allowing the user to break down a large application into manageable pieces that can be easily manipulated and which do not require large amounts of memory. SuperCalc-3 supports the very large spreadsheet model. While applications can be still broken into smaller pieces, it is a much more difficult job at the end to consolidate all of the pieces in just the right manner.

The last major improvement in spreadsheet technology that has not yet appeared in the SuperCalc series is the ability to reference a cell by an explicit name or by relative location. The ability to name a cell is by far the more desired capability. It brings meaning to a set of spreadsheet formulas that otherwise are just a long series of coordinate references. It not only leads to easier understanding of a spreadsheet seen for the first time, but allows it to be created more quickly and with less possibility of error. While you might easily enter BB127 when you mean BB126, it is unlikely that you will make a mistake if you are entering the formula as $INCOME = REVENUE - EXPENSES$.

■ HANDS-ON EVALUATION



SuperCalc-3 is distributed on 2 single-sided floppy disks. It is pre-installed for the IBM PC, but also contains

installation procedures for configuring other terminals that may be used running under MS-DOS. The floppies may be easily backed up or copied to a hard disk. Many control files are included with the system for the proper installation of the desired printer and plotter routines to match your system, and for installation on a hard disk. If the installation files provided are used for installing the system onto a hard disk, they will erase all unnecessary control files after installation is complete, leaving the user with as clean a directory as possible. Even if the hard disk installation procedure is followed, however, when you exit the program, it insists on reloading COMMAND.COM from drive "A" instead of the default drive, a common failing of many programs.

SuperCalc-3 takes advantage of color for the display of the spreadsheet but does not appear to allow you to change the color selection to suit your own taste. The command format is very similar to VisiCalc's, with a leading slash signaling the start of a command. VisiCalc users will be able to immediately begin creating spreadsheets and will feel quite comfortable until they find the places that are different. For example, SuperCalc-3 uses the equals sign, "=", as the GO TO operator, instead of VisiCalc's "G". Some of the commands are available on the function keys, the most useful being F9 and F10 for viewing graphs on the screen and printing graphs. It was disappointing to find that not all of the cursor control keypad keys are recognized by the program, particularly Page Up (PGUP) and Page Down (PGDN) for rapid movement through the spreadsheet. The line by line scrolling is quite slow; we quickly learned to take advantage of the GO TO command.

At any point, you may hit the question mark or the F1 function key to ask for Help information. The program immediately displays the portion of the Help file relevant to the place you were at in the program. Most of these Answer Screens, as they are called, are a single display page and therefore are sometimes a little brief, but the more complicated topics are covered in 2 or 3 successive display pages. The Answer Screens for the View command actually include a sample graph display on the last page.

It was easy to use and experiment with the graphing capabilities. Given the sample data and graph files, it is a simple task to run through all of the various options and view the results on the screen. The speed with which a new graph is drawn on the screen is quite good, with the pie charts being a little slower than the bar and line graphs. It appears that much effort was expended concentrating on the performance of the difficult items; the simple things like scrolling up or down one line could still use some work.

A moderately complex budget model was converted from a VisiCalc file using the SuperData Interchange conversion utilities and installed on SuperCalc-3 with no problems. The recalculation speed is not lightning fast, but is comparable with many other spreadsheets. Though a VisiCalc user will be able to immediately be productive, a Multiplan user will have to learn to prefix commands with a slash all over again.



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□ User Interface

The SuperCalc user interface is typical of the spreadsheet genre. Aside from the cursor movement, which is a large part of the operation of a spreadsheet, the interface consists mainly of single-character commands chosen from a one-line display of legal possibilities. The backspace key can be used to successively back out of the middle of any particular command.

Menus: After hitting the slash to enter command mode, the key command letters are displayed in the prompt line. Once a particular command is chosen, you are prompted with full words for the selection of the various command options. It is unfortunate that full words are not also used at the command level.

Control Characters: Control characters are not normally used for commands. On systems without cursor control keys, control keys may be used for cursor movement. On systems without function keys, control characters may be used to perform the 4 operations assigned to the function keys. If necessary, control codes may be specified as printer startup characters in order to invoke particular print styles such as double width or compressed.

Function/Special Keys: Only 4 of the IBM PC function keys are utilized by SuperCalc-3. The F1 key is used as the AnswerKey to call up Help information, F2 will clear the current entry, F9 will plot the current graph, and F10 will view the current graph. The arrow and Home keys on the cursor keypad are used for cursor movement, but the Page Up (PGUP), Page Down (PGDN), and end keys are not utilized. The tab and backspace keys are also used for cursor positioning functions.

Command Language: SuperCalc-3 provides the ability to create Execute Files, which are the spreadsheet equivalent of DOS batch files. Each command with all desired options can be represented as a series of option selection characters, just as they would be entered from the keyboard to perform the same function.

Positive Feedback: Positive feedback is provided for most operations, either in the form of obvious results or an on-screen error message in red. Operator confirmation is always requested for destructive operations, including exit from the program.

Status Display: The bottom 3 lines of the display form the status, prompting and entry lines for SuperCalc-3. The status line shows the current direction the cursor will move if you press the ENTER key, the location of the active cell, and the contents of the active cell. The prompt line displays a list of command letters or option descriptions that are valid at that moment if a command is being processed, or provides secondary status information if you are entering data into a cell. The last line is the entry line where all commands and data are entered.

Help Facilities: At any point, the AnswerKey ("?" or F1 function key) may be depressed for a Help screen display, or Answer Screen, as SORCIM calls it. The Answer Screen always displays that portion of the Help information that is relevant to where you were when the AnswerKey was struck. Most Answer Screens are several screen pages long, with detailed information on all options available at

that point. When all of the Help information has been read, you are returned to the exact point at which you pressed the AnswerKey.

□ Environment

Though the memory requirements of SuperCalc-3 increased to 96K bytes from SuperCalc-2's 48K-byte limit, the requirements are still very reasonable given the functionality provided. Support is provided for both the monochrome monitor and the color graphics monitor, including the ability to display graphs, though the monochrome graphics capabilities are limited. There is insufficient room for SuperCalc-3 and any reasonable data files on a single drive system, making 2 disk drives or a hard disk mandatory. Installation on a hard disk is fully supported, though the program re-reads COMMAND.COM from drive "A" when it exits.

Support is provided for standard Epson graphics printers, all HP plotters, and the IBM Instruments plotter for the drawing of graphical output. Eight different text fonts may be used for creating graphs on a plotter.

□ Documentation

The documentation supplied with SuperCalc-3 includes a combination tutorial/reference manual, a 20-page start-up guide entitled "10 Minutes to SuperCalc-3," a data file conversion manual, and 2 reference cards. The start-up guide provides a simplistic summary and introduction to the usage of SuperCalc-3 that is suitable for anyone willing to jump right into things. With the help of a couple of sample spreadsheets provided on the program disk, it takes you on a quick tour of the SuperCalc-3 capabilities, from creating a spreadsheet to producing graphs on screen and on the printer.

For those who wish to approach things at a more deliberate pace, the tutorial section of the User's Guide and Reference Manual provides an extensive 11-lesson course in Learning to Use SuperCalc-3. It thoroughly covers all of the capabilities contained in the product, including formatting, output, graphing, and advanced capabilities, ending with lessons on a sample project spreadsheet and a break-even analysis. Numerous full-screen pictures and full-color graphs appear in the manual to illustrate the various features.

The tutorial section is followed by a reference manual section that contains detailed descriptions of all of the slash ("/") commands available in alphabetical order. If you are an experienced spreadsheet user, you should be able to skip right to the reference manual and begin using the program. The first item of every command description is a clear graphic, showing all of the options available from the command. The command section is followed by the descriptions of all of the built-in functions, and 10 appendices that describe everything from compatibility constraints with SuperCalc and SuperCalc-2, to error messages, printer and plotter fonts, and file maintenance procedures.

Two reference cards (AnswerCards) are provided. The first displays, in a nice graphical layout, all of the slash commands and their respective options, function and special key assignments, built-in functions, and an



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explanation of the screen layout. The second shows examples and provides guidance on the production of graphs and the usage of different text fonts. Also provided is a Data File Conversion manual, describing in detail SORCIM's Super-Data Interchange file format and the operation of the various file conversion utilities.

Functionality

SuperCalc-3 is a much enhanced and improved version of SuperCalc-2. The primary new features, graphics and data management, are the result of Lotus 1-2-3's expansion of the spreadsheet genre from electronic accountant to integrated multifunction package. SuperCalc-3's contribution in these areas is not so much in the way of greater capabilities, but rather primarily in simplicity and ease of use. In a direct, feature-by-feature comparison, Lotus 1-2-3 usually provides a little more power or flexibility, while SuperCalc-3 provides a good foundation of capability and makes it easy to use.

