Fastware, Inc THOR
Data Management Package

■ PROFILE

Function ● maintains collections of miscellaneous data such as thoughts or ideas ● categorizes them as the user requires, and retrieves them based on combinations of category values.

Computers/Operating Systems Supported ● IBM PC or PC/XT with PC-DOS, PC-compatible systems with MS-DOS.

Configuration. ● 128K bytes of RAM minimum; 256K bytes recommended ● 1 double-sided diskette drive or 2 single-sided diskette drives.

Current Version/Version Reviewed ● Version 1.1/pre-release version.

First Delivery ● only demonstration copies available.

Number of Installations ● distribution not started as of review date.

Comparable Products ● other database products may be used to construct a thought-retrieval environment, but the user would have to define the files and access techniques.

Optional Associated Software ● none.

Price ● $285 retail price.

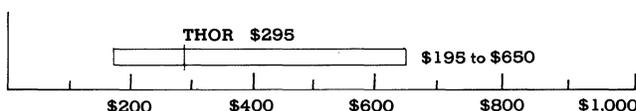**Vendor** ● Fastware Inc; 200 Freeway Drive, East Orange, NJ 07028 ● 201-676-6100.

Canada ● no distributors in Canada.

■ ANALYSIS

Many professionals in business, particularly those whose jobs require considerable creative thought or review of large amounts of technical materials, which for a computer solution to "where did I see that" or "what was that idea I had the other day" problems. The task of categorizing and storing ideas, thoughts, and references is within the scope of many popular database packages, but the user must define the format for entry and the category structure, and often program the selection process in a database language.

THOR addresses the requirement for a thought-collection system by providing an environment where random ideas, references to interesting material, and general thoughts and concepts can be maintained and located. While any system which attempts to deal with free-form human ideal is necessarily restrictive, THOR does provide what it sets to provide; a computer-assisted professional memory recall

PURCHASE PRICE RANGE   Software Price Range [   ]

```
              THOR  $295
          [_____|_____] $195 to $650
  |_____|_____|_____|_____|_____|_____|_____|
     $200    $400    $600    $800   $1,000
```

FASTWARE, INC THOR ● 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 **THOR** 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	▬									

*This category not rated because pre-release package was evaluated.
**For an explanation of rating criteria, please refer to the Data Management Features section in the Software Evaluations (805) report.

structure.

Ideas are most often categorized according to the project or "application" to which they relate, and THOR provides the ability to define applications. Within these applications, users may define categories into which thoughts or ideas are to be classified. When a thought is entered, its classifications are entered as well. Later, when human memory has failed, THOR can locate thoughts on the basis of the values assigned to the categories.

All that is worthwhile in THOR must, for the moment at least, be balanced against the fragility of the product. Nearly any unusual condition (and some which certainly appeared to be quite ordinary) cause the product to fail. A typical office worker would unquestionably find the failures objectionable.

Because the creative process is very much an individual thing, THOR may be intrusive to some and ineffective to others. But the goal of the product is worthwhile, and businesses who find themselves needing a memory aid and reference locator will find that THOR, once its start-up problems are corrected, has real potential.

☐ Strengths

THOR offers not so much a unique set of features as a unique environment. While other programs, such as database languages, could be used to support the same applications, THOR establishes the environment for thought-file maintenance without user effort.

The operation of THOR, once the basic design is understood, is easily learned and easily applied. The terms and structure relate to the task of identifying, categorizing, and collecting thoughts and ideas rather than to the underlying database methodology.

The basic use of THOR as a thought collector can be easily extended to other areas of database application. For exam-

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ple, an excellent prospect file can be built based on THOR.

☐ Limitations

Keeping THOR running is a challenge. Many seemingly logical function selections result in a system error message and an abort of THOR. Experienced personnel can avoid most, but not all, of the problems. Novices will crash repeatedly, and eventually become discouraged.

The initial documentation for THOR, admittedly a pre-release version, has only a limited tutorial value. Since the package has a unique orientation, this lack of introduction material may disorient the new user.

The categorization of "thoughts" in the product controls the number and type of relational comparisons which may be applied to select a thought for review. Although the number of categories within an application is not limited, only 5 categories can be defined for any given thought. This limits the ability to categorize complex ideas and thus to access them properly.

The disk space used for storing thoughts may limit the usefulness of the application on floppy diskette systems. While the package is not wasteful of space, its free-form entry process encourages verbosity in statement of ideas, thoughts, etc. Thus, the space required can be considerable.
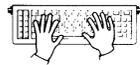
■ HANDS-ON EVALUATION

The version of THOR reviewed was a pre-release copy, and the documentation was therefore somewhat ragged. So we booted the installation diskette for THOR, reasoning that the product would help prompt us through the initial documentation. The menus were not readable, apparently because the product assumed the wrong display options. We were using a high-resolution black-and-white monitor and the color graphics adapter, a combination which seemed to confuse THOR. A call to Fastware resulted in the instructions to use the DOS MODE command to set the display to the proper mode, a suggestion that worked.

Aside from the problems which might have been caused by pre-release documentation, THOR still had all too many unexplained crashes and unusual problems. Error recovery was particularly weak. In one case we made an error in keying the diskette file assignment for an "application" and generated an operating system error which crashed the system. It was only the first of many crashes. The error was substituting a "1" for an "A" in the drive assignment, and should have been caught. The product also tended to demand upper case letters as menu responses.

In spite of the operational problems with THOR, our staff liked the concept and the product. With better error handling and a well-designed manual, it could be a real winner.

☐ User Interface

Interface to the package is primarily through a series of menus and function keys. Retrieval is based on up to 5 category/value combinations, by date of entry range, and by matching up to 3 keywords.

Menus: Command menus are available during operation selection only. Major system functions may be menu selected via function keys. No hierarchy of menus exists, and the main function menu may not always be displayed.

Control characters: Used in thought entry or edit to control basic word processing functions such as cutting the current line, insert mode, etc. There are no menus or templates for control character usage, but the assignments are generally based on the first word of the command, e.g. CUT is Ctrl-C.

Function/special keys: Function keys, along or with the ALT key depressed, are used to select major system functions in response to the main menu. Users may not modify or select function key assignments. ALT key may be used in combination with the top row of typewriter keys to generate special symbols while in thought entry or edit mode. ALT keys are used to select the text display attributes such as reverse video, blink, etc while in entry/edit mode. No template or menu of the ALT keys is provided, but an on-screen menu displays their use when the ALT key is depressed.

Command language: None available.

Positive feedback: Transitions from data entry or categorization into command mode is accompanied by a request for confirmation. Commands which cannot be executed in the current context cause an audible alarm and an error message.

Status display: A "DateLine" is provided on the screen except when data entry is in process. It indicates the time, date, and an invitation to select a function via the function key pad. During data entry, the application name is displayed at the top of the screen.

Help facilities: The F10 key selects a help display, and is generally usable at any point in the command process. There are additional help screens selectable from the first screen, but help with some functions cannot be selected because the function selection logic offers no further opportunity to enter data before the function is executed.

☐ Environment

THOR requires 128K bytes of RAM to execute, but Fastware recommends 256K bytes. A single diskette drive can be used if it is a 320K byte drive, but dual drives are better. Both color and monochrome displays are supported.

Our initial problems with setting up the display format could have been resolved by either an installation section in the manual or (better yet) a configuration program. Fastware says that the latter solution is being considered.

The program will use hard disk if available, and can be copied to and executed from that medium. THOR is not copy-protected, at least in its pre-release form.

☐ Documentation

THOR's documentation was a pre-released copy. Hopefully, the final document will use a different style and format, because the current form is difficult to use and relate to.

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THOR groups "thoughts" into "applications" in a way similar to the way in which conventional database packages group "records" into "files". This basic structure is outlined in the first section of the manual. The second section describes the online help facility, which provides user prompting during program execution.

The next section, called "conversing," defines the way THOR interacts with the user. This may be through function keys, a field editor, or a screen editor. Some of our reviewers thought the paragraph titles in this section might be too technical for the non-technician to understand. After you get by the titles, however, there are very clear descriptions of each facility.

The remaining sections of the manual (which, incidently, was written using THOR!) cover the three general entry methods and the procedures associated with their use. There is no tutorial material and no systematic explanation of how to use the product. We could find no description on how to define, for example, a new application—the very first task necessary to use the system. There are also no indications of what to do in case of error, and this is a particular problem because the package tends to crash if an error is detected.

The manual is also very lightly illustrated, something which contributes to misunderstandings on entry and makes it difficult to find the sections that are related to the current operation. There is no index and no table of contents. Even for a pre-release document, this one was a little rough.

☐ Functionality

THOR has a very straightforward structure. Applications are defined by the user as simple "files" in which thoughts can be collected. Within each application, thoughts can be defined as anything which can be entered and categorized. Thoughts are entered through a screen editor that is very similar in operation to a word processor. A single thought can be as large as the remainder of memory—about 15,000 characters on a 128K-byte system. Up to 32,000 records of 256 characters each can make up an application. Text is keyed free-form. Special display attributes such as color, blink, reverse video, etc can be applied to thoughts for clarity of display and to highlight key parts of the material. Once entered, thoughts can be categorized and retrieved based on the categories.

Our first application for THOR was to record key information extracted from magazine articles. Our technical specialists receive as many as three magazines daily, and often an article will tickle a "let me come back to that" or a "I can use that information in the xyz project". We gave one specialist THOR and invited her to set up an application based on the magazine review.

When she attempted to establish an application, she found no instructions in the manual explaining how to do it. When the program loads, the application screen is displayed, but without the status line, which indicates that the function keys are active. This causes a big problem, since adding an application is a function. To get around this, we selected a "sample" application from the system diskette, and then gained access to the menu to establish our new one. Once

you get the menu, building the application simply involves moving the cursor to a blank area of the application list, adding the name to the diskette drive where the file will be kept, and entering a short description. We later found that you can add this information at the very first display of the application screen. The HELP function finally gave us the answer, but it was tucked away in a slightly illogical place (application names).

Our technical specialist then decided that she really didn't understand this package and called up a calendar sample application to see how that was done. When she tried to view the collected thoughts, she hung the system with another operating system error.

Not to be deterred, we went through the functions of adding an application one at a time, and finally got the magazine test set up. Armed with a pile of magazines, we started to work. The task of entering a new thought is easy—you type it in word processor form and hit ESC when done. At this point you are asked to confirm, presumably, that you are really done, and requested to enter categorization information.

Categories are the key to the entry process. Any number of categories can be established within an application, but only 5 can be specified for any given thought. We decided to define the categories in advance, but there was no facility to pre-define them, nor to list all categories defined in a given application. We misspelled a category and accidently created a thought which was not referenced properly.

Once categories are defined and thoughts entered, selection of ideas is easily managed through a combination of a "state of mind" definition and a "brain scan." The state of mind process defines the category sensitivity to be applied to a selection. Up to 5 categories can be selected, with the usual equal-less-greater relational logic. Selection on a specific word or words of text is also possible.

We discovered that the assignment of categories and the order in which they are specified makes a significant difference in the performance of the selection process. The first category selected should be one that eliminates the largest number of candidate thoughts, since this will reduce the processing associated with secondary selections. We found, for example, that searching on "technical" articles with the subject "data communication" was less efficient than reversing the categories, since our data was primarily categorized as "technical". A lot of care is demanded when entering information that is to be searched on, particularly in the category values. THOR does not recognize the same word in both capitalized and uncapitalized form, for example.