SuperCalc-3 provides all of the traditional spreadsheet capabilities and operations. But it appears that the graphics and data management capabilities received almost all of the attention in the evolution of SuperCalc-2 to SuperCalc-3, leaving the new product slightly behind some of the competitors in the little things that make life pleasant. Cursor movement within the spreadsheet is done via the arrow keys on the numeric keypad. While the Home key will bring you to the upper left corner of the worksheet, the other keypad keys are not used. You must use the GO TO function ("=") for rapid movement to the beginning of a line, the end of a line, the end of the worksheet, or to the next page. These are mostly minor annoyances that are overshadowed by the real functionality of the package. The support for multiple windows not only allows the screen to be split into 2 windows, horizontally or vertically, but also allows data to be displayed in one window while the formulas behind the data are displayed in the other.

The arithmetic functions available in SuperCalc-3 are fairly typical, with a slightly better selection of financial functions and an absence of some of the more powerful statistical functions. A single-column lookup capability is provided, but the "choose operator present" feature in other systems is missing.

The graphing facilities support the creation of 7 types of graphs: pie charts, bar charts, stacked bar charts, line plots, hi-lo graphs, X-Y plots, and area graphs. Up to 10 different variable ranges may be specified for a graph. Up to 9 graphs may be described and stored for each spreadsheet, and stored graphs may be loaded for use in other spreadsheets. Scaling of the X and Y axes can be done automatically, or overridden by manual control. All graphs may be rapidly viewed on the display screen at any time, allowing fine-tuning of the graph layout prior to plotting. A graph may be restricted to a single quadrant, allowing up to 4 graphs to be plotted on a single page.

SuperCalc-3 provides good control over the textual information that may accompany a graph. Textual information can be provided for the main and subheadings, X and Y axis labels, time labels, and legend.

Each label may be plotted in one of 8 different text styles, or fonts, such as Roman, Italic, or Script. Labels are shown on the display screen in a single font.

Like Lotus 1-2-3, SuperCalc-3's model of data management provides some very useful capabilities, though they cannot really be thought of as database management. The operations provided allow the sorting, searching, and extraction of records within the spreadsheet work area, where each spreadsheet row is treated as a data record and each column as a data field. The Arrange command provides a dictionary sort of rows or columns, in ascending or descending order, with up to 2 fields specified as the sort keys. The Data Management command provides the searching and extraction operations. After defining an input range to be used as the database, and an output range where selected records are to be stored, you specify with the Criterion option the group of records in which you are explicitly interested. These criteria can be specified as exact matches, such as the name "Smith," or as logical operations, such as "Price less than \$500." The selective extraction option is a useful capability that causes SuperCalc-3 to stop on each matching record, highlight it, and ask you if you wish to include it in the extracted data.

SuperCalc-3's execution file support provides an easy-to-comprehend means of creating canned "programs" that guide a user through a spreadsheet application, prompting him for input when necessary. Almost all operations available interactively from the command line may be specified in the execute file, including cursor movement. When the program detects an ampersand in the execute file, it unlocks the keyboard and accepts user input. When finished, the user enters another ampersand command, and execution of the control file resumes.

Ease of Use

SuperCalc-3 is simple and straightforward to use, and comes pre-installed for the IBM PC, ready to go. Experienced spreadsheet users will have no problem adapting to the package. The lack of full-word prompts for commands themselves makes it necessary for the novice to study the tutorial and perform the "Ten Minutes to SuperCalc-3" exercises before being able to take it for a spin, but there should still be little problem. The ease of creating, viewing, and plotting graphs makes this skill enjoyable to learn.

There is still a little room for improvement in the user interface, particularly in the area of cursor movement and the use of all of the available keypad keys. VisiCalc users will find many similarities of operation, but may be easily misled and eventually stumble on the occasional difference, such as the GO TO character being an equal sign "=", or the lack of an "@" in front of all function names.

Support

Purchasers who return their registration card are entitled to free customer support assistance during normal working hours (Pacific Standard Time) from a dedicated support group at 408-942-0522. SORCIM also distributes



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a quarterly news magazine called SuperNews to registered purchasers, which provides applications tips, new product announcements, and information on enhancement availability. The original disk label is also needed in order to obtain enhancement updates. No further support details were provided in the product documentation.

□ System Interface

A file conversion utility is provided with SuperCalc-3 called SuperData Interchange, along with a separate manual for the utility. This provides the mechanism necessary to allow data from SuperCalc-3 files to be read by other user programs, and for collecting information from other sources into a SuperCalc-3 file. The 4 file types supported are: CAL files, SuperCalc-3's own internal binary format for holding spreadsheets and formulas; CSV files, comma-separated value files that are used for transferring ASCII information to and from the SuperCalc-3 spreadsheet; SDI files, SuperData Interchange files that are a superset of the popular DIF files that allow the entire spreadsheet, formulas and all, to be defined in readable format; and VC files, VisiCalc internal binary file format.

As is becoming rapidly common with many vendors, SORCIM's provision of its own superset of the DIF (Data Interchange Format) file format means that DIF files may be transferred into SORCIM's product line, but that once there, they cannot be transferred intact to any other vendor's product line. Though the data can be printed in such a way that it can be read by other products, the formula information that makes the spreadsheet work is locked into SuperCalc-3. The documentation of the SDI format is extensive and complete, but so many new formats based on DIF have arisen recently that they have defeated the whole purpose upon which DIF files were based—the creation of a Data Interchange Format that multiple products could use. If everyone continues to invent his own format for data interchange, there won't be much interchanging of data going on.

□ Vendor Experience

SuperCalc-3 is the latest enhancement in the SuperCalc product line. SORCIM has been very diligent in keeping its spreadsheet offering up to date considering the evolution occurring in the spreadsheet marketplace. Though only on the market since September 1983, it is based on the successful SuperCalc and SuperCalc-2 product offerings. SORCIM has existed for approximately 3 years and has other business-oriented products available.

■ PRODUCT OVERVIEW

□ Terms & Support

Terms • SuperCalc-3 is available for purchase only from SORCIM Corporation, through computer dealers, software dealers, and mail-order firms throughout the U.S. and internationally; quantity discounts are available to volume corporate purchasers.

Support • technical support is provided directly from SORCIM to registered purchasers by a dedicated support group at 408-942-0522, from 8:00 AM to 5:00 PM Pacific Standard Time; no toll-free number is available; registered purchasers are

notified of new product and enhancement releases through a quarterly publication.

□ Component Summary

SuperCalc-3 is delivered on 2 single-sided floppy disks, the Program disk and the Utilities disk. The Program disk contains the SuperCalc-3 object modules and control files for installation. The Utilities disk contains various device drivers that are used during installation. The important components are:

SC3.COM is the main SuperCalc-3 program file containing most functions; SC3.OVL is the overlay used by the main object program during execution; SC3.HLP is the test file where the HELP information is stored; SG*.OVL is the overlay used by the main object program during execution. FONT.DATA is the data file of various printer font definitions; SC3MSG.PRN is the message file used to prompt the user during installation; *.COM are the utility programs used in installation control files; *.BAT are the control files to perform device installation; and *.CAL are sample spreadsheets used in the tutorial manuals.

SuperCalc-3:

\$395 *lcns*

□ Computers & Operating Systems Supported

SuperCalc-3 will run on the IBM PC or PC/XT using the PC-DOS operating system, Version 1.1 or 2.0, and other 8086-/8088-based systems using MS-DOS.

□ Minimum Operating Requirements

SuperCalc-3 requires a minimum of 96K bytes of memory and 2 floppy disk drives or a hard disk, and a display device. Optional supported devices include Epson MX 80/100 and FX 80/100 printers, all HP plotters, and the IBM Instruments plotter. SuperCalc-3 will take advantage of a color graphics monitor if available.

□ Features

SuperCalc-3 is an electronic spreadsheet package for the development of financial reports, budgets, balance sheets, and forecasts. It includes facilities for data management and the generation of graphs based on spreadsheet data.

Spreadsheet Size • variable, depending on system memory; blank cells are not allocated storage, allowing more cells for a given unit of storage than most spreadsheets; maximum of 63 columns and 254 rows possible.

Command Type • single-character commands entered from a list of characters; expanded prompting provided for option selection within a given command.

Functions Supported • financial functions include net present value, internal rate of return, payment, future value, and present value; statistical functions include average, minimum, maximum, sum, and square root; also contains calendar and date manipulation functions.

Cell Reference • can be done via absolute cell coordinates, or by pointing using cursor movement functions; no cell naming or relative cell referencing capabilities supported.

Window Capabilities • screen may be split into 2 windows horizontally or vertically with independent global specifications and formats; may display cell contents in one window while displaying cell formulas in the other.

Range Facilities • a row or column range of cells may be specified for any command where a group of cells could be logically specified; copying of cells may be done on a rectangular block.

Graphing Facilities • extensive graphing capabilities, including support for monochrome or graphics monitor, graphics printer, or multicolor plotters; 8 different text fonts may be specified for graph titles and labels when plotting; up to 4 graphs may be plotted on a single page.

Load/Save Facilities • full or partial worksheets may be saved, loaded, or consolidated; graphs may be saved and loaded

LCNS: license fee.



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separately; saved files may contain data and formulas, or data only.