Once a state of mind has been defined by selecting the categories, a "brain scan" will find the thoughts that match. The scan lists the thoughts in groups of 10, and any thought can be selected for expansion by a reference number.

According to the manual, the HELP lists and the function-key menu, selected thoughts can also be printed. We tried, and crashed the system on a "nonexistent file."

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In spite of the problems, we found THOR very effective in our magazine search application, and similarly so in the recording of "brainstorming" sessions. In fact, nearly every application in which a note pad was useful was better served by THOR. On the negative side, we found the product very easy to crash and generally sensitive to errors and unusual conditions. Our specialists adapted to the problems in the way in which they adapted to an obstreperous colleague—they tolerated THOR if they needed the interface, otherwise they avoided it.

□ Ease of Use

With the existing documentation, THOR is hardly easy to use. There are too many novel concepts in the product for the average business user to deal with in an unsupported way, and unsupported is where the manual leaves you. Since the current document is a pre-release manual, we would hope to see that problem corrected later.

The HELP functions are not as helpful as they might be. While help can be selected at any time when data is expected, functions such as PRINT, which begin execution immediately upon selection, have no associated help display. Since the PRINT function repeatedly caused the system to crash upon execution, and since the manual gave no clue to correct the problem, we never got the PRINT function to work.

A more serious problem is the product's sensitivity to operator errors, and its demand for exact forms of entry. When categorizing a thought, THOR demands that the options selected be entered as a capital letter. It also accepts invalid data in critical fields, and crashes when the data is processed. Disk full conditions, easily enough created on systems with single-sided diskettes, also crash the system. During our initial development of the magazine reference application, we crashed THOR 5 times in less than half an hour.

Categorization of thoughts is the most important aspect of the entry of information, yet it is supported only as a stepchild of the thought-entry process. There is no mechanism to insure that the thoughts for a given application are categorized consistently (unless there are only 5 categories, in which case all are visible for each categorization process) and no way to view all the categories for an application. Spelling errors and similar problems can cause records to become "lost" to a given category. We finally dealt with this problem by defining a special category called "SETUP", which was referenced only by a thought that listed all of the other categories and the rules for entering and using them.

The most significant barrier to the use of THOR is the poor error handling. Nearly any file condition causes a fatal operating system error and a THOR crash. There is a nice "your last session ended abnormally" message generated when the product is restarted, and we saw it often enough to memorize it. We also noticed that THOR apparently changes the "current display page" in the PC, so that programs run after THOR sometimes failed to display their text or messages. This was a particular problem with one word processor, and the problem caused us to lose a file

because the operator received no display of the text and therefore thought that the file was empty. We finally discovered that the DOS MODE command would reset the display page and permit operation. A command file to run THOR, setting and resetting the display mode, is the most effective way to support program execution.

□ Support

Since THOR is a pre-release product, it is impossible to predict the type of support which an actual user could expect. We found Fastware helpful in correcting our start-up problems, courteous in their attitudes, and knowledgeable about the product and its applications. Dealer knowledge of a product such as THOR is likely to be incomplete at best, and potential corporate users should contact Fastware directly to purchase and support arrangements.

□ System Interface

Fastware has provided THOR with a simple but highly effective means of interfacing with other products and with programming languages. The text of a thought can be "saved" to a DOS file, wholly or in part, via an editor command. Text can also be loaded into THOR thoughts from a text file. The limitation of these utility features is that each saves or loads an entire file. The transfer of an entire application to a word processor file, for example, would be tedious, to say the least.

□ Vendor Experience

Fastware is a new company with PC programming experience but no widely available commercial software. THOR is a totally new product, not yet available commercially.

■ PRODUCT OVERVIEW

□ Terms & Support

Terms ● THOR is available on a purchase license basis directly from Fastware, Inc. ● dealer distribution policies are not known at this time.

Support ● the product is supported directly via dealers or through telephone consulting.

□ Component Summary

THOR is a database program for the collection and retrievel of idea, thought, and reference data.

THOR:
$295 lcns

□ Computers & Operating Systems Supported

THOR runs on the IBM PC or PC/XT under PC-DOS, and on PC-compatible machines under MS-DOS.

□ Minimum Operating Requirements

While THOR will run on a system with as little as 128K bytes of RAM, 250K bytes are recommended. The package will operate with a double-sided diskette on 2 single-sided diskette drives.

□ Features

File & Record Limitations ● individual thoughts are limited by the memory size—a 128K-byte system can support thoughts up to 15,000 characters long; up to 32,000 records of 256 characters

LCNS: license fee.

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each can make up an application.

Field Size Limitations ● text is keyed free-form.

Key Field Limitations ● up to five key categories can be defined per thought, and each category can have a unique value assigned within each thought; a value or category can be 12 characters long.

Screen Format Definitions ● users may not define data entry screens; thoughts are entered on a free-form display similar to a word processor, and commands and key data are entered in a form provided by the system.

Entry Edit Capability ● none.

Report Format Definition ● printed data is output in display form.

Sort/Merge Capabilities ● none.

Query/Selection Capabilities ● thoughts can be displayed based on up to five category/value combinations, by date of entry range, and by matching up to three keywords in thought text.

Programming & Batch Processing Capabilities ● none.

● **END**

Goldata Computer Services GOLDATAbase
Data Management Package

■ PROFILE

Function ● database management.

Computers/Operating Systems Supported ● IBM Personal Computer, IBM XT, and IBM PC compatibles/PC-DOS or MS-DOS.

Configuration ● 192K bytes of RAM, one double-sided, double-density floppy disk drive; monochrome display or color/graphics board and the appropriate monitor; printer with appropriate interface is recommended.

Current Version/Version Reviewed ● Version 4.01/Version 3.0.

First Delivery ● September 1983.

Number of Installations ● 150.

Comparable Products ● Fast Facts, Condor, Pearlsoft Personal Pearl.

Price ● $350.

Vendor ● Goldata Computer Services, Inc; 2 Bryn Mawr Avenue, Bryn Mawr, PA 19010 ● 215-525-1036.

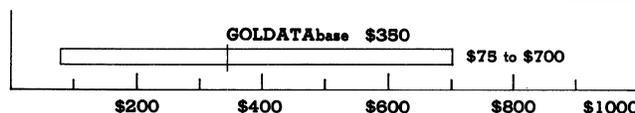**Canada** ● currently no distributors in Canada.

■ ANALYSIS

GOLDATAbase is a user-friendly data entry/data management product designed to fulfill the needs of the user with a limited knowledge of data processing. It is not a sophisticated package which will answer all of the database requirements imposed by the complex corporate environment, but it will provide a vehicle for users without computer programming skills to design, create, and maintain a database file, especially a mailing list or other limited application.

The product seems to be designed primarily for interactive development and use, but it also provides a limited reporting capability and interfaces to and from text- and DIF-type files.

Release 4.0 of the product is due out in the first quarter of 1984. It will include procedural files which will allow the stacking of commands, augmented screen design facilities including functional insert and delete keys, as well as line insertion and removal, and will provide an interface to WordStar-type files.

PURCHASE PRICE RANGE Software Price Range ☐

```
              GOLDATAbase  $350
         ┌──────────────────┬────────┐
         │                  │        │ $75 to $700
         └──────────────────┴────────┘
    └────┴──────┴──────┴──────┴──────┴──────┴──────┘
       $200     $400     $600     $800    $1000
```

GOLDATA COMPUTER SERVICES GOLDATABASE 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 **GOLDATAbase**, 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					5.0					
DOCUMENTATION						6.0				
FUNCTIONALITY				4.0						
EASE OF USE						6.0				
SUPPORT							7.0			
SYSTEM INTERFACE				4.8						
VENDOR EXPERIENCE			3.0							

*For an explanation of rating criteria, please refer to the Data Management Features section in the Software Evaluations (805) report. The Overall Package Average is 5.1.

☐ Strengths

One of the features that contributes significantly to the utility of this product is the simplicity of its structure. Each major processing function is listed on the main menu. The menu includes choices for designing databases, managing databases, designing form letters, indexing, utilities, viewing the file catalog, switching to color, and exiting. This philosophy is carried out in the subordinate menus as well; that is, a few choices are offered with an opportunity to exit to the next higher level menu. This allows the user to proceed throughout a session without needing to refer to the manual for control.

The friendly style in which the product is presented adds to its understandability. It is designed so that the computer novice will have a minimum of difficulty in understanding and using it. It is also organized in a logical manner which follows the normal sequence in which someone will use the product.

The tutorial disk which accompanies the package is well thought out and professionally presented. It is comprised of an introduction and 3 lessons which lead the user through the development and use of a database. However, it presents a slightly different picture of the processing requirements than is supported by the product. This is especially true of the function keys and their meaning and of the requirements for entering commands in an unabbreviated manner. The differences are minor, but may cause confusion.

☐ Limitations

The product suffices for small records. At the present time, it is designed to support only 1,022 total characters in up to 100 total fields—enough for many, but not all, applications. The number of records within a database is limited only by the size of the disk on which it is stored.

The flexibility of the product is hampered by the lack of the

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ability to stack commands for execution, something which would be desirable because of the way in which records are accessed. Version 4.0 of the product will provide the facility to stack commands. In order to view a record, it must first be found. Once found, it may be displayed. If a second selection is desired, it must be found before it may be displayed. (If the selection is to be modified, it may be expanded to include additional records or narrowed to exclude unwanted records.) Records are viewed one at a time. If the entire selection is wanted, it must be printed.

Modification of records is performed in a less-than-efficient manner. The only means of skipping over a field to get to one needing modification is via the down arrow key. If this is the only product which is used, it causes no inconvenience, but if other products are involved, it will be difficult to remember that this product uses the down arrow while another uses the enter key and a third uses the tab key.

■ HANDS-ON EVALUATION

The installation of the product was accomplished by our professional staff without any need for technical assistance by placing the appropriate diskette in the "A" drive, then booting the system. Unfortunately, a backup copy of the diskettes is not provided with the product, but a reserve copy may be purchased from Goldata Computer Services, Inc for $20, which should certainly cover the cost of materials and postage.

Operation of the product is also simple. The tutorial disk provides an introduction and a 3-lesson approach, which is easy to follow. It even lets you key the requested commands by pressing the space bar and have the appropriate characters entered one-by-one; those not willing to key even the space bar may move from page to page within a lesson by using the PgDn key. Previous pages may be be viewed by pressing the PgUp key. The tutorial provides a reasonable introduction to the product.

Once the tutorial is viewed, it is time to create a database of one's own. As long as the rules are followed, all proceeds nicely, but when some of them are violated, unexpected results can occur. For example, we found that we could define a numeric field 80 characters long, but could only range check it for a maximum of 14 digits. We also found that entering all 9s in the 80-character numeric field which we were able to define caused the product to terminate abnormally. We could not define a field on the screen longer than 80 characters.

□ User Interface

GOLDATAbase makes extensive use of menus to provide command and control for the creation and maintenance of a database. Frequently used commands subordinate to each menu are predefined as function keys, which reduces the keying burden. The result is an easy-to-use product.