Execution Facilities • can be executed from "canned" control files for the creation of "black box" worksheets that lead an untrained user through an application; includes ability to accept interactive input from the user, then resume execution of the control file.

Data Management Facilities • supports ability to sort, search, and selectively or unconditionally extract records from a worksheet that match a given selection criteria.

Other Facilities

File conversion utilities are provided to convert between various

supported file types. This includes the ability to read DIF files or actual VisiCalc worksheets, and to create ASCII value files or a superset of the DIF file format called SuperData Interchange.

Utility programs to actually revise and verify the SuperCalc-3 executable program are provided as an aid in correcting problems that may be encountered. Quick program "patches" allow minor problems to be corrected without the hassle of acquiring a fixed version of the program, and sometimes allow major problems to be solved immediately, saving time in important situations.

• END



Sorcim Corporation SuperWriter Word Processing Package

■ PROFILE

Function • word processing, report production, and document development.

Computers/Operating Systems Supported • IBM Personal Computer, PC/XT, Compaq Personal Computers using MS-DOS, Columbia Personal Computers using MS-DOS, CP/M, CP/M-86, Concurrent CP/M-86.

Configuration • 64K bytes of RAM, one double-sided diskette drive, 80-column monitor-monochrome or IBM-compatible color/graphics adapter desired; operating system is PC-DOS 1.1 or 2.0 equivalent.

Current Version/Version Reviewed • Version 1.01/Version 1.01 for the IBM PC.

First Delivery • September 1983.

Number of Installations • information not available.

Comparable Products • MicroPro WordStar, Satellite Software WordPerfect, Peachtree, PeachText, Mark of the Unicorn Final Word.

Optional Associated Software • none.

Price • \$295 retail price.

Vendor • Sorcim; 2310 Lundy Avenue, San Jose, CA 95131 • 408-942-1727.

Canada • no offices in Canada.

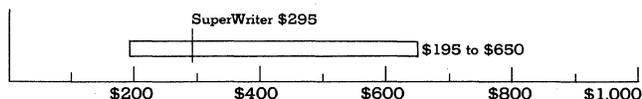
■ ANALYSIS

SuperWriter is a word processor which is menu driven and highly dependent on control key command sequences and format coding from the keyboard. It contains most of the features normally found in microcomputer word processors, such as automatic page numbering, automatic backup file when a document is saved, print spooling, proportional printing, a mail merge, and a spelling check.

The five main functions in the menu map are Edit, Print, Spell, Directory, and Utility. From these main functions you are prompted through more detailed operations.

Configuration flexibility of the product is generally good, although many popular printers are not listed on the printer selection menu. This tends to reduce user confidence, but there seems to be no practical problem since the general-mode printer selection works with nearly any dot-matrix printer and most popular word processing printers ARE specifically included.

PURCHASE PRICE RANGE



SORCIM SUPERWRITER PRICING • open bar shows the typical range of prices for WORD PROCESSING software used in a corporate environment • the vertical line within the bar graph indicates the price of SUPERWRITER, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	=====									
DOCUMENTATION	=====									
FUNCTIONALITY	=====									
EASE OF USE	=====									
SUPPORT	=====									
SYSTEM INTERFACE	-----									
EXPERIENCE OF VENDOR	=====									

*For an explanation of rating criteria, please refer to the Word Processor Features section in the Software Evaluations (805) report.

The learning curve for SuperWriter may be unexpectedly long. Its ancestry in CP/M versions that had to operate on a wide variety of keyboards shows in the product and documentation, and the not-so literate word processor user will find himself constantly referring to the mini-menu map provided in the package to get the IBM PC equivalent of a function. Sorcim has provided stick-on editor control keys to aid in the learning process.

The word spelling checker contains 20,295 words, and is proficient in finding misspelled words, but correction of identified words is unusually tedious.

Word processors are very personalized and subjective packages, and some users may find that SuperWriter meets their requirements exactly. But there are no particular features or capabilities in SuperWriter which are not present in at least as effective and pleasing a form in other more popular word processing products.

□ Strengths

Many businesses will be particularly pleased with the error recovering capabilities of the product. The automatic backup saves the previous version of a document each time a revised version is saved. You cannot edit the backup, but it can be included in your text if you rename it. This automatic backup protects beginners from the common "Oh gosh, I thought I saved that" error.

The users' manual provides detailed instructions in most every phase of using this word processing package. It includes full illustration of all menus and answer screens in SuperWriter, so a user has no difficulty relating a problem on the screen to a solution in the document.

The mail merge and spelling check facilities of SuperWriter are included as standard features, rather than available at additional cost. The cost of the product is thus considerably less than other popular, unbundled, systems for users who must have both merge and spelling check facilities.

□ Limitations

SuperWriter is very close in structure to WordStar, but the



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similarity does not extend to the details of the command structure. There are enough common commands between the products to lull WordStar users into thinking that the products are compatible, but some incompatibilities exist at very significant points, particularly in the area of deletions.

The print queueing feature of SuperWriter does not support queueing of jobs, so some of its utility is lost. A user may not quickly select and queue several short documents, for example.

Spelling correction is not automatic, nor is it particularly easy to accomplish. You can check the spelling in your document and mark misspelled words, but corrections will require reentry of the edit mode and manual adjustment of formats afterward.

The automatic execute file feature would permit users to define repetitive tasks and execute them at a single key-stroke, but the files must be developed using a complex command language which is difficult to master and which can produce catastrophic errors if mis-used.



■ HANDS-ON EVALUATION

We followed the instructions given in the manual for creation of a working copy and a backup copy of the system using PC-DOS 2.0. When the staff ran the working copy everyone noticed that the menu at the bottom of the screen was illegible. We could not find anything in the manual that would help us rectify the problem so we called Sorcim. When we described our problem to the support person she asked us if we had color graphics boards in our IBM PCs. We confessed that we did, and were given the secret (or at least undocumented) command to append a "BW" to the program name as a parameter during the load (SW/BW at the A: prompt). The Sorcim support person was able to solve the problem easily.

There were no tutorial disks provided in the package so our staff had to rely on the "10 Minutes to SuperWriter" minimanual to get started. Getting started was easy, but getting used to the control key command sequence proved more difficult.

The product has a modified "text mode/command mode" structure which makes revising documents unnecessarily difficult.

The clerical people on our staff praised the letter, memo, and small report writing capabilities of the package. The researchers, however, missed not having automatic footnotes and also mentioned the inability to queue documents for printing. Once the printer is actually in use, no other print jobs can be submitted.

The command mode concept of the product was different from our conventional commercial word processors and thus not entirely accepted, but the product performed adequately and was judged to be useful by all who tested it.

□ User Interface

SuperWriter combines a menu structure during document set-up and special system operations with a full screen editor during text editing. The display is generally in print

image, but justification and print formatting are affected by imbedded commands which do not affect the display. Commands are issued using Control key sequences, and there is a limited use of the PC function keys.

Menus: Menus are used to select major product functions and to select system functions such as document history. Selection is made by the entry of a single character, which is related to the command name. Menus are also used to display options in the execution of complex editing commands such as block operations.

Control Characters: Most common editing commands associated with cursor movement, deletion and insertion, and first-level command invocation are issued through the use of a sequence consisting of the Control key and another key pressed in unison. The control key structure is similar to but not identical with that of WordStar, and the differences are in areas where confusion can cause loss of information. For those who are unfamiliar with other word processors, the command key letters are logically structured.

Function/special keys: Function keys are used in standard and shifted mode as shorthand means of issuing multikey-stroke commands such as setting a text marker or moving to the beginning or ending of text. There is no template of function keys, and the function key map is difficult to locate in the documentation. A Help screen displays function key usage on request.

Command language: A special command language can be used to develop a file called an "execute file," which permits an operator to request a sequence of actions normally requested through individual command and key-stroke input. Execute files must be keyed as text and named according to the system convention; they may not be created by saving a sequence of commands as they are given from the keyboard.

Positive feedback: Most commands issued by the program affect the text directly or change the menu or prompt display, giving the operator direct indication of execution.

Status display: A status line provides document name, line number, column number of the cursor position, change indicator telling if the document has been changed since it was read, and operating mode (insert, typeover, page insert, etc).

Help facilities: F1 or Ctrl-/ causes a Help screen to display. Help is available for all commands and imbedded formatting statements. Help screens are shown in the documentation, and there is a help reference card provided.

□ Environment

Version 1.01 of SuperWriter, the one we tested, supports DOS 2.0, CP/M-80, CP/M-86, and Concurrent CP/M. We used an IBM PC with 256K bytes of RAM and two floppy disk drives with 320K bytes each. We had a color graphics board in the PC with a monochrome monitor. The printer we used was an Okidata Microline 92, and we ran under DOS 2.0. The printer configuration instructions were in the utility menu, and fortunately we had no problems following these instructions because there was nothing in the documentation about printer configuration.

The program disk was not copy protected so we were able



Sorcim Corporation SuperWriter Word Processing Package

to give each staff member a diskette. This is a normal practice for our office, even though there is a single computer system, because it prevents accidental destruction of the distribution disk during training.