Menus: Access to each of the major functions of the product is controlled through menus. The general structure is to have a menu to control the flow of the operation which the user is attempting to accomplish,

such as maintaining your database, while commands are used to perform functions within a menu. They do not extend beyond 2 levels and rarely need to be by-passed.

Control Characters: Control character sequences are not supported.

Function/Special Keys: Function keys are used as a shorthand means of entering 10 of the 18 GOLDATAbase commands. Five special keys are used during database design to delineate specific field types.

Command Language: Commands are English-like in their structure and content. They may be abbreviated to the first 3 letters of the word.

Positive Feedback: The user is not allowed to make a modification to the database or its specifications without being asked: "Are you sure?". This includes the addition process, which makes keying large numbers of records cumbersome.

Status Display: None.

Help Facilities: Extensive Help facilities are available to the user while online. The basic Help command provides a synopsis of each of the 18 commands. The second level of help, that is help followed by the first letter of the command in question, will provide a detailed discussion of the particular command requested.

□ Environment

Although 192K bytes of RAM is required for the product, it only requires a single disk drive. A printer is not specified; however, the facility provided for producing form letters and the like will not be fully utilized without one.

We tested using an IBM PC with 512K bytes of RAM, 2 double-sided, double-density disk drives, a Princeton Graphics System color monitor, and an Okidata Microline 92 printer. We also tested using an IBM XT with 512K bytes of RAM, an IBM color monitor, and an Anadex WP6000 printer. We experienced no problems on either system.

□ Documentation

GOLDATAbase provides a comprehensive manual which describes the operation of the product in terms designed for the computer neophyte. It expects that all levels, including the computer novice, will be using the product and, therefore, provides a basic overview of the concepts of database processing as its introduction. The remaining chapters of the reference manual each deal with a choice from the main menu such as Design Your Database, Manage Your Database, and Define an Index Field in a logical manner in the form of a written tutorial. In addition, a section entitled Trouble Shooting is provided which contains an alphabetic listing of all of the possible error messages with an extended explanation. Also included is a section on the development of the product and a statement of its user service policy.

The manual generally succeeds in its attempt to address the concept of a database at a level comprehensible by anyone. It presents its material in a clear and unambiguous manner which assists all who use it in

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understanding the capabilities of the product.

The worst feature of the manual is the treatment given to the index. Only 40 items were deemed important enough to warrant a place in the index. Because of this, it is sometimes difficult to find a particular item.

☐ Functionality

Our technical staff found that an inventory control application fit nicely into the confines of this product. We used the product initially to create a database simulating inventory items in a catalog which would need to be retrieved in logical sets based on some selection criteria for online response to customer questions. Later, we added the commands necessary to produce meaningful reports. The product contains all of the features necessary to develop the above application, but the inability to stack commands meant that the standard ones had to be written and maintained separately in order to reproduce the desired reports. Although the problems encountered were simple, they were, nevertheless, annoying and detracted from the intent of our technical staff to adapt the product to their own specifications.

Our clerical staff found the product to be user-friendly and flexible for simple applications. They appreciated the visual aid offered by the system when it pertained to command selection. Commonly used commands are shown at the bottom of the page with the function keys used to activate them. With this visual aid, it was often unnecessary to refer to the manual even before they became familiar with all the commands.

The system allows access to any record by the content of any field. We found, however, that it is a cumbersome task to view more than one record via the display command since it only allows the user to see one record at a time. The Find command will locate the required record but will not display it. The Display command must be invoked for each record that is to appear on the screen.

There is a way to access records quickly using the Get command. For this, the fields used as keys must be indexed first, but again, using this option, the display command must be entered to bring the data to the screen.

Multiple records meeting a Locate/Get criteria may be printed, but not displayed. Our professional staff found this oversight frustrating.

Our technical and clerical staff appreciated the positive feedback required by the system whenever records had to be deleted. The system always prompts with "Are you sure?" before removing the record. However, they found it unnecessary to confirm every addition to the record in the same manner. This practice did not make the keying of a large volume of transactions desirable since it precluded the facility for heads-down keying.

In performing arithmetic functions, our staff was pleased to have the option to define calculated fields using formulas, even though only arithmetic (add, subtract, multiply, and divide) operators were supported. Our clerical staff created a database designed to keep warehouse records and did so successfully, although the speed at which the records can be entered is limited because of the

interruption to assure the system the records are ready to be added.

Our clerical staff did find the product useful when preparing mailing labels and creating form letters. It offers the ability to prepare a database as well as to prepare mailing labels or form letters. There are limitations on the space and number of columns to be used. The screens can extend to 66 lines with a width of 80 or 132 characters.

At the present time, GOLDATAbase is structured to support 1,022 characters or 100 total fields. There is a capacity of 66 lines per screen and a width of 80 or 132. Our professional staff found these parameters confining when they tried the product on a budget report. However, it is possible to create a simple but elegant database with a multiple number of headings, sub-totals, and totals. GOLDATAbase does perform calculations quickly and no major problems were encountered when using the product for the generation of small reports.

☐ Ease of Use

Our clerical staff was initially attracted to the product because of the affirmations found in the manual that anybody, even those with no computer knowledge at all, would be happy to find that it was possible for them to become proficient in the creation of databases in a short period of time.

The command structure used by this product is indeed simple. Commands are English-like and can be entered in an abbreviated form into the system. Our technical staff had no difficulty in using many command combinations to define their purposes. They also appreciated viewing the commands on the screen whenever a database is created or used. Function keys associated with each command are also displayed at the bottom of the screen.

Our technical staff was more likely to become impatient with the system whenever commands were not accepted. GOLDATAbase displays a message saying "don't understand your command," but does not give a clue as to what may be causing the problem. They found the Help feature useful in obtaining a quick overview of the commands and their functions. This, at times, provided a quick solution as to why the commands were not being accepted.

Both our professional and clerical staffs used the system without encountering any major problems. Their main complaint seemed to lie in the limitations of the system when viewing screens or when entering data or changes to the data already residing in the database. The product provides access to each record by field but does not display a group of records all at once. The records are displayed on the screen one at a time. After the system locates the records being searched, it will show a message indicating how many records have been found. The user must then select the Display Command to view each entry individually.

☐ Support

Goldata Computer Services provides an exclusive hot-line for the support of its registered user group with programming advice and information on new releases

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Goldata Computer Services GOLDATAbase
Data Management Package

and the like. We called with 2 questions, both concerning the format of data in the database design phase. First, we wondered if a field larger than 80 characters could be defined—it could not. Second, we asked if there was any means of restricting the number of digits in the defined field to the implied maximum of 14 allowable as a range. We had entered a number field with 80 digits which was not detected as an error. Further, if the maximum of the range specified is all 9s and more than 14 9s are entered (we entered 80), the program terminated abnormally without an error message.

Their reply was that this was the first time that anyone had used more than the maximum number of digits and that if the upper range was the default, all 9s, that the described error would indeed occur. They took note of it and will correct the problem in a later release.

☐ System Interface

Two interfacing utilities are provided with this release. The first is a utility which will convert to and from text files. And second is a utility option to read or create DIF-type files. We experienced no difficulties or surprises with either.

☐ Vendor Experience

Goldata Computer Services, Inc was established in 1976, but did not enter the micro computer field until December of 1982. GOLDATAbase is its first venture into the field.

■ DETAILED PRODUCT DESCRIPTION

☐ Terms & Support

Terms ● GOLDATAbase is available on a license for purchase only basis from Goldata Computer Systems, Inc, through computer dealers, software vendors, or mail order houses throughout the United States; updates are available to registered users at a cost of one half the difference between the versions of the product; free updates are provided to those who supply solutions to software bugs.

Support ● telephone hot-line support provided by Goldata technical staff for registered users.

☐ Component Summary

GOLDATA.EXE is a menu-driven program to allow the user to create, maintain, and operate a database file.

TUTORIAL.EXE is a menu-driven program to provide an

LCNS: license fee.

introduction to the capabilities and use of the GOLDATAbase product.

Other programs and modules are provided to support the two programs above.

GOLDATAbase:

$287 lcns

☐ Computers & Operating Systems Supported

GOLDATAbase supports the IBM PC and PC/XT running PC-DOS. It also runs on PC compatibles with MS-DOS.

☐ Minimum Operating Requirements

The package requires 192K bytes of RAM, one double-sided, double-density floppy disk drive, and a monochrome display or color/graphics board with appropriate monitor. A printer is also recommended for operation.

☐ Features

File & Record Limitations ● individual records are limited to 1022 characters or 100 fields, whichever occurs first; however, the number of records within a file is limited by the size of the disk.

Field Size Limitations ● individual fields may contain up to 80 characters, numeric fields may be range checked up to 14 digits, dates may be either 8 or 10 characters, however, the maximum number of characters may not exceed 1022.

Key Field Limitations ● records are stored as they are entered without reference to keys; an index file may be generated from any field which will facilitate the retrieval of records; however, it must be regenerated after each modification to the database.

Screen Format Definitions ● from the Design a Database selection from the main menu, the user is able to layout an input/display form for the records; 5 key characters are used to denote field types, all others are treated as descriptive labels; all fields and labels must fit on a single screen consisting of 20 lines, each 80 characters long.

Entry/Edit Capabilities ● fields may be designated as mandatory; numeric fields may have a range check.

Report Format Definition ● formatting for reports includes spacing, partial fielding, and running totals via the print command.

Sort/Merge Capabilities ● both sorting and merging are supported; database records may be sorted on single or multiple fields; records from 2 databases may be merged.

Query/Selection Capabilities ● "get" command offers selectivity on an index field basis while the "find" command offers selectivity on all fields.

Programming & Batch Processing Capabilities ● no internal batch processing is supported; however, the product may be customized for individual needs.

● END

Haba Systems III E-Z Pieces
Integrated Spreadsheet, Word Processor & Data Management Package

■ PROFILE

Function ● an integrated database, spreadsheet, and word processing package operating under a "top-level" desktop manager.

Computers/Operating Systems Supported ● Apple III and Apple III Plus computers using SOS (Sophisticated Operating System).

Configuration ● an Apple III or Apple III Plus computer with a minimum of 128K bytes of memory; however, the 128K-byte user will be somewhat cramped in the memory space available to "desktop," or working, files.

Current Version/Version Reviewed ● Version 1.0 was reviewed on an Apple III with a clockchip, 256K bytes of memory, and a 5M-byte hard disk (Apple's Profile).

Date of First Installation ● December 1983.

Number of Installations ● approximately 6,000.

Comparable Products ● none for the Apple III; somewhat similar to Lotus 1-2-3 or VisOn for the IBM PC.

Optional Associated Software ● Habanet (program selector), Habadex (telephone and personal appointment manager), Graph'N'Calc (graphics), and others in development.

Price ● $295 retail price.

Vendor ● Haba Systems, Inc; 15154 Stagg Street, Van Nuys, CA 91405 ● 213-901-8828.

Canada ● currently no Canadian distributors.

■ ANALYSIS

III E-Z Pieces is an integrated spreadsheet, database, and word processing package operating under a "top-level" desktop manager. The desktop manager conveniently allows the user to work with up to a dozen files, or whatever fits into memory. For example, you could have a dozen spreadsheets open all at once (or any other combination of a dozen spreadsheet, database, and word processing documents!) and conveniently jump back and forth between them. The files are simultaneously in the memory of the Apple III and changing files is instantaneous. In addition, information can be "cut" from one file and "pasted" into another report.