DOS 2.0 can be copied to a program diskette to make it self-loading, and the program can be moved to hard disk for execution.

□ Documentation

Sorcim includes a brief introduction with the SuperWriter entitled "10 Minutes to SuperWriter." This is a 15 page booklet that enables the user to get a quick and easy start, using as an example the production of a small business letter. The instructions are clear and easy to follow.

The "User's Guide and Reference Manual" consists of seven sections: 1) Welcome to SuperWriter—a quick overview and aid to get the new user started, 2) Editing—encompassing all the options available in the Edit mode, 3) Print—all options available in Print mode, 4) Check Spelling—to familiarize the user with this function, 5) Disk Directory, 6) Utilities, and 7) Advanced SuperWriter Features. A glossary of terms is provided in the appendices, along with Embedded Format Commands, Messages, and the SuperWriter Installation Guide (which we could not find in the index of the manual). Function Key assignments were also provided in the appendices, as well as sufficient visual samples of all screen and menus in SuperWriter.

The instructions in the manual were well worded and easy to understand, but no reference was ever made to the IBM PC in the index, the appendices, or the Table of Contents. This made us wonder whether the package was applicable to the IBM PC or some other computer, and did nothing to enhance the document as a reference text. The only guide to the PC-specific aspects of the product was contained in one of the appendices, where the function key usage of every terminal supported by SuperWriter was also listed. We couldn't even find a keyboard chart for the PC, and there was no function key template.

□ Functionality

The staff found SuperWriter's features adequate for their letter writing, memos, and short reports. Their main complaint about the report producing capability of the package was the fact that automatic footnotes were not possible. They did comment on its speed while inserting several lines from another document into the current document, a process which is not always easy for word processors, and which is normally fairly slow.

SuperWriter is an alternative product to WordStar, in the same way as Sorcim's SuperCalc is an alternative to Visi-Calc. People who liked WordStar, but for some reason (like cost) were unable to acquire it, will probably like the features of SuperWriter as well. Unfortunately, SuperWriter propagates most of WordStar's bad points and manages to miss some of its good ones.

Editing documents is done in a "workspace," and the screen is a window into it. Data is typed into the workspace in insert mode, and in replace mode overlays that which is already present. Command functions such as deletions and block operations are mechanized through the use of control key sequences.

A status line appears at the bottom of the screen and tells the user the name of the document he is working on, the line on the document where the cursor is currently located, whether the document has changed since it was last saved (if it has, an asterisk appears after the line number), the operating mode (Insert, Auto-Insert, typeover mode, or page insertion mode), and the column number where the cursor is positioned.

Headers and footers are specified by Embedded Formatting Commands placed in the document itself. You must type them in while editing the document. They need only be embedded once, though, unless you need to change the wording. Header and footer specifications should be placed at the beginning of the document, along with any embedded margin setting. Placing them elsewhere can produce documents with inconsistent formats.

Standard text operations such as letter and documents are easily handled except for the annoying failure to use the personal computer function keys properly. The movement through the document, deletions, and block operations are mechanized through the use of dual-key sequences—the Control key in conjunction with another key. This is not an unusual practice in the earlier CP/M products because there were no standard terminals and therefore no key usage standards. The continuation of this convention into the IBM PC version of the product is certainly unnecessary, and detracts from the value of the product.

Search and Replace (Find and Replace) mechanized in the conventional way also. The user must hit ESC, F, state the characters to be found, and then hit return. Then an answer screen appears with Find options, the user must chose between 5 options there. Replacing selected strings with other strings works similarly. The user must hit ESC, and then R, and then gets the replace options. We found the number of options bewildering, and apparently the Find structure and the Replace structure were made to conform regardless of the applicability of the menu option to both. For example, the "V" option on a replace function requires a user to verify each replacement to be made (you'd think "V" stood for verify—it stands for "Veto" in SuperWriter). That's a pretty useful feature for replace, but what does it do for a Find? We discovered it stops at the occurrence so that you can see that it indeed found something, then proceeds to the next occurrence if you type "Y". The explanations for these options fill a screen.

Centering data, on the other hand, is easy. To center justify a line, you must specify by hitting Control P- and then C on every line you want to center, before or after you type the line. You'd expect justification to work the same way, but it does not. To produce a justified document, the user must enter an imbedded format command in the text. This will affect the printed form of the text but not the display.

Block operations require that the user identify the start and end of a block by inserting a marker. The marked block can then be deleted, moved, copied, or written to a file. The delete block command offers confirm protection ("OK to delete nn lines?") but is not reversible. The block commands are not found in a single menu, so once a block is marked, no single source tells what can be done with it.

A useful facility in SuperWriter is the document history.



Sorcim Corporation SuperWriter Word Processing Package

The creation date, author, and last revision date. This information is accessible through a Utility menu. We found that having a history reduced the number of times someone deleted a document because they could not identify its use or author. On a hard disk system with considerable document activity and a need to erase old files periodically, the history is a very valuable tool.

The clerical staff was not pleased with the fact that SuperWriter was not able to perform column calculations. Some of the reports we generate supply cash forecast information and we need at least simple column addition to eliminate manual calculation and the resulting errors. While column math was not a standard feature of CP/M products, it is becoming common in PC products.

The mail merge function is available in SuperWriter. It is called Form Letter Generation in the manual. The instructions are clearly written, though a bit lengthy, and require a little programming by the user.

A special feature of SuperWriter permits users to define command files which are read by SuperWriter as though the characters contained were keyed by the operator. This facility can be used to define and execute complex, repetitive editing functions. The keystrokes may either alter the document or provide answers to prompts and menu selections. Unfortunately, the only way to produce an "execute" file is to key it as text using a command language. The system cannot save a sequence of keystrokes in a file for later use, and the command file structure was too complex for most of our clerical staff to master.

Ease of Use

SuperWriter shows the user function menus whenever a control function is selected. A quick user may be able to squeeze in some action without provoking a barrage of text, but the average user is confronted with a display of information with nearly every non-text keystroke. The effect is similar to reading flash cards, and did not contribute to the acceptance of the package. One of our sales managers became obsessed with the idea that these screens could be suppressed or abbreviated but was never able to find a way to do it. His forays into the index on the quest led to his being known as "Help, refusal of" Harry.

Sorcim has seen fit to abandon the only really user-friendly term to ever be used in computer operation: HELP. Instead of having a HELP key, they have an AnswerKey, and an AnswerScreen appears when a user presses it. The F1 key on the keyboard serves as a (gosh, Sorcim, I'm sorry but old habits die hard) Help key, but Ctrl-/ will work for dyed-in-the-wool CP/M users. The quality of the help screens is generally good, but there is just too much information on many of them.

The instructions in the manual are clear, but simple functions like search and replace did require a little time to try out the different menu options available. We found our learning curve to be a bit long with this package, probably due to the fact, as mentioned before, that it has crossed over from CP/M versions.

Support

Sorcim does not provide a toll-free support number, however, a support number is furnished. We called them about

the screen problem we encountered earlier, and the staff was helpful and courteous, solving our problem easily and quickly. You are requested to give the product serial number when asking for assistance. Documentation lists Sorcim as the primary source of support.

Sorcim encourages the user to register when they purchase the package so diskettes can be updated as changes occur. A MAINTAIN program is supplied with the product to allow users to apply maintenance bulletins issued by Sorcim in response to reports of problems with SuperWriter. The program may also be used to verify the integrity of a version of SuperWriter which is suspected to be damaged.

System Interface

There is no mention in the User's Guide and Reference Manual to the fact that SuperWriter has the ability to interface with any other word processing package. We made a few attempts to do so, and were unsuccessful. There is also no provision for merging printed output of other products, even Sorcim's own, with the output of SuperWriter.

Vendor Experience

Sorcim was established in 1979 and their field of concentration has been word processing and spreadsheets. This version of SuperWriter was introduced in September 1983, but is based on a very early CP/M 8-bit product which has been in use for over three years.

■ PRODUCT OVERVIEW

Terms & Support

Terms • SuperWriter is supplied on a purchase license; it is available from Sorcim, personal computer dealers, software dealers, and mail order firms nationwide.

Support • telephone support available from Sorcim; diskettes are updated when changes are made.

Component Summary

SUPERWRITER is a personal computer word processing and mail list merge program supplied on one floppy disk. To prepare the SuperWriter disk for daily use, you must first format a blank disk. You must transfer your operating system startup and file management utilities onto the formatted blank disk, and then copy the SuperWriter program files from the original disk onto the disk containing your operating system utilities. This product provides standard word processing features including mail merge capabilities and a spelling checker.

SuperWriter:

\$295 lcns

Computers & Operating Systems Supported

SuperWriter runs on the IBM PC, PC/XT with PC DOS 1.1 or 2.0 equivalent. It also runs on the Compaq personal computers using MS-DOS, and the Columbia PCs using MS-DOS, CP/M, CP/M-86, or Concurrent CP/M-86.

Minimum Operating Requirements

The SuperWriter software package requires a minimum memory of 64K bytes and one double-sided diskette drive. An 80-column monitor with either monochrome or IBM-compatible color/graphics adapter is recommended.

Features

Display Type • SuperWriter provides about a half-page print image display while in the edit mode, however, in the format mode you can obtain a full print image display; the Change Format

LCNS: license fee.



Sorcim Corporation SuperWriter Word Processing Package

Settings option of the print menu allows you to override any default margin settings; you can set different margins each time you format and print a document; special margins can be set within the document itself (embedded) and will be visible on-screen at all times.

Display Feature Utilization • the Custom Option Answer Screen features word-wrap, half-intensity characters (if your terminal is able to show them), visible returns, visible blanks, visible line breaks, visible print controls, and visible hyphens.

Command Structure • basic system-level commands are issued from menu displays providing both explanations and options; editing commands are issued by pressing the Control key in conjunction with another key.

Error Recovery • error recovery is not difficult because backup files are created whenever a file is rewritten onto a disk; SuperWriter keeps a history on every document you create.

Block Operations • block operations or "cut and paste" are performed by going from the Edit screen to ESC M and "?" to get to the answer screen; the options available are clearly explained on the screen.

Merge/Print Functions • the package has the ability to merge files for mailing label or form letter use, and can assemble documents from other files on the disk.

Spelling Check/Aid • a spelling check/aid is included in the package for spelling verification, although it is not automatic; the dictionary can be customized to meet the needs of the user through the utility menu.

Multiple Window/Multiple Document • multiple window/multiple document support is not available in SuperWriter.

• END



Southeastern Software Data Capture ASCII Terminal Emulator Program

■ PROFILE

Function • ASCII teleprinter terminal emulator.

Computers/Operating Systems Supported • Apple II, IIe, III; IBM PC or PC/XT; most other PC-compatible computers/PC-DOS; MS-DOS; Apple DOS.

Configuration • 64K bytes, one disk drive; 2 disk drives and hard disk are also supported; 128K bytes is recommended; Apple version requires 48K bytes and single disk drive.

Current Version/Version Reviewed • Version 4.0 for Apple II, Version 2E for Apple IIe, Version 3 for Apple III; PC version for IBM PC/Data Capture/PC for the IBM PC.

First Delivery • June 1982.

Number of Installations • between 10,000 and 12,000.

Comparable Products • Microstuf CROSSTALK.

Optional Associated Software • none.

Price • \$120 retail price; \$15 for each update.

Vendor • Southeastern Software; 7743 Briarwood Drive, New Orleans, LA 70128 • 504-246-7937.

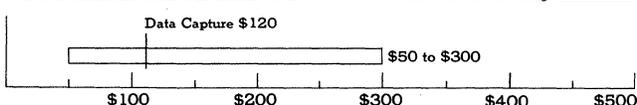
■ ANALYSIS

Data communication between microcomputers or between micros and a corporate data center is almost certain to be a requirement of any business with a serious interest in both employing microcomputers to increase productivity and retaining some control of vital corporate information. Programs which support this communication must balance the sophisticated aspects which can make data center attachment easier and more flexible, against the complexity these features may introduce into a non-DP environment.

Data Capture does not support sophisticated terminal emulation, so some extra work can be expected in accommodating it in many data centers, particularly those employing IBM mainframes. Once this work is done, however, Data Capture presents an easily understood and controllable user environment. The complex parameters associated with communication setup can be defined by specialists and saved on disk, permitting the actual user to ignore technical details and preventing accidental mismatches during communication setup.

Because it does not emulate any popular full-feature terminal, Data Capture may not be capable of supporting the attachment of a PC to a user application which does any

PURCHASE PRICE RANGE



SOUTHEASTERN SOFTWARE DATA CAPTURE PRICING • open bar shows the typical range of prices for **COMMUNICATIONS** software used in a corporate environment • the vertical line within the bar graph indicates the price of **DATA CAPTURE**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT	=====									
DOCUMENTATION	=====									
FUNCTIONALITY	=====									
EASE OF USE	=====									
SUPPORT	=====									
SYSTEM INTERFACE	=====									
EXPERIENCE OF VENDOR	=====									

*For an explanation of rating criteria, please refer to the Communication Features section in the Software Evaluations (805) report.

form of screen formatting, limiting its usefulness as a means of letting the PC substitute for a terminal. As a vehicle for file transfer between PCs or between PC and data center, however, it provides the features to do the job as painlessly as possible.

□ Strengths

Data Capture is designed for ease of use, and both the product and the documentation support this goal. The written material contains both a reference manual and a tutorial, both of which are logically organized and relatively jargon-free.

Communication parameters, such as data rate, character size, number of stop bits, and parity, can be stored on a disk file and loaded as required. Experts can thus set the system parameters, and the actual users of the package need not concern themselves with these technical issues.

The user can further enhance ease of operation by generating "function key macros" which are text sequences activated in response to the pressing of a function key. These sequences can automatically dial through a suitable modem, or generate preset log-on or control sequences.

A "capture buffer" is used to send and receive data. A set of basic editing commands allows changes to data in that buffer, making it easier to format data and correct errors prior to transmission. In fact, the capture buffer, editing, and local file control facilities of the program permit it to be used as a simple text editor even without a communication connection.

□ Limitations

Some mainframe computer programs, especially user-developed applications, will rely on communication with a certain type of terminal device, and any PC which desires to communicate with such a program must emulate a compatible terminal. Because Data Capture does not emulate a modern CRT terminal, such as a DEC VT100 or an IBM 3101, it may not function with some programs and



Southeastern Software Data Capture ASCII Terminal Emulator Program

may require special data center telecommunication support to accomplish any attachment function.

The potential of the function key macro facility in easing the operation of the program is not fully realized, because the macros operate only to generate characters to be transmitted, not commands in response to menus. This prevents setting up function key macros to cause a file to be sent.

No form of error protection is supported with Data Capture. This is not an unusual omission in products which use asynchronous communication protocols, but users must be aware of the fact that communication problems may corrupt data.



■ HANDS-ON EVALUATION

Since part of our planned use of the package was communication with data center computers, our first step in bringing Data Capture up was to meet with the system programmers and define the communication setup for our link to the data center. We made a copy of the menu screens from the manual and asked the data center specialists to mark the proper options for communication with their equipment.

Our own technical specialist recommended that we review the manual before trying to use the package or even lay out our strategies, since the options and features might affect the way in which we wanted the system set up. This proved to be a good idea—there are many features of Data Capture designed to facilitate its use by non-technical people and some are not immediately obvious.

We found that the best way to use Data Capture is to define a disk for each individual communication application; in our case one for communication with data center, and another for communication with another PC system in a remote office location. This permits the communication setup of each application to be automatically loaded by the loading of the program, and eliminates the "Why aren't they talking?" questions. In this predefined mode, Data Capture handled the communication tasks defined for it without difficulty, and was judged easy to use by all levels of the organization.

□ User Interface

Data Capture/PC uses a double-level menu structure for the entry of commands. A selection of a command at the lowest menu level may cause additional prompts to be displayed to solicit parameter information. The command structure is logical and the current value of key options is displayed at all times. The organization of the program, the ability to define function key strings, and the ability to save communication setups make the program exceptionally easy to use for non-communication personnel.

Menus: There are two levels of menu structure. Commands are selected by requesting a specific function menu from the main menu, then selecting the command. The option selection is done by entering a single character which normally mnemonically relates to the command name. The user may enter a sub-menu command directly by keying Alt- in conjunction with the option choice from the main menu. The main menu is reached from data mode by pressing the F10 key.

Control characters: Not used by the program; transmitted to the opposite system if keyed.

Function/special keys: The F10 key is used to select the main menu, and the Alt key may be used in conjunction with any main menu option letter to select that function directly from data mode. Other function keys may be related to strings of text which are to be sent when the key is depressed. Commands are entered via menu only.

Command language: None. Text may be associated with function keys 1 through 9, but this text may not generate system commands. Communication options may be saved and loaded from disk.

Positive feedback: Each command entry will cause an alteration in the display, either as a confirmation of change in option value or to request an additional parameter.

Status display: The two top lines of the display are used to show the current settings of the key communication options at all times during program execution. Changes to these options are reflected in this display immediately.

Help facilities: The main menu screen can be selected at any time by pressing F10. From this screen, each subsequent command menu can be activated. Each command option MUST be entered from a menu except the "fast selection" of main menu commands via the Alt key. No specific help function is available, but the need is minimal given the total menu orientation of commands.

□ Environment

Data Capture requires only 64K bytes of RAM to run, and will work on systems with a single diskette drive. Even the oldest corporate PC in a remote office could use it without upgrade. Some functions are limited on 64K byte systems, however, and 128K bytes should be considered the basic configuration. Because part of the program is written in BASIC it cannot use memory beyond 128K bytes to improve performance or provide additional storage.