Home, business, and corporate users will appreciate the

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT								8.0		
DOCUMENTATION						6.0				
FUNCTIONALITY								8.5		
EASE OF USE								8.0		
SUPPORT						6.0				
SYSTEM INTERFACE								8.0		
VENDOR EXPERIENCE							7.0			

*For an explanation of rating criteria, please refer to the Software Evaluations (805) report. The Overall Package Average is 7.4.

thorough integration of the III E-Z Pieces software package. The ("open-apple") function key commands are common to the whole package, not only the spreadsheet, the database, and the word processor. This means that the user only has to remember one set of commands and read one manual. If 3 separate, unintegrated packages were bought, this would not be the case. As expected, online Help is always available to assist the user in remembering those often-forgotten, function-key commands. And a real bonus to the integration (at least from a user's viewpoint) is the screen dump command. The screen dump, or hard-copy command, dumps the console screen's text to the printer. A screen dump is always available by pressing the "open-apple h" (for hard copy) command.

III E-Z Pieces sports a whopping 127 columns by 999 rows for a total of 126,873 empty cells. That probably makes it larger than all other spreadsheets for the Apple III. It also calculates faster than most other spreadsheets. It features a standard complement of functions, such as sum, average, maximum, minimum, and many others. It contains a nice set of formatting, or printing, capabilities. It can read VisiCalc, Advanced VisiCalc, and DIF files so users can change over from previous spreadsheets. A "clip board" is used to transfer results from a spreadsheet to a word processing document.

The database allows users to work with information normally kept in lists. A list, generally stored as a file, consists of a set of records. As an example, a phone book would be a list, and each name would be a separate listing, or record. Each record can have up to 30 categories of information. For our phone book example, these categories might include area codes, phone numbers, addresses, cities, zip codes, and the like. III E-Z Pieces allows the user to store and recall lists, manipulate the records, arrange or sort the list (by any category), print the list, etc. Printed results can be in a format that's handy for

PURCHASE PRICE RANGE   Software Price Range [   ]

III E-Z Pieces **$295**

[   ] $295 to $700

| $200 | $400 | $600 | $800 | $1,000 |

HABA SYSTEMS III E-Z PIECES PRICING ● open bar shows the typical range of prices for **INTEGRATED SPREADSHEET, WORD PROCESSING, DATABASE** software used in a corporate environment ● the vertical line within the bar graph indicates the price of **III E-Z Pieces,** the evaluated product, relative to the price range of similar products.

Haba Systems III E-Z Pieces
Integrated Spreadsheet, Word Processor & Data Management Package

printing mailing labels, called "label format," or in columns called "table format." A "clip board" is provided to easily transfer results from the database to word processing documents so that users can fully incorporate, or integrate, their work.

The III E-Z Pieces word processor is simple to use yet powerful, both as a text editor and a text formatter. As a text editor, entering text is as simple as typing. Moving around in a document is as easy as pressing the cursor keys. Deleting or moving a block of text, whether it be a word, sentence, or paragraph, is accomplished by highlighting the text with the aid of the cursor keys and following program prompts. Finding and replacing words, or strings, is just as simple. And when it comes to printing (or formatting as it is called) generally, what you see is what you get!

The formatter commands are simple to use for the novice and delightfully powerful for the advanced user. III E-Z Pieces automatically prints headers, footers, and page numbers. Documents can be printed in single-, double-, or triple-spaced formats. Left justified, center justified (useful for titles, etc), and right justified printing is available. True proportional printing is supported on all Apple printers. The advanced formatting commands include boldface, underlining, superscript, subscript, "sticky spaces," and the control over page breaks.

☐ Strengths

Besides being the only integrated software package that we know of on the Apple III, III E-Z Pieces is also a fine piece of software. It was designed for the Apple III, and not as an afterthought or as a product that was quickly moved over from another computer and operating system. It fully uses the Apple III's capabilities in the function keys (i.e., the open-apple and close-apple keys), memory, and driver areas.

Another obvious point in this program's favor is its price. At $295, it is very affordable for home or business use. It is difficult (probably impossible) to replace III E-Z Pieces with 3 separate packages performing spreadsheet, database, and word processing functions at a lower cost. But the major advantage of III E-Z Pieces is not its lower cost, but its common command structure, program integration, and desktop manager. The user learns one set of commands, uses one Help menu, and reads one manual to use 3 programs. Employing simple menus, III E-Z Pieces allows the user to conveniently operate on multiple spreadsheet, database, and word processor files. The desktop manager facilitates the use of common operating system and maintenance-type functions within III E-Z Pieces. The user can perform directory listings, change prefixes, create subdirectories, delete files, format blank diskettes, modify default printer setup and control codes, and the like, from within III E-Z Pieces. The printer setup is, of course, used for the database, the spreadsheet, and the word processing parts of the package.

☐ Limitations

There is no reasonable method of moving word processing documents directly into the spreadsheet. For this task, the user would be forced to create a database as an intermediate point, and then generate a spreadsheet.

For word processing, split-screen operation is also not supported. Also, III E-Z Pieces does not work well with multiple ASCII files and does not have a keystroke sequence memory for remembering those often retyped phrases. The package also does not have a print spooler incorporated into the desktop. This is mitigated by the fact that Quark's Discourse, a print spooler, is available separately.

■ HANDS-ON EVALUATION

We followed the III E-Z Pieces' instructions on installation of the program onto a hard disk under Quark's Catalyst. The installation instructions are a little different under Catalyst 2.0 than for Catalyst 1.0 (as contained in the manual). Nevertheless, the installation was easy. It also has instructions on how to install it on Haba Systems' Habanet. Businessmen and professionals will like the easy hard-disk installation.

III E-Z Pieces was designed so that it can be used almost instantly. The online Help command and the Sample files diskette allow the user to jump right in and try the program. III E-Z Pieces makes it difficult to make a mistake, such as forgetting to save a file. If quitting is attempted before saving a document, a reminder will appear on the screen, and the program will confirm the request. For complex commands, the user is prompted through a set of short (one line) prompts.

Having multiple files on a desktop, available for instant use, is a wonderful feature that allows users to transfer data back and forth rapidly between desktop files. We found this an indispensable tool for coordinating our multispreadsheet accounting models, which feeds subtotals into other spreadsheets.

All in all, the package was easy to use and quick to learn. The built-in screen dump facility was easy to use and will be appreciated by the novice and advanced users alike. Another unique feature that is best appreciated by use is the "open-apple number" command. This allows the user to scan a document (in a spreadsheet, database, or word processing document) in 8 steps. It's convenient for finding the beginning of files ("open-apple 1"), the end ("open-apple 9"), or anywhere in between.

For those users that already have software, III E-Z Pieces reads VisiCalc, Advanced VisiCalc, and DIF files. It reads all the labels and values correctly. It fills in @error for those formulas that it doesn't have; therefore, you don't lose everything in a file just because it doesn't understand one cell! However, when reading ASCII text files into the word processor, III E-Z Pieces isn't so forgiving. Should your ASCII file contain too many lines (even short lines), then none of the file is kept.

☐ User Interface

Professionals will tend to like III E-Z Pieces' simple, multiprogram integrated commands, the simple menus, and the omnipresent Help command.

Haba Systems III E-Z Pieces
Integrated Spreadsheet, Word Processor & Data Management Package

Menus: The menus provided are clear and easy to understand. The main menu offers the user the choices of adding, saving, removing, or selecting files for the desktop, or for quitting the program. The "other activities menu" provides the support operations related to storage and upkeep of data, including the formatting of diskettes. The printer options menu provides the information necessary for printing, including margins, paper length, and the like. III E-Z Pieces makes extensive use of menus and prompting. File selection is perhaps the nicest example of selection by menu. And the use of the Help and other command menus does not lose the user's position in the text.

Control Characters: Control characters are not used as commands in the program.

Function/Special Keys: The Apple III's cursor keys permit direct movement within the document and are also used for selecting menu choices. Common commands are accessed via the "open-apple" key. These single-key operations are based upon easy-to-remember mnemonics, such as "open-apple C" for cut-and-paste operations, "open-apple ?" for online Help, "open-apple H" for a hard-copy screen dump, "open-apple P" for print, "open-apple A" for arranging or sorting data, etc. The other numerous, and sometimes complex, supporting commands are prompt and menu driven so that memorization is kept to a minimum.

Command Language: No command language exists.

Positive Feedback: The program keeps the user informed as to what operations are being performed, the mode the user is in, and how to escape to other (higher) program levels, and what commands are valid to use. Most feedback is given by way of the status display. When lengthy spreadsheet calculations occur, the program keeps the user apprised of the progress.

Status Display: The screen contains the state of the machine, information on how to escape to a higher program level, and what commands are valid.

Help Facilities: The Help menu contains a list of the commands for each III E-Z Pieces' program and can be initiated anywhere by pressing "open-apple ?". The Help menu also displays the amount of memory left for desktop files.

□ **Environment**

III E-Z Pieces supports Apple IIIs with at least 128K bytes of memory. It will fully support the 256K Apple III, allowing the user much more "desktop" memory space. The program may be used with one disk drive, but a hard disk or external second drive is desirable. Support for the Apple III clockchip has been provided and is desirable.

Most printers are supported. III E-Z Pieces comes preconfigured for support of these 10 standard printers: Apple Imagewriter, Daisy-Wheel Printer, Dot-Matrix Printer, and Silentype; Epson MX Series, MX/Graftrax Series, RX Series, and FX Series; Qume Sprint 5 and Sprint 11. Other printers are manually installed by filling in the characters required to control their special features.

III E-Z Pieces is not copy protected, nor is it "reset-key" protected. This allows the user to make his own backup copies, and it allows the program to be stored on most block devices (i.e., disk drives). Thus, the user can be running off of 5.25-inch diskettes, high-density 5.25-inch diskettes, 8-inch diskettes, Apple's Profile hard disk, other brand hard disks, etc.

□ **Documentation**

The III E-Z Pieces manual is clear and comprehensive. The manual is best described as functionally organized by desktop, database, word processing, and spreadsheet. Screen images and examples of printed forms are supplied throughout the manual. At the back of the manual there are two appendices and an index. The two appendices provide information on installing III E-Z Pieces on hard disk and information on sending III E-Z Pieces files over phone lines.

□ **Functionality**

Generating memos, letters, and small reports with spreadsheet and database information presents no problem for users with a little experience on III E-Z Pieces. The program has all of the standard word processor features such as full-screen editing, cursor control, "open-apple" function keys, find and replace, fast movement through the document, headings, footings, page numbers, and the like. Plus, it accepts text from the spreadsheet and database programs.

The functionality of the spreadsheet is enhanced by sorting ability. Numerical sort and alphabetic sort capabilities are incorporated in both the spreadsheet and the database. The spreadsheet supports cell reference via the cursor and has "goto" capabilities. The spreadsheet also supports cell protection, individual column width control, dollar formatting of cells (including dollar signs, commas, and parentheses for negative numbers), the ability to transfer results via the clipboard, etc.

The database supports sorted fields, computed fields, label and table formats, the ability to transfer results via the clipboard, etc.

The database allows up to 30 fields per record. The number of records that can exist is dependent on the size of each record and the amount of available memory in the Apple III. About 2,300 75-character records can be contained in a 256K-byte Apple III and about 625 75-character records can be contained in a 128K-byte Apple III. The database provides lightning-fast sorts, about 15 seconds for 1,500 records. This is dramatically faster than most other systems. It provides arithmetic support, sometimes called calculated columns, so that a new category can be created based on the information contained in other categories. An example of its use would be on an invoice for multiplying the quantity of a line item times its cost. Additional arithmetic support is provided by allowing category totals and group totals.

The spreadsheet is very large (127 columns by 999 rows) so the user need not feel cramped. An Apple III with 128K bytes of memory can hold about 3,100 filled-in cells, whereas a 256K-byte Apple III can hold about 11,000 filled-in cells. In general usage, the database and word processor share the memory pool with the spreadsheet;

Haba Systems III E-Z Pieces
Integrated Spreadsheet, Word Processor & Data Management Package

therefore, all of memory is not available. From a pragmatic viewpoint, few users need worry about having too few cells.

III E-Z Pieces contains most standard features of spreadsheets, such as the ability to replicate cells, the ability to use math functions and pointers, the ability to put labels, values, and formulas in cells, plus a few additional features. The program allows column sorting, either alphabetically or numerically. As an example, a user might sort the district sales report by a column that contains the salesmen's names—an alphabetic sort, or dollars sold—a numeric sort. Several unique features are incorporated that make spreadsheet usage much more convenient. For example, the program allows the user to type across more than one cell when entering text, to specify individual column widths, to show data with dollar signs and commas, and to protect cells from accidental overwriting.

Word processing with III E-Z Pieces is easy yet powerful. The word processor has several handy editor features, for example, the text markers make editing and moving around in the text easy. Text entry occurs as a text overstrike or by the insertion of characters in text, and the ability to cut and paste by highlighting text makes text editing easy for the novice.

Integrated packages often have difficulties exchanging data between packages. We investigated III E-Z Pieces for problems that might exist in exchanging data back and forth between the 3 programs and found that the package exchanges data fairly well. Any program can interchange data with itself by passing the information to the clipboard, and any program can use the clipboard to transfer results to a word processing document. Transferring spreadsheet information to a database or vice versa requires that data must be written in Data Interchange Format (DIF) to a file on disk and then read back. The word processing to database transfer makes use of an ASCII (text) file and is useful for transferring mailing lists into III E-Z Pieces.

□ **Ease of Use**

The ease-of-use features of III E-Z Pieces make it a candidate for home use, for secretarial use, and for direct use by professional or technical personnel. As a text formatter, it is full featured for most business and office work, but would not support the extensive features required to maintain a document production environment (like automatic generation of tables of contents, figure tables, index tables, etc). Most other available word processors also suffer in this area. III E-Z Pieces' primary appeal is as a home or office software package for professionals and office workers performing small report processing including database and spreadsheet information.

□ **Support**

III E-Z Pieces comes with a free 90-day warranty. After 90 days, there is a small fee for replacement diskettes. III E-Z Pieces is delivered as 3 unprotected diskettes, so that users can make their own backup copies. Haba has an excellent support staff that can be reached at 818-901-8828. No 800 number is presently available. Updates to III

E-Z Pieces are available for a minimal fee; upgrades, as new features are added, are available at a reduced rate.

□ **System Interface**

III E-Z Pieces supports several standard interfaces: DIF files, VisiCalc, Quick File, and ASCII text files. An appendix gives information on transferring data over communication lines.

□ **Vendor Experience**

Haba Systems, Inc makes several Apple III software packages, including Habanet (a program selector), Habadex (a telephone and personal appointment manager), and Graph'N'Calc (a graphics plotting package that includes statistical and mathematical techniques). The company stands committed to the Apple III.

III E-Z Pieces' author, Rupert Lissner, is also the author of Apple's Quick File. This indicates whey the quality of the III E-Z Pieces, especially the database program, is so good.

■ PRODUCT OVERVIEW

□ **Terms & Support**

Terms ● III E-Z Pieces is available for purchase from Apple Computer, Inc, through Apple dealers, or directly from Haba Systems, Inc.

Support ● telephone hot-line support; the number is 818-901-8828; no 800 number is currently available.

□ **Component Summary**

III E-Z Pieces is provided as a set of 3 unprotected diskettes: a Boot diskette, a Program diskette, and a Sample Files diskette. The Boot diskette contains: SOS.DRIVER—driver files for the SOS operating system; SOS.KERNEL—SOS (Sophisticated Operating System); SOS.INTERP—the interpreter, or program, that runs under SOS; and SEG.00—one of the program segments. The Program diskette contains the following program segments: SEG.MN, SEG.ER, SEG.PR. The Sample Files diskette contains 13 examples of spreadsheet, database, and word processing files.

III E-Z Pieces:

	$295 lcns

□ **Computers & Operating Systems Supported**

III E-Z Pieces is supported under the Apple's SOS (Sophisticated Operating System).

□ **Minimum Operating Requirements**

Apple III or Apple III Plus computer with at least 128K bytes of memory, and an 80-column monitor; most serial or parallel printers are supported. Desirable extra equipment would include a Profile hard disk, a clockchip installed in the Apple III, and one or more external disk drives.

□ **Features**

III E-Z Pieces is an integrated spreadsheet, database, and word processing package that contains many special features designed to support the corporate users in a business environment. Some of the capabilities include:

Number of Open Files ● up to 12 files may be open on the desktop simultaneously (or whatever will fit into the memory of the Apple III).

Ease of Jumping Between Desktop Files ● the user may rapidly and easily quit working with one file via an "open-apple Q" command and select another file to work with.

LCNS: license fee.

Haba Systems III E-Z Pieces
Integrated Spreadsheet, Word Processor & Data Management Package

Command Structure • common editing and control functions are performed by one set of "open-apple" function key commands, common to all parts of III E-Z Pieces; a prompted command structure coupled with selection from small menus (a few lines long) escort the user through otherwise complicated sequences of commands; the program provides a full-screen menu when manipulating files on the desktop or dealing with the SOS operating system • the open-apple function key is extensively used; screen dumps are available at any time via the "open-apple H" command.

Error Recovery • III E-Z Pieces handles errors in a very forgiving manner; the desktop manager reminds the user to store each working file on the desk; the prompting command structure coupled with selection by menus makes it difficult to make catastrophic errors.

Block Structure • supports cut and paste; moves and copies words and paragraphs by highlighting the selected area.

Spreadsheet Size • allows up to 127x999 cells per spreadsheet.

External Interfaces • interfaces to VisiCalc, DIF files, ASCII files, and Quick files.

☐ **Other Facilities**

Optional, extra-cost packages available for use with III E-Z Pieces would include Habanet (a program selector), Habadex, (a telephone and personal appointment manager), Graph'N'Calc (a graphics plotting package that includes statistical and mathematical techniques), and others in development.

• **END**

Harvard Software Project Manager
Project Planning Package

■ PROFILE

Function ● project planning and control.

Computers/Operating Systems Supported ● IBM PC, Compaq, Hyperion, and Eagle/PC-DOS or MS-DOS.

Configuration ● 192K bytes of RAM for DOS 2.0; 128K bytes of RAM for DOS 1.1, 2 double-sided, double-density floppy disk drives or hard disk; monochrome display or color/graphics board and the appropriate monitor; IBM, C. Itoh ProWriter, NEC PC-8023, or Okidata Microline 84, 92, 93 printers are supported.

Current Version/Version Reviewed ● Version 1.1/Version 1.0.

First Delivery ● September 1983.

Number of Installations ● approximately 6,000.

Comparable Products ● Morgan Computing Pathfinder; Peachtree Software Project Management System.

Price ● $395 retail price.

Vendor ● Harvard Software, Inc; 521 Great Road, Littleton, MA 01460 ● 617-486-8431.

Canada ● Citation Software, Inc; 1901 Logan Avenue, Winnipeg, MN R2R 0H6 ● 204-632-0559.

■ ANALYSIS

The subject of scheduling is addressed in a professional manner by the Harvard Project Manager. It uses tasks and milestones to describe projects. A task is defined as "any specific activity with a well-defined beginning and end and a more or less predictable duration and cost." The term milestone is used to indicate "a specific event in time which is objectively describable, meaning that unbiased, intelligent observers could determine that the event occurred." And, "a project is a series of related activities directed toward a specific goal and completed within a specific timeframe."

In order to describe the projects, Harvard Project Manager uses the Program Evaluation and Review Technique (PERT). They name this layout of tasks and milestones for a project a Project Roadmap. Within the Project Roadmap, the Critical Path Method (CPM) is used to depict that task or series of tasks for which there is no slack time. The critical path is denoted by double lines.

For the purposes of scheduling and tracking, they provide a Schedule Bar Chart which represents the schedule of

PURCHASE PRICE RANGE

Software Price Range [_____]

Harvard Project Manager **$395**

[___|_____] $275 to $700

$200 $400 $600 $800 $1,000
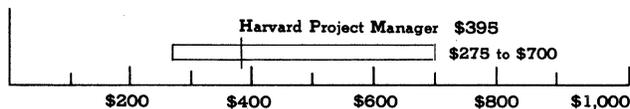
HARVARD SOFTWARE PROJECT MANAGER PRICING ● open bar shows the typical range of prices for **PROJECT MANAGEMENT** software used in a corporate environment ● the vertical line within the bar graph indicates the price of **Harvard Project Manager**, the evaluated product, relative to the price range of similar products.

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT					5.0					
DOCUMENTATION									9.0	
FUNCTIONALITY							7.0			
EASE OF USE								8.0		
SUPPORT					5.0					
SYSTEM INTERFACE						6.2				
VENDOR EXPERIENCE			3.0							

*For an explanation of rating criteria, please refer to the Software Evaluations (805) report. The Overall Package Average is 6.2.

tasks to be accomplished; the timing of the tasks including start, stop, and slack; and the relationship of the tasks to the milestones. (Standard project management terminology would refer to this chart as a Gantt Chart.)

Project planning tasks are associated with nearly every type of organization. Some may be able to justify a computer system on such tasks, but even those which cannot (providing they have some other justification and, therefore, gain access to a system) will find the Harvard Project Manager a useful tool in scheduling.

□ Strengths

The facet of this product which makes it stand out from other scheduling programs is the human engineering which the authors have incorporated into it. The first and most noticeable of these features is the windowing function. Upon entry into the system, after viewing the copyright screen, the user is greeted with a screen divided into 4 equal areas or windows, each of which supports a different function. The functions are entitled Roadmap, Schedule, Calendar, and Function.

User function selection is via a menu, the options being displayed at the bottom of the screen. Selection is made by keying the first letter of the function name as shown in the menu or by moving the cursor to highlight the desired function (similar to Lotus 1-2-3's menu structure). When an item is highlighted, a brief description of the function of the highlighted option is displayed.