The program diskette is not copy protected, and the authors recommend copying it for backup purposes; an enlightened approach in the age of copy-protected software. Upon loading, the program establishes the communication parameters from a file called MACRO1.OPT, so we set this file up differently on each application diskette we prepared. In that way, no user action was required to set the communication parameters properly. We also defined a set of function key macros for each application. These generate a sequence of characters when a function key (F1 through F9) is pressed, and allow things such as log-on sequences to be predefined. Finally, we prepared a user manual which copied the key areas of the documentation and included a description of our own function key usage and internal procedures. While these setup tasks required some assistance from the data center for communication setup, our technical specialist was able to complete them with no difficulty.

Earlier versions of the program are designed for use with dual-floppy disk systems rather than for the PC/XT with hard disk, but an update is available from Southeastern Software to provide this support. That update also increases the speed of the display, making the menus appear more rapidly.



Southeastern Software Data Capture ASCII Terminal Emulator Program

□ Documentation

The manual for Data Capture is complete, and strikes a good balance between the requirement to communicate essential technical information and the requirement that non-technical personnel be able to read it. There are two major sections: a tutorial and a reference manual.

The tutorial document assumes that the user will apply the program product to attach to The Source, a commercial information service for PC users. Since we did not intend to use it for that purpose, we had a few questions from our staff on whether they should pay any attention to the material. We finally explained that the information on The Source was only an example, and our technical specialist gave an impromptu lecture on the basics of the product. Only about a page of material is directed to that example.

The reference section is organized by menu and command, and a large chart showing the menu and command structure is provided. We copied this and color-coded it for our operators, using green borders for the menus and commands they should regularly use, yellow for those which might occasionally be used, and red for those which should not be used without technical assistance.

A final section of the manual defines the layout of the program, its use of files, and procedures for modifying it. The material is sufficient to permit anyone with BASIC programming experience to alter the logic, so we removed it from the document to prevent unauthorized changes.

□ Functionality

The functions of Data Capture are controlled by a hierarchical menu structure of 2 levels which begins with a main menu and extends to 3 low-level menus. Each command within a menu has a prompt structure which is displayed when the command is invoked. Through the command structure, a user has complete control over the communication parameters associated with the connection and actions of the program. Inexperienced users may select options which are destructive to the connection, so it is generally safer to preset the main options and discourage users from changing them.

Data may be transmitted directly from a disk file or from a capture buffer which can be filled, printed, edited, and transmitted under user control. Received data can also go to disk or into the capture buffer. Local editing commands are provided, so data can be formatted and prepared by Data Capture even if the connection has not yet been made.

Our applications for the program consisted of a text exchange with the data center to load the host system with print images of certain spreadsheet results, and a more general exchange of text and files with remote PCs in branch offices. We defined a special application disk for each, and used the F1 function key to generate the command to the "smart" modem to dial the correct number. The operating procedure was thus simplified to "load the program, select receive mode, press F1 to dial and connect." We had a unique diskette for each branch office, so the phone number could be changed in each case.

Our data exchange with the data center required some format changes to the data before it was transmitted. The

headings on the data were to be removed at the PC end, and the entire data file had to be preceded by a special code sequence to identify the data. We tried to make the changes off-line with an editor, but found that the procedure was too complex and that the entry of the wrong code number was a problem. As a solution, we asked our technician to set up a special procedure for the job. The procedure would take advantage of the fact that Data Capture can operate as a simple text processor either before a connection is made or during the connection, but "off-line"—not involving the communication to the other system.

The procedures for this transmission called for our operator to read the print-image file into the capture buffer for examination. The editing features of the program simplified the deleting of the headings. To insure that the code sequence would be properly sent, a function key macro was generated. Once the data had been changed, the operator logged onto the host system by entering "receive" mode and using the F1 key to dial the number and log on. Another function key loaded the line editor application to receive the data, and a third generated the code number required at the beginning of the data. The capture buffer was then transmitted to the data center. The procedure proved both easily learned and reliable. The program which received the data on the mainframe was a line editor which prompted for each line with a special symbol. By telling Data Capture to wait for this symbol, we were able to prevent the PC from overrunning the application program.

Reception of data at our remote PCs was even easier. We set up the remote system to automatically answer the call (something done through the modem, outside Data Capture) and selected the option to receive a file to disk. The local PC then loaded the predefined application disk and used the F1 key to dial the remote PC. When the connection was made, the local operator selected the "send disk file" option and transmitted the data to the other system. We logged the data to the printer at the remote location as a way of checking the accuracy of the transmission, and this feature works as long as the printer is relatively fast; ours was 200 cps. At a transmission speed of 1200 bps (120 cps) we had no problem with lost data.

Data Capture supports the display of files on the screen, the printing of files on the printer, and viewing the directory of the disk, in addition to the capture buffer functions. This permits an operator to manage the preliminary setup of files for a communication session, the actual data exchange, and the clean-up process after the transmission without having to exit to IBM DOS, eliminating the need for the operator to learn DOS commands.

Although the documentation implies that 2400 bps is the highest data rate supported, local connections where the file is sent from or received onto a disk can operate at 9600 bps. This speed would considerably reduce the transmission time for files in cases where it is possible to get the PC close enough to the data center computer to attach it without a modem.

There is no error control in the operation of Data Capture, since most asynchronous applications do not support it. There is an option to wait for the "echo" of a character from the computer before sending the next character. This can provide a very basic form of error control.



Southeastern Software Data Capture ASCII Terminal Emulator Program

Ease of Use

Communication is not an inherently easy task for non-technical organizations, and the ability to predefine the communication options and select function keys to represent common sequences of data is a significant benefit to a user. We found that proper use of the function key macros and the saving of options on disk files permitted the system to be used by office personnel with no previous communication background.

Setting the parameters may give even specialists some problems, however. Many special options are supported from a menu called the "toggle" menu, because each option in the menu is an "A or B" choice. Although the choices are as clearly explained as communication options can be, many organizations with no detailed expertise in protocols may find the choices difficult to relate to their operations. One remote branch tried to use the program to communicate with a home computer owned by one of the managers and was unable to set the communication options correctly.

The operation of a properly established communication application using Data Capture is well within the skill levels of typical office personnel, but the setup of that application, even with determined tutorial efforts by Southeastern Software and a well-designed menu structure, will probably require expert assistance.

Support

We found that our dealer had some experience with Data Capture and was able to answer many of our initial questions, but more detailed issues required calling Southeastern Software, who unfortunately has no 800 number for support. We had inadvertently missed a revision of the product which supported hard disk systems and improved the speed of the menu display, and for an update fee of \$15 we received the latest version.

Technical questions on the use of the product, even to the level of modifying the code, were answered quickly and accurately; we never had a case of misunderstanding or misinformation.

System Interface

Because Data Capture is a basic asynchronous terminal emulator which makes the system appear as a Teletype 33/35 device, it may not be compatible with some host systems. IBM mainframes which support only 3270-class devices cannot communicate with the program, and popular 3270 emulator products designed to work with ASCII CRT terminals will not support the teletype protocol.

Any computer which can be made to support communication with teletype terminal devices, however, will support Data Capture, and the lack of sophisticated terminal control, such as cursor positioning, does prevent accidentally capturing cursor commands during file transfer.

Some telecommunication option changes are likely to be necessary to set up mainframe communications to the Data

Capture program, but the connection can be made for nearly any type of computer.

Vendor Experience

Southeastern Software is not a large company, and Data Capture is its primary product. The company does not advertise heavily, so many users are unaware of the product or its features. The IBM PC and Apple IIe and III versions of the program are extensions of the initial Version 4.0 Apple II program, in operation for several years.

■ PRODUCT OVERVIEW

Terms & Support

Terms • Data Capture is available from Southeastern Software, through computer dealers, software dealers, or mail-order firms throughout the U.S.

Support • telephone support provided by vendor • updates are available for hard disk and performance enhancements; update fee is \$15.

Component Summary

System consists of the root kernel plus options and subroutines. DCAP is the data capture root program written in BASIC. It is supplied on disk; this diskette must be loaded and available at all times during program execution. Options is the menu program which is on the same disk as DCAP. Subroutines is written in 8088 assembler and used for the actual communication handling. MACRO1.OPT is the default communication options file used for setting up the system.

Data Capture:

\$120 lens

Computers & Operating Systems Supported

Data Capture runs on all IBM PC and PC/XT microcomputers and PC-compatible systems under PC-DOS and MS-DOS. There are also versions available for use with Apple II, IIe, and III systems running under the associated operating systems.

Minimum Operating Requirements

The Data Capture program requires a minimum of 64K bytes of RAM and one disk drive for use on the IBM PC. The program will, however, support 2 disk drives and a hard disk. The Apple version of Data Capture can run in a system with 48K bytes of RAM plus one disk drive. In order to realize improved performance, 128K bytes of RAM is recommended. A printer is helpful for checking files and viewing data for verification of transmission.

Features

Type of Product • asynchronous terminal emulator for teletype/teleprinter device types, with file transfer and local data edit capability.

Target Host Computers • IBM mainframes and most minicomputers can be made to support the program with possible software or configuration changes; at the communication level, the program is similar in features to IBM's Asynchronous Communication Support Program.

Protocol • asynchronous, ASCII code set.