Once an option is selected, the window for that function is expanded, and the other 3 choices disappear from view. This allows the user to view and concentrate on one option at a time, but it does not cause the user to lose his or her place in the other functions. This means that the user can point to a particular task or milestone while in the Roadmap function, elect to change the Schedule for a different task or milestone which requires that the Roadmap option be exited, and find that when the

Harvard Software Project Manager
Project Planning Package

Roadmap screen is returned to, the same task or milestone is highlighted as was before.

☐ Limitations

There are two main limitations with the printing of reports.

First, printing is painfully slow, especially in "sidewise" mode. In order to produce a graphic report, the product translates each line and transmits it to the printer. It is reasonable that this should occur when the Roadmap is printed since it uses some graphic symbols not usually found in a printer's repertoire of characters, but it is not expected that something with standard characters, such as a Calendar, should be given the same treatment.

The second drawback with the printing is that it is not a background task. This means that if it takes 20 minutes to print your roadmap, then your machine is not usable for any other function during that time. It is suggested that once the print function is begun, a coffee break can ease the frustration of waiting for the completion of your report.

From a functional view, the product does not provide an internal means of tracking by resource. This means that the user must place the tasks in their proper hierarchy when they are added; otherwise, a resource may be counted upon twice. Costs can be tracked as the user can create a Data Interchange Format (DIF) file which can be interfaced with any of the popular spreadsheet programs which support that format and perform the analysis.

■ HANDS-ON EVALUATION

Installation is a two-step procedure. The first step is to install the operating system on the product diskette; the second, to customize the product for the particular printer employed. Our staff had no difficulty in installing the product even though an Okidata Microline 92 printer was used. Harvard Software, Inc provides a procedure to copy the custom module of supported printers to the general interface used by the product. This makes it easy to install by anyone who can follow simple directions.

The tutorial function of the product is satisfied by 8 demonstration versions of a sample project which lead the user through the major functions of the system. The steps along the way begin with the creation of a project, follow it through by adding concurrent tasks and manipulating nodes, expanding with subprojects, framing by specifying the work week and holidays, and, finally, establishing the starting dates and costs. A "final" version is provided in order that the user can check accuracy.

Personnel used to the meticulous detail involved in scheduling will not find the setup unusually complex, but users who somehow felt that the computer was going to "do it all" are initially disappointed.

☐ User Interface

The Harvard Project Manager (HPM) uses the proven strength of menu trees to speed the user through processing. Several keys have special functions, such as the space bar being used to move one menu item to the right, but only the F1 function key is used to obtain Help.

The net result is an extremely user-friendly environment in which to build a schedule.

Menus: Menus, sometimes referred to as "windows" in HPM, are used to control the major functions of the product. Items on the menu can be selected by keying the highlighted letter in them or by using the space bar/backspace key combination to highlight a choice and the enter key to confirm it.

Control Characters: The control, CTRL, key is used with the Scroll Lock key to key a Break, with the backspace key to erase the preceding field, with the left arrow to move to the beginning of a text field, and with the right arrow to move to the end of a text field.

Function/Special Keys: The F1 key is used to obtain Help. The Esc key is used to backup one step in the command tree. The Home key moves the cursor to the beginning of the display and the End key moves the cursor to the end of it; if scrolling is necessary, it is performed. The space bar is used to cycle through the items of a selection list; the backspace key cycles through it in the opposite direction.

Command Language: None.

Positive Feedback: Should the user attempt to save a project which already exists, the choice of converting the existing copy to a backup version or overwriting it is given. In general, destructive commands are not performed without confirmation.

Status Display: Each of the major functions is supported by a different screen; however, in general, the title of the window appears as the top line of the screen, and the menu selection list or user directions appear on the bottom line(s).

Help Facilities: The Help facility is invoked by pressing the F1 function key or by selecting the Help option from a menu. When assistance is requested, the bottom portion of the screen is used to display instructions. The Help function remains in effect until turned off.

☐ Environment

The Harvard Project Manager does not require any special machine configurations. It will function on a basic system consisting of 192K bytes of RAM, 2 disk drives, one of a list of printers, and either the monochrome or the color monitor. The supported printers are: IBM graphics, Epson with graphics, C. Itoh ProWriter with either 8.5- or 14-inch paper, NEC PC-8023, and the Okidata Microline 84 Step 2, 92, or 93. (Release 1.1 supports additional wide-carriage printers such as the IDS Prism, the Okidata Microline 93, and the Anadex WP-6000 according to Harvard Software, Inc.)

Special instructions are provided for installation on the Compaq, Hyperion, and Eagle PC-compatible systems. These primarily indicate the different keystrokes which are required on the particular machines.

We tested using an IBM PC with 192K bytes of RAM, 2 double-sided disk drives, a color/graphics monitor, and an Okidata Microline 92 printer. We also tested using an IBM XT with 512K bytes of RAM, a color/graphics monitor, and an Epson printer. The only hitch which we

Harvard Software Project Manager
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uncovered from an operational viewpoint was that the product wanted to use the "A" drive while installed on the IBM XT. This was easily satisfied by using the DOS ASSIGN command to equate the "A" drive with the "C" drive and leaving the Harvard Project Manager diskette in Drive A. (Once the program loads and begins running, the diskette can be removed.)

Our technical specialist said the restriction on having the distribution diskette loaded was a part of the copy protection scheme.

☐ Documentation

In keeping with their commitment to produce a User-Friendly product, Harvard Software, Inc has provided excellent documentation in an IBM-type slipcase binder with multicolored, high-quality printing. It is organized into 4 separate sections, each set off by tabs. The first section, Tutorial, presents a brief overview of the concepts behind the product, then leads the user through a step-by-step demonstration of the creation and maintenance of a project. The tutorial is supported by eight diskette files, named DEMO1 through DEMO7 and DEMODONE.

The second section, Reference, contains detailed instructions on the idiosyncracies of the product. The material within it is presented in a user-oriented manner. Instead of an alphabetic list of commands, areas of concern are presented. First, a discussion of the use of particular keys and their functions, then a presentation of such topics as Selecting Items and Forms and Editing is given before dwelling on each of the options of the major commands.

The third and fourth sections contain the appendixes and the index, respectively. Items of interest in the Appendixes include How Harvard Project Manager Analyzes Your Project, Configuring Your System, and Error Messages.

As an added bonus, Harvard Software, Inc provides a plastic-coated reference card on heavy stock which displays the major menu choices and a brief description of what each option does.

☐ Functionality

Our professional staff was quick to begin experimenting with this product. They had heard of some difficulties with Leap Year processing in other scheduling products, so they entered an Application Development Project beginning January 1984, the tasks and milestones of which spanned February 29th. No problems were encountered. They were able to add, change, and delete tasks and milestones without incident.

They did find, however, that the product did not consider the resource field as an entity in its own right and would, therefore, schedule multiple tasks for the same resource at the same time. In this case, individuals were assigned as resources. In order to insure that a particular individual was not over-scheduled, they were forced to either enter the task position within the roadmap in a serial rather than a parallel manner or supply sufficient slack time in the assignment of start and stop dates. They decided that entering the tasks one following the other would best

insure that a given resource was not abused.

Since the current year was chosen for this project, we found it necessary to change the calendar associated with the project. We found it easy to do once we got the hang of using the required keys; the Tab key is used to move between fields, and the cursor positioning keys are used to position within a multiple-field area, such as a date. The backspace key is used to remove data from within a field either one character at a time or, if used with the control key, to initialize the entire field. Similar conventions are used on all screens. We also found it necessary to update the particular holidays scheduled for the year. We were, however, unable to schedule floating holidays such as an employee anniversary day, but found that a minor inconvenience.

We found one way to confirm that a resource was not over-scheduled was to use the file command to create a DIF-type file for input into a spreadsheet program. We found that the program generated the appropriate format and experienced no difficulty in interfacing.

Once our professional staff understood the product, they turned it over to our general office staff. The only negative comment which the clerical staff had was that some of the information to be entered was already present in electronic form elsewhere and that it would be nicer if it did not have to be re-keyed. They did have favorable comments about the ease of use once they understood that the ENTER key was now the CONFIRM key, and so forth.

As it turns out, the actual number of tasks and milestones which were entered for our pilot project did not exceed the limits of the system. Appendix E, Limitations, describes the steps necessary to estimate the resources needed. We ended with 135 maintenance tasks and 47 for development which encompassed our projected schedule. In addition, none of the development projects exceeded the approximate limit.

☐ Ease of Use

One of the features which our clerical staff quickly came to appreciate was the menu structure and use. They found that it was extremely easy for them to update the tasks with "actuals" because of the scope of the facilities provided. First, within the Schedule window, the Locate command is used to select and display the chosen tasks, even if it was outside the bounds of the display window. Second, the edit command is used to display the "Node" (milestone or task) window into which the new or changed data is keyed.

Our professional staff was pleased by the ease of interfacing with their spreadsheet products. They were particularly happy to be able to select based on a resource which allowed them to project and catch potential over-scheduling problems. Because we were project oriented on new development work, we found that by using this product and its link to spreadsheets, our management was able to identify resource critical areas and take appropriate action.

We also found that the authors of this product had anticipated our need to have the project printed in both PERT and Gantt form. The sidewise printing feature allowed us to use the long axis of the paper for the charts;

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coupled with the continuous form feature, it meant that we could produce our entire project on a single piece of paper. (The most tasks which were occurring simultaneously was 15, which easily fit.)

□ **Support**

Harvard Software, Inc does maintain a technical staff which was very helpful in answering our questions.

We had heard that Release 1.1 was out. They confirmed this and indicated that it corrected some discrepancies in the schedule process and added several printer support modules, especially those that have the wide carriage such as the Epson MX100, the Okidata Microline 93, and the Anadex WP6000.

□ **System Interface**

One of the features of this product is the fact that DIF format files can be generated via the FILE command. This allows the data to be processed by any of the popular spreadsheet programs which support that format. The interface could almost be considered a requirement because of the fact that the product does not track resources such as personnel to insure that someone is not working 35 hours per day (several thought they were). Using the spreadsheet program to supplement the project scheduling task, we were able to confirm at least the total time. It does not prevent overlapped assignments where the total week is not over-scheduled, however.

□ **Vendor Experience**

Harvard Software, Inc released the Harvard Project Manager in November of 1983. It is their only product currently on the market.

■ **PRODUCT OVERVIEW**

□ **Terms & Support**

Terms • Harvard Project Manager is available from Harvard Software, Inc, software vendors, computer dealers, and mail-order firms throughout the U.S.; Harvard Software also has representatives in England and Europe; a 30-day return privilege is offered if the software is judged unsuitable for the purpose intended.

Support • telephone hot-line service provided by Harvard Software technical personnel.

□ **Component Summary**

Software elements consist of the following programs and overlays: HPM.EXE is the control program for the product; HPM.OVL is an

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LCNS: license fee.

overlay file containing processing routines; HPM.HLP provides support for the Help function; and HPMPRT.DAT is the printer driver file used by the product.

Printer specific modules, one of which is copied to HPMPRT.DAT for use as the system printer, follow: IBM.DAT, CITOH.DAT, CITOH14.DAT, NEC8023.DAT, OKIDATA.DAT, and OKI14.DAT.

Demonstration project files include: DEMO1.PRJ, DEMO2.PRJ, DEMO3.PRJ, DEMO4.PRJ, DEMO5.PRJ, DEMO6.PRJ, DEMO7.PRJ, and DEMODONE.PRJ.

Project Manager:

$395 lcns

□ **Computers/Operating Systems Supported**

The Harvard Project Manager runs on the IBM PC under DOS 1.1 or 2.0 and on the Compaq, Hyperion, and Eagle running MS-DOS.

□ **Minimum Operating Requirements**

A minimum of 128K bytes of RAM is required for systems running DOS 1.1 and 192K bytes of RAM for systems running DOS 2.0. In addition, 2 double-sided, double-density floppy disk drives or a hard disk, a monochrome display or color/graphics board, and an appropriate monitor are required. The following printers are supported: IBM, C. Itoh ProWriter, NEC PC-8023, or Okidata Microline 84, 92, and 93.

□ **Features**

Project Limits • a total of approximately 200 tasks and milestones are supported for each project; in addition to the length of the descriptions for each, 100 bytes are used by each task to hold data while milestones only require 50; maximum amount of memory used is 40,000 bytes.

Display Features • the product uses a primary menu display which contains 4 windows which show its 4 major aspects, Roadmap, Schedule, Calendar, and Function; choices from the menus presented may be selected by pressing the highlighted key of each command or by using the space bar and backspace key to highlight the entire word; a brief description of the highlighted function is displayed.

Command Structure • none; the product makes excellent use of menu facilities to support processing.

Error Recovery • specific instructions are provided in Appendix D, Error Messages, which provides specific recovery instructions for each error encountered; there is no automatic facility to "undo" a deletion of a task or milestone.

Mass Input • none.

Mass Output • Data Interface Format (DIF) files may be generated for all or selected milestones and tasks within a project for processing by other programs which accept that input.

Reports • PERT- and Gantt-type reports may be generated; Critical Path Method (CPM) is used to depict the line or lines of tasks which have no slack time allocated.

Print Features • sideways or normal, paging or continuous, forms or sheets are all choices for printing.

• END

Hayden Software PIE Writer
Word Processor Package

■ PROFILE

Function • a word processing and formatting package for letter and report production and general document development.

Computers/Operating Systems Supported • IBM PC or PC/XT using PC-DOS, other 8086/8088-based systems using MS-DOS; version also available for Apple II, II+, and IIe.

Configuration • MS-DOS version requires a minimum of 64K bytes of memory, one disk drive, and a monochrome or color display device; is able to reconfigure itself into a 128K-byte version if more memory is available; can optionally support a variety of printer types and communications interfaces if available; Apple version requires 48K bytes of memory.

Current Version/Version Reviewed • Hayden is currently shipping Version 2.2/reviewed Version 1.0 for the IBM PC.

First Delivery • January 1983 for the Apple version; 1983 for the IBM version.

Number of Installations • not available from vendor.

Comparable Products • EDIX and WORDIX from Emerging Technology, FinalWord from Mark of the Unicorn, WordStar from MicroPro.

Optional Associated Software • The Speller ($49.95), a document spelling checker, The Writer ($49.95), a trimmed-down version of PIE Writer.

Price • $200 retail price.

Vendor • Hayden Software Company; 600 Suffolk Street, Lowell, MA 01853 • 617-937-0200.

Canada • for British Columbia: Cybertech Trading Corporation; #9 1172 Voyageur Way, Richmond, BC V6X 3E1; 604-278-4848 • for Alberta and Saskatchewan: Dasher Industries; 10309 104th, Edmundton, AB T5S 1H1; 403-484-5577 • for Ontario: Umbrella Software, Inc; 60 Bullock Drive, Unit 5, Markham, ON L3P 3P2; 416-471-4311 • for Quebec: Future Electronics Inc; 237 Hymus Boulevard, Pt. Claire, PQ H9R 5C7; 514-694-7710.

■ ANALYSIS

PIE Writer is a word processor and text formatter combination built along the theory that "what you see is what you get" isn't good enough. The "what you see is what you get" (WYSIWYG) school of thought, currently epitomized by Microsoft's WORD, believes that trying to display a document on the screen exactly as it will appear on the printer provides a better user interface, making it easier to create and format documents the way you wish them to look. The separate formatter school, like PIE Writer, WORDIX, and Final Word, believe that you

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT								8.0		
DOCUMENTATION					5.0					
FUNCTIONALITY						6.2				
EASE OF USE				4.0						
SUPPORT				4.8						
SYSTEM INTERFACE				4.8						
VENDOR EXPERIENCE				4.0						

*For an explanation of rating criteria, please refer to the Word Processor Features section in the Software Evaluations (805) report. The Overall Package Average is 5.2.

shouldn't be limited in your document formatting capabilities by what can be reasonably displayed on a video screen. Through the use of in-line formatting commands that you enter directly into your document text, separate formatters typically provide much more power and flexibility in document preparation than can be found on WYSIWYG word processors.

PIE Writer is a well-integrated example of the separate editor and formatter product. The editor is a sound implementation of a line-oriented editor that, while providing no revolutionary new concepts, should suffice for most editing needs. The formatter provides some features not found in all such products, like the ability to accept keyboard input for inclusion in the middle of a document. It falls somewhat short of the high-end capabilities that a formatter typically has in order to justify its use. The price of the product is in line with its capabilities, however, so it should serve as an affordable alternative for those wishing to try this type of word processing product.

□ Strengths

The PIE Writer formatting commands allow a fair amount of flexibility in the creation and printing of a document. The ability to prompt and accept input interactively during document formatting makes it easy to create fill-in-the-blank types of forms. Overall document characteristics such as inter-paragraph spacing, headers, or margins may be quickly changed by the modification of a few characters at the beginning of the document. The editor can handle large documents either through the use of single large files or by the chaining of many smaller ones.

An optional spelling checker is available for use with PIE Writer. The Speller is a well-integrated program that is enjoyable to use, a rare attribute for any package. It supports a wide variety of word processors, and provides many useful options, including the ability to make the

PURCHASE PRICE RANGE

Software Price Range

PIE Writer $200

$75 to $500

| $200 | $400 | $600 | $800 | $1,000 |

HAYDEN SOFTWARE PIE WRITER 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 **PIE WRITER**, the evaluated product, relative to the price range of similar products.

Hayden Software PIE Writer
Word Processor Package

actual corrections to your document and automatically update your own personal dictionary with new words.

□ **Limitations**

Discussions on editor and word processor philosophies tend to take on a religious fervor with most users. Many particular features or approaches are mainly a matter of personal preference; only you can decide whether a product has the right feel. Separate document formatters is one of the areas in which you must decide for yourself. PIE Writer is definitely not a "what you see is what you get" (WYSIWYG) editor. It makes no attempts whatsoever in this direction, so if you feel that you must have a WYSIWYG word processor, PIE Writer is not for you.

While the formatting commands in PIE Writer provide a wide variety of capabilities and flexibility, in general it lacks some of the most powerful features that one typically looks for in a separate formatter. Many formatters provide the ability to create your own new formatting commands through the use of "macros." Macros are essentially a collection of many of the formatter's own commands placed into one block in order to perform a single, special end result. Absolutely amazing things can be performed using the macro facilities that are available in WORDIX, for example. PIE Writer does not offer any form of macro capability, which is a disappointment.

Another more minor feature that is missing is the ability to perform changes in rendition, such as boldface and underlining, via in-line control characters. PIE Writer requires that both the rendition command and the text to be affected appear on separate lines. Though in-line control characters are sort of a concession to the WYSIWYG editor type, they make the overall text a little more readable on the screen, and are commonly found in other editor/formatter packages.

Several minor irritations were noticed during usage of the product. It produces "snow" on a graphics screen when doing particular operations. This is a typical oversight of many programs, which is an easy problem to avoid, but many programs simply do not take the effort to do so. The line and page scrolling operations are slower than on other editors; and the difficulties in installing the program on a hard disk were also nuisances.

■ **HANDS-ON EVALUATION**

PIE Writer is provided on one single-sided floppy disk, and contains a number of batch control files to aid in the installation process. The documentation only mentioned DOS 1.0 and DOS 1.1, so we installed a DOS 1.1 version of the program first, and encountered no problems. Desiring to know whether it could be installed on a hard disk under DOS 2.0, we copied the program to a separate subdirectory, and attempted installation. After various and sundry attempts resulting in some form of error or the other, we finally resorted to trying to run the DOS 1.1 version under DOS 2.0 control. We reconfigured the program for drive C while still executing from the floppy disk, then copied it to the hard disk once again. This time all went well, and no further problems using DOS 2.0 or the hard disk were encountered.

Much like a new car, the first thing users usually want to know is "How fast can this baby go?" The answer in this case was a little disappointing. The page scrolling operations are somewhat deliberate in their execution, and the program cannot keep up with the keyboard repeat rate when scrolling one line at a time. The keystroke buffer rapidly overflows, and the IBM PC produces its horrid "chortling" noise, indicating that keystrokes are being lost. In editing 2 files at the same time, the time to switch from one window to another was also slow, particularly when each file was given the full screen. The IBM Personal Editor can edit up to 20 files at the same time, and switch from one to the other instantaneously, so PIE Writer's performance in this area was not up to par.

The editor control-key commands were not particularly mnemonic. Combined with a very abbreviated Help screen and the lack of a reference card summarizing all commands, this produced a lot of reaching for the editor manual. The formatter commands are easily remembered, however. The only anomaly encountered during the usage of PIE Writer was in the editing of 2 files simultaneously. When each was given its own full-screen for display, the line numbers in the status line for one of the files was shown being off by about 65,000! The numbers displayed remained consistent with each other during movement through the file, and produced no real problems in the operation of the program.

□ **User Interface**

Like the program itself, the user interface to PIE Writer consists of 2 parts. Editing functions are performed via a combination of full-screen editing for text entry, and a one-line command line for executing global operations. The interface to the text formatter requires 2-character command codes to be embedded in the document text itself, for later execution by the formatter.

Menus: Selection menus are used by the program for the initial program configuration, and for the selection of the particular function desired (editor, formatter, or speller) whenever the program is executed.

Control characters: Most of the user interface is performed through the use of control keys in various combinations. All of the cursor positioning functions provided by the IBM PC keypad are also duplicated as control characters for use on systems without such a keypad. The majority of the editing functions are performed by first hitting ESC to signal the beginning of a command, entering the arguments that will govern the operation of the command, then hitting a control character to invoke the particular function desired. Most of the control character commands are not particularly mnemonic; CTRL-K deletes a line, CTRL-O reads from another file, and CTRL-L writes to another file, for example. The manual index lists 28 separate control commands, and 80 separate ESC command sequences.

Function/special keys: Some of the commonly occurring editor and formatter commands are also available on the Function key keypad. The first 6 cause some of the most common formatter commands to be entered into the text at the current cursor position. If the cursor is not currently at the beginning of the line, the command will not be entered

Hayden Software PIE Writer
Word Processor Package

properly. The other function keys are to perform editor operations otherwise available on control keys. The program makes good use of the IBM PC cursor control keypad, including the PGUP (page up), PGDN (page down), HOME, END, INS, and DEL keys. Two ALT key combinations are also available for retrieving the current file name, and the current date.