Data Rates Supported • the manual specifies data rates to 2400 bps, but the vendor supports operation to 9600 bps if transmission facilities (i.e., direct connect) permit.

Format Conversion Features • users may edit data in the capture buffer using text editing commands before or after transmission.

Automatic Setup Features • communication options including the user definition of function keys may be saved to disk on files named by the user, and may be reloaded as required to restore standard set-ups; function keys may be defined (except F10) to represent any string of up to 40 characters.

• END

LCNS: license fee.



Stoneware Inc Advanced DB Master Information Management Package

■ PROFILE

Function • provides personal computer with an information management system that stores, retrieves, reorganizes, and prints reports for selected information.

Computers/Operating Systems Supported • IBM PC, PC/XT, Compaq, Columbia MPC and VP, or IBM PC-compatible systems with MS-DOS.

Configuration • 256K bytes of RAM, 360-byte, double-sided diskette drive; printer recommended.

Current Version/Version Reviewed • Version 2.0/Version 2.0.

First Delivery • October 1983.

Number of Installations • information not available.

Comparable Products • Ashton-Tate dBase II, Information Unlimited EasyFile.

Optional Associated Software • none.

Price • \$595 retail price.

Vendor • Stoneware, Inc, 50 Belvedere Street, San Rafael, CA 94901 • 415-454-6500.

Canada • Distributors: FranTech Software Distributors; 1685 Russell Road, Unit 7, Ottawa, ON K1G 0N1 • Micro Distributors; 1533 Kent Ave, Port Coquitcan, BC V3B 2L7.

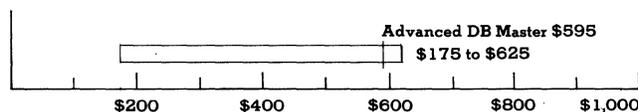
■ ANALYSIS

Advanced DB Master is a powerful, menu-driven, control-key-oriented information management system for the IBM Personal Computer or any other 100 percent IBM PC compatible computer. This system contains most of the major features of a database management system, including report generation and spooling, a text editor to function as a word processor, and user defined keystroke macros that can be used to store and retrieve frequently used commands.

Advanced DB Master uses a file structure that reduces the time necessary to search and retrieve the data stored in the database. The system supports file sizes up to 16M bytes, enabling the user to develop large and complex database file structures suitable for most business needs.

At present, the existing data exchange feature only supports the exchange of data between different Advanced DB Master files and programs. To extend this systems utility in a

PURCHASE PRICE RANGE Software Price Range



STONEWARE INC ADVANCED DB MASTER PRICING • open bar shows the typical range of prices for INFORMATION MANAGEMENT software used in a corporate environment • the vertical line within the bar graph indicates the price of **ADVANCED DB MASTER**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10	
ENVIRONMENT	_____										
DOCUMENTATION	_____										
FUNCTIONALITY	_____										
EASE OF USE	_____										
SUPPORT	_____										
SYSTEM INTERFACE	_____										
EXPERIENCE OF VENDOR	_____										

*For an explanation of rating criteria, please refer to the Data Management Features section in the Software Evaluations (805) report.

multiprogram, multicomputer environment, Version 2.1, when released, will support data exchange between this system and other programming systems such as dBaseII, Lotus 1-2-3, VisiCalc, and others that use MS-DOS or PC-DOS. Data exchange of ASCII formatted file with other computers will be supported in the new release.

Advanced DB Master is a powerful information management program that will suit most business needs. For inexperienced database users the training necessary to operate this system can be accomplished in 6 to 10 hours. Perfecting the development of complicated database file structures, reports, and data transfers can take considerably more time. Advanced DB Master may be a viable candidate for purchase for those users who need more than the minimum list management systems, but who cannot justify moving to a pseudo-programming database language.

□ Strengths

This package is evenly balanced between its features and its ease of use. The step-by-step tutorial manual is clearly written with each lesson building on the last, and covers all the major steps involved in database development and utilization.

For the experienced DB user, a Quick Reference Guide is included summarizing and outlining each phase of the system. Flow charts are included to aid in tracking and documenting progress when generating files and reports. The documentation is well laid out and easy to read. Examples of control key operations are included.

User-defined function keys enable the storing of a command or sequence of commands to be retrieved and executed by pressing the desired function key. This is extremely useful for creating job streams that might print several reports, or transfer data then update it, then print it.

Advanced DB Master also comes with a command driven



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text, editor, which can be used for a word processor to create, edit, and print documents, mailing lists, and labels. Although not as sophisticated as most word processors, some included features are; online Help for commands, full screen editing, block text operations, margin and page size controls, heading and footing control, and letter and mail list merge.

Limitations

A major restriction of this system was found to be the inability to work with more than one data file at a time. Although this restriction can be overcome, it is at the expense of the user's time and involves creation of redundant data—an undesirable technique. To circumvent the problem, the user must format an additional file and transfer the necessary data, stored in the other files, to that file before processing can continue.

The command-driven text editor is not particularly user-friendly. Until the commands were memorized, continual reference to the Help screens or manual was a necessity, thus slowing down documentation development and editing.

The search function has a few inexplicable problems which relate to locating the first and last record in a matching group of records. This is a known bug that is not yet repaired.



■ HANDS-ON EVALUATION

We tested Advanced DB Master on a 256K-byte system with dual diskette drives. Both set-up and system back-up instructions were clear and easy to follow. We then moved to the tutorials and experienced no problems. The lessons were presented in a clear, easy-to-follow format. All of the control key options listed on the bottom of each screen were tested, and functioned properly.

We found the existing standard formats helpful and time saving when setting up simple file and report subformats, particularly for the inexperienced DB user.

After completing the tutorials using both drives, some of the staff experimented using only one drive. As expected, more diskette swapping was the result.

Even with both diskette drives (as the documentation warns), occasional messages prompting for the insertion of a diskette were displayed on the status line. An example of such would be: "Need segment U829 : Put volume DBM in unit 4 then type (space)." This message is prompting the user to insert an Advanced DB Master program diskette (volume DBM) in drive A (unit 4). With systems having 512K bytes of memory, these messages are eliminated. We didn't have that much memory, and the need to swap disks rated rather low with the staff.

User Interface

Advanced DB Master uses a combination of menus and control key functions for operation. Major tasks are selected from the menus, and more specific processing is requested through the use of the control keys or a selection from the

sub-menu if applicable. The overall result of this combination enables the user to interface with the system without unnecessary difficulties.

Menus: Menus are used to select the major tasks that the user wishes to accomplish. They are graphically balanced and selections relating to the type of processing are listed together. Sub-menus are used when the types of processing are numerous and control-key function selection would be difficult to remember. Menus are not always displayed on-screen and are usually requested by the operator when a particular task has been completed.

Control Characters: This system uses control characters (keys) to execute the systems functions and to return to previously displayed menus. Control keys are on the average logically defined, e.g., E to Edit field, and are listed and defined on each screen. Control character assignments are not user-modifiable. These characters are the only means of invoking systems functions.

Function/Special Keys: Function keys are used to assign and execute user defined macros. Special keys, particularly the cursor movement keys, are used to skip to fields and edit data in fields or delete data from fields, etc. This package does not come with a keyboard template.

Command Language: A macro command language may be defined through the use of the function keys. Up to 99 macro definitions are supported. Functions are modified by replacement only.

Positive Feedback: Invalid special and control keys cause an audible alarm to sound when they don't apply to the processing being performed.

Status Display: None.

Help Facilities: Only the text block editor section of the report generator has an online Help function.

Environment

Version 2.0 of the Advanced DB Master, the one we tested, requires 256K bytes of memory and can use up to 640K bytes. And while one 360K-byte, double-sided diskette drive is required, 2 are more practical and recommended by us. Advanced DB Master supports IBM PC-DOS 1.1 of 2.0, but neither are required to run this program. A printer is not required, but is recommended and necessary to print reports, documents, file specs, etc.

Advanced DB Master uses the UCSD p-system PASCAL, so the diskettes supplied cannot be copied under DOS, the program cannot be run as part of a DOS batch file, and installation on hard disk requires partitioning the disk into a DOS and a DB Master partition. While we have nothing against the p-system in general, its use presents us with several operational inconveniences (like rebooting at the end of the DB Master program).

Documentation

Advanced DB Master's documentation is clearly written and well organized. The manual starts with an Introduction describing the general purpose and structure of a DB system. Next the Getting Started section familiarizes the



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user with the hardware components and their care, the keyboard and the keys' usage, the user-defined function keys, the concepts of back-ups, booting the system, entering and exiting the system, how diskettes will be used, and finally, how to use the menus to drive the program.

Advanced DB Master contains a good-quality tutorial/reference manual which takes the user through a step-by-step sequence of lessons designed to familiarize the user with the system flow and its complexities. The manual contains sufficient visual examples on the usage of screens, menus, and functions. In addition to this, a reference chart and form planning worksheets are included to aid the user in file design and system flow tracking. When the registration card is mailed in, a File Design Guideline is sent to the user to aid with the development of file formats.

A convenient Quick Reference Manual summarizing all aspects and options in this DB system is included for the first 3,000 licensed users free of charge. We got lucky, because the reference guide is handy as a "reference manual," which the basic manual is not. The ordinary manual is labeled "tutorial" and in fact is useful only in that form. Finding information in it if you already know generally what to do but need a specific command/function reference is akin to locating geographic references in a history text.

Our only complaint on the documentation was the fact that material, in attempting to be systematic in its presentation, leads the user too much and provides too little theoretical explanation for the steps. If you plan to use a database system properly, learning to understand what it does seems inescapable, and we would have liked more "meat" in the material.

Functionality

Advanced DB Master has most of the desired abilities of a good DB system. The design philosophy seems to be the support of sophisticated database features without requiring a high level of technical skill in implementation. In this, the product falls between basic list management packages with an almost single-minded structure, and advanced packages that approach programming-level tasks to use.

In the file maintenance area our staff found a few impressive abilities. The auto-increment function enabled records to be added with keys that automatically increment without having to enter the key field. This feature is very helpful when entering data that is numbered for access—we used it to record incoming support requests and posted the number as the "request number" for internal tracking.

The 3-level password feature controlling read only and read/write passwords for any of all fields in a file enables the user to establish an elaborate security mechanism for information accessing. The ability to define field-level passwords permits the use of the same file by several groups without compromising confidential data, and write-level security prevents updating data by personnel whose job is limited to casual inquiry. We applied security level on our support log file so that the internal comments on resolution would not be visible to the telephone support personnel and could not accidentally be given to the caller.

The ability to examine a portion of a field was useful for searching and retrieving subgrouping of records. For example, you may ask for all callers whose names began with the letter "A." You may also specify a search on a matching segment of text. We used this to locate a user who reported a problem with a particular feature by searching on its name. Exclusion searches are also supported—you may specify a search for records that do NOT include the string. Wild-card search using the "?" can locate, for example, part numbers with the product group code "DXE" through a specification "??DXE?????".

In the report generation area all the functions needed to generate a report of any level of sophistication are present in this system. Reports are associated with a particular "application" (database definition), and a user must first select the application, then define the report. This task is complicated somewhat by disk swapping to load the application template diskette.

Reports are specified in PAGE, DATA, SORT, SELECTION, and PRINTER CONTROL sections. The page portion sets the basic page layout—label versus letter, for example. The data section defines the data elements and their location on the page. Special controls, summation, etc are also reflected here. Sorting controls the sequence of the report, while selection permits the qualification of data for inclusion. Printer control permits special font or spacing instructions to be set for the printer. The five basic elements of a report are called "subformats," and a sixth MASTER collects the subformats required into a report. You may collect various combinations of subformats into different report masters.

We found this structure, which at first sounds unnecessarily complex, to be very useful when multiple reports were to be made from the same database. For example, a detail report and a summary report might differ only in the DATA subformat, and their common structure elsewhere eliminates the embarrassment of having report detail that does not agree with the summary because different data selection rules were applied.

Subformat creation is handled on a combination menu/form basis, when DB Master provides a list of required fields for the user to complete. Defaults may be taken in most areas—a standard page, for example. The data section form presents a list of fields available and special numbers for features such as adding comment/label information. Fields are added by line, with prompting for optional preceding spaces. The results of field addition are shown on a column ruled workspace, so the picture of the form is never lost to the operator.

A special feature of the data subformat is the addition of text blocks to a report. This enables what is almost a word processor function within the report, providing the user with the ability to produce free-form text. Our support log application used this to create a form on which a text block defined the meaning of the various status codes associated with a user request for assistance, followed by a report of the requests made in each manager's area.



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Ease of Use

While the features and instructions associated with DB Master are often intimidating, the product is easy to use for those who can grasp the concept of databases and reporting. The combination menu-driven, control-key-oriented command structure proved easy to work with for most levels of experience. We found that the novice users did best with changes to existing reports, rather than with the production of new ones. Once a member of the staff became familiar with reporting through changing other reports, working with new subformats was much easier. File/database design was something we preferred to leave to the experienced staff members.

There are a lot of human-engineered features within Advanced DB Master. Prompts at the bottom of each screen list the available control keys and their functions for that mode of processing, eliminating the need for a Help function entirely. Major operations such as searching and editing a file or printing a report are initiated by selecting the desired option from the main menu. Then, once chosen, other functions, such as adding or duplicating records, are handled with the control keys.

Also since all functions are initiated and executed with only one or two keystrokes, there is no need for the system to detect and pinpoint command syntax errors. If the user enters a control key that is not defined to the system, the audible alarm is sounded and the program awaits a valid control key entry. If a wrong menu selection is entered, the system always provides the user with a control key option to return to the previous menu before any processing takes place.

Advanced DB Master has the ability to save and recall up to 99 groups of commands. This is accomplished through the use of user defined macros assigned to the function keys. The procedure for defining macros is well documented and straightforward, and when used, enhances the ease of operation by saving time and minimizing operator intervention. If the function-key macros are defined after a trial period of operation so that they relate optimally to the user environment, they can save a lot of time and reduce operating errors significantly.

Support

Stoneware supplies the user with a customer support phone number to call if problems are encountered. To use this support facility, the registration card that comes with the package must be filled out and returned to the vendor. This technical support is available during regular working hours Monday through Friday Pacific time.

We called them with a problem relating to the search command and the positioning to either the first or last record which met the search requirements. Their personnel were found to be courteous and informative. They explained that they were aware of the problem and that it should be corrected in the first available update incorporated with the release of Version 2.1. This version will also include the full implementation of the data exchange programs on diskette with the necessary update procedures sent only to registered users and at no extra cost.

System Interface

At present Version 2.0 only supports data transfers between Advanced DB Master files and other files that use the same operating system, UCSD p-system Pascal. With the release of Version 2.1 this interfacing will be greatly enhanced to support data exchange with the MS-DOS or PC-DOS operating systems, and with any other computer that can send and receive data in ASCII format and has the necessary communications equipment attached.

The enhancements to the interface ability of the program are very necessary to users in a normal IBM DOS environment, but the format conversion flexibility of these new products can only be speculated on at this time.

Vendor Experience

Stoneware is an experienced supplier of database systems for microcomputers. This product, designed for the IBM PC, is claimed to be an enhanced version of DB Master, its predecessor, which was released in November 1979 and was written for the Apple computer. Unlike its predecessor (rated one of the ten best-selling business programs for the Apple), which has a long installment history and over 33,000 users, the PC version has not been in the field for an extensive period of time, has substantially fewer users, and is still in its initial version.

■ PRODUCT OVERVIEW

Terms & Support

Terms • Advanced DB Master is available from Stoneware, Inc on a purchase license agreement through local registered dealers or distributors.

Support • customer support staff available for telephone consultation Monday through Friday, 9:00 AM to 5:00 PM Pacific time.

Component Summary

The Advanced DB Master program is supplied on floppy diskettes that must be disk-resident during execution unless operating in a hard disk environment. The utilities for setting up and operating the Advanced DB Master program in a hard disk environment are supplied with the package.

Advanced DB Master:

\$595 lens

Computers & Operating Systems Supported

Advanced DB Master runs on IBM PC and PC/XT computers as well as PC-compatible computers, including Compaq and Columbia MPC and VP under MS-DOS.

Minimum Operating Requirements

Advanced DB Master requires 256K bytes of RAM and a 360K-byte, double-sided diskette drive; a printer is recommended.

Features

File & Record Size Limitations • maximum file size is 15M bytes for diskette files (44 diskettes) and 40M+ bytes for hard disk files • maximum record length is 3K bytes.

Field Size Limitations • maximum field size is 250 bytes for alphanumeric data for primary keys, maximum length is 50 bytes; for numeric fields, maximum number of digits is 16; 8 decimal places.

LCNS: license fee.



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Key Field Limitations • maximum number of primary key fields is 2 at 50 bytes each; no limit to number of secondary key fields that can be used.

Number of Fields per Record Limitation • supports up to 250 defined fields per record.

Screen Format Definition • user can define up to 30 screen pages per record • free-form formatting and full position control of fields is supported • additional fields can be added or moved after original creation of format.

Entry/Edit Capabilities • basic types of numeric, alphanumeric, currency, yes-or-no, and date are supported. • user-defined field type enables specification of a "format mask" to defined field structure • numeric or date fields can be edited for range of values • system has an auto data field with 16 different edited formats.

Report Format Definition • reports may be standard or free-form, user-defined report formats • sorting and automatic control break

subtotaling and supported and defined by user • report heading formats and footnoting are supported and defined by user • up to 99 computed fields per report can be defined • maximum report width is 220 characters.

Sort Capabilities • data can be sorted on up to 15 levels.

Query/Selection Capabilities • records can be searched for and selected using up to 20 criteria per search and can be processed either online or via program.

Programming/Batch Processing Capabilities • computed field formulas can be up to 240 characters long and may contain Boolean functions and mathematical functions such as ABS, COS, MOD, TAN etc with any level of parenthetical nesting • batch processing and job streams can be accomplished through the use of the user-defined macros.

• END