Command language: The formatter is driven by commands that appear on a line by themselves, preceded by a dot. The commands themselves are 2-letter semi-mnemonic abbreviations for the functions desired, optionally followed by numeric or string parameters that further specify the intended operation. The manual index lists 40 separate formatter dot commands.

Positive feedback: The program displays a short message in the lower left-hand corner, such as *** LOAD *** or *** BUSY *** whenever a small delay will occur. When multiple windows are in use, it draws a box around the currently active window. No confirmation is requested for large deletions or for exiting the program. Instead, deletions are always performed to a storage area, allowing them to be retrieved in case of an error, and the command to exit the program requires a leading percent sign, %, making it difficult to exit by accident.

Status display: A one-line status display appears at the bottom of the screen, containing the file name, line, and column number for the current file. Other information is displayed there as necessary, including indicators showing whether the NUM LOCK key and the CAPS LOCK key have been depressed, a useful capability since the IBM keyboard will not give you this information. A ruler is also displayed at the top of the screen, and displays the current tab and margin settings.

Help facilities: A one-screen help display is available during editing. This is not really enough to display all of the possible commands and key combinations, let alone any good descriptions. It is more of a small electronic reference card to jog your memory than a real Help facility.

□ Environment

PIE Writer is flexible in the amount of memory required by the program. It can operate in a 64K-byte environment, but has the ability to reconfigure itself for more efficient operation if 128K bytes or more is available. The 128K-byte figure is necessary if The Speller is merged into the program. Upon initial usage of the program, it examines the machine on which it is executing, sets the default memory size and terminal type correspondingly, then prompts for confirmation that this is the configuration desired.

PIE Writer also provides support for a wide variety of popular printers, including Epson, Diablo, Qume, and NEC Spinwriter models. If your printer is not in the supported list, you may still provide enough information to the configuration program to allow it to operate and take advantage of some of your printer's special capabilities.

The program does not make use of color on the graphics monitor if available, and in fact leaves the color disabled upon exit. Instructions for installation on a hard disk are not provided, although the installation is possible.

□ Documentation

The PIE Writer documentation consists of a single 8x6 manual divided into several major sections with tabbed separators. It consists first of a tutorial for the PIE Editor, followed by a separate tutorial for the Formatter. The Configure section describes how the system defaults may be changed to suit the style of the user. The Reference section is the largest, containing a detailed, functionally organized summary of all Editor commands, followed by all Formatter operations. The Reference section is fairly compressed and brief, particularly the editor portion.

Few screen examples of the Editor's usage are included, though numerous text excerpts are used in the demonstration of the Formatter's capabilities. The manual contains a 3-page index by topic, and a 2-page index by command, but no reference card or keyboard templates are provided. A 4-page errata sheet contained corrections for several errors in the manual, and stated that the reference card was not available at the time of shipment, but would be provided upon receipt of the warranty card. The documentation contained no support policy information, nor a summary of possible error messages and explanations.

□ Functionality

After PIE Writer has configured itself for your particular system, execution of the program will bring up a selection menu offering you the choice of invoking the editor or the formatter, re-configuring the program defaults for either, or leaving PIE Writer. If you have purchased The Speller and merged it into the PIE Writer system, it will also appear on this menu. The configuration options allow you to change certain features of the program's behavior. On the editor configuration menu, you may change the column in which the bell sounds, the initial tab increment, and whether the automatic word-wrap feature should default to on or off. The formatter configuration menu allows you to specify your particular printer interface characteristics; the default definition of the page layout, such as line and page length, spacing, and margins; and the default paragraph adjustment parameters, including paragraph indentation, fill mode, spacing between paragraphs, and whether to right justify the text. All of these options are set-up with reasonable values at the start. The only one you may initially have to worry about is the specification of which printer you are using. All of the default values may be overridden within a document itself, through the use of explicit commands.

The PIE editor is a line-oriented full-screen editor with a wide variety of command options. It provides for automatic word-wrap at the end of a line, and the ability to tab across a line one word at a time, both of which can be selectively enabled or disabled. There are line and block copying and movement operations, either into a small memory buffer, or through the use of side files for larger blocks of text.

You signal the beginning of an editor command by hitting the ESC (escape) key. The cursor jumps to the bottom of the screen, where you are prompted for "Args," or arguments to be given to the command. Arguments

Hayden Software PIE Writer
Word Processor Package

typically consist of either a number, indicating the number of lines on which to perform the command, or a sequence of characters denoting a file name or a search string. After the arguments have been supplied, then a control key is pressed to indicate the exact command desired. To copy 10 lines into a memory buffer beginning at the cursor, you would hit ESC 10 CTRL-L. Some of the common commands are also available for use with the function keys, in addition to their control key position, such as the Delete Line operation (using F7 and CTRL-K) and Delete Word (using F9 or CTRL-B).

The formatter is implemented through the use of "dot" commands embedded in the document text. This is what prevents a PIE Writer document from looking the same on the screen as it will on the printer. You must learn what to expect from each of the formatter commands, so that you may look at a document on the screen and be confident in predicting that it will look the way you desire when printed. If there is any doubt in your mind, you may always format the document to the screen for a cursory inspection just prior to printing it.

There are 40 different formatter commands in 8 general categories that govern the printing of a document. Each command consists of a 2-character semi-mnemonic command code optionally followed by numeric or string parameters. The paragraph commands define the beginning of a paragraph, the inter- and intra-paragraph spacing, and the indentation of the first line of text. The layout commands control automatic line wrapping, text justification, vertical spacing, and page control. Indentation commands govern permanent and temporary indentations, and document line length, while the title and margin commands specify headers, footers, and top and bottom page margins. Miscellaneous commands allow text to be centered, boldfaced, underlined, or capitalized. No support is provided for subscripts or superscripts.

The remaining command groups provide much of the real power in PIE Writer. The file chaining and form letter commands allow large documents to be processed as a series of smaller, more manageable files. Block handling commands in this group make possible the creation of form letters, with names and addresses pulled from one file and combined with letter text from another. The interactive input and control commands further enhance this capability. By allowing a file to prompt the user for input and accept information typed on the keyboard, you may easily build fill-in-the-blank types of forms that guide the user through to their completion. The last command group provides for character translation and definition. These allow the definition of special characters that indicate non-printing comments, printer control code sequences, and literal text lines that are to be printed as is.

☐ Ease of Use

The positive side of PIE Writer's ease of use includes the fact that it is easy to install on a DOS 1.0 or 1.1 system, and is generally self-configuring for your particular system. Only a few of the formatter commands must be learned before actual documents can be produced, and the abbreviations are fairly mnemonic, making them easy to

remember. The program makes good use of the IBM PC function and cursor control keypads. It can handle large documents, either as single files or by chaining several smaller ones together.

On the negative side, the editor itself is slow in moving through a document. The program cannot keep up with the keyboard repeat key when scrolling through a document one line at a time. The time needed to switch between 2 files being edited simultaneously, when each was assigned a full screen for display, was particularly lengthy. The editor also produces "snow" on a graphics screen, an unnecessary and eye-straining distraction. The editing commands are not very mnemonic, and with an abbreviated help screen and no reference card, much reaching for the manual must occur before you become comfortable.

Some ease-of-use features missing from PIE Writer include an UNDO function that removes the effect of accidental editing changes, the ability to spool a listing to be printed in the background while other functions are performed, and a 2-step delete operation (though deletions are done to a buffer area, and may be recalled).

☐ Support

No support information was found in the documentation of the version we reviewed. Two phone calls, 5 transfers, and discussions with 3 different departments were necessary before we were put in contact with the product manager. Several conflicting stories on Hayden's support policies were gathered along the way. It seems a shame that more of the people with whom callers are likely to be connected are not aware of the company's own support policies, or that callers are not immediately routed to those that do know.

The last department reached proved very helpful in defining the corporate support system. A designated support group is available Monday through Friday, from 9:00 AM to 7:00 PM EST, at the toll-free number 800-343-1218. They have an upgrade policy by which registered purchasers may acquire new releases at a reduced price, though they do not necessarily notify all users of new versions.

☐ System Interface

PIE Writer uses standard DOS text files as its document storage format. No information is provided in the documentation on how to convert other file formats, particularly other word processor files, for use by PIE Writer. Some word processors also use DOS files, while others provide the capability to either copy a file to a DOS format file or at least print a file to disk. This should provide an adequate means for transferral of the file text, but any special formatting information will have to be re-entered in PIE Writer's own style.

PIE Writer also provides a primitive method of interface to the communications facilities of your system. Examples are given in the manual on how a file could be transmitted from one system to another over the COM ports if both systems were using PIE Writer.

Hayden Software PIE Writer
Word Processor Package

☐ Vendor Experience

Hayden Software Company has been in existence for approximately a year and a half, though its parent company, Hayden Publishing, has been around a lot longer. PIE Writer was first released for the Apple systems in January, 1983, with the IBM PC version following in April. The Speller was first shipped in November of 1983. The number of installations of these products was not available from Hayden Software.

■ DETAILED PRODUCT DESCRIPTION

☐ Terms & Support

Terms ● PIE Writer is available for purchase only from Hayden Software Company, through computer dealers, software dealers and mail-order firms throughout the U.S. and internationally; quantity discounts are available to volume corporate purchasers.

Support ● a designated support group is available Monday through Friday, 9:00 AM to 7:00 PM EST, at the toll-free number 800-343-1218; a reduced-price upgrade policy for registered purchasers is provided.

☐ Component Summary

PIE Writer is provided on one single-sided floppy disk. It contains the following files:

AUTOEXEC.BAT is a control file for automatic execution of PW, PW.COM is the main driver that executes the other programs, and FMT.OVR is the text formatter program overlay. PIECONFG.OVR is a program that allows changing of the editor defaults and FMTCONFG.OVR is the program that allows changing of the format defaults. HELP provides the Help text. PW64 and PW128 are, respectively, the 64K and 128K versions of the editor program. PIE64 and PIE128 are, respectively, the 64K and 128K versions of PIE system. COPYDOS1.BAT is a control file to make a backup on single-drive system and COPYDOS2.BAT is a control file to make a backup on double-drive system. LESSON is the text file containing the tutorial lesson text:

$200 lcns

☐ Computers & Operating Systems Supported

PIE Writer is available for the IBM Personal Computer or PC/XT using PC-DOS, and other 8086/8088-based systems using MS-DOS. A separate version is also available for Apple II, II+, and IIe.

LCNS: license fee.

☐ Minimum Operating Requirements

The IBM PC version of PIE Writer requires a minimum of 64K bytes of memory, one disk drive, and a monochrome or color display device. The program is able to reconfigure itself into a 128K-byte version if more memory is available. It can optionally support a variety of printer types and communications interfaces if available. The Apple version requires 48K bytes of memory.

☐ Features

PIE Writer is a word processing package for the production of complex formatted documents. It combines a line-oriented editor and a command-driven document formatter into a single package as a means of more easily providing complex formatting capabilities than the "what you see is what you get" type of word processor. The program's capabilities include:

Full-Screen Editing ● all common full-screen editing capabilities are included in PIE Writer, including full cursor movement, fast positioning via word tabs, page up, and page down, HOME and END keys, and position to top or bottom of document.

Large Document Handling ● large documents can be created and managed either through the use of NEXT and PREVIOUS BUFFER commands that allow paging through a large document in blocks, or by linking and combining many smaller files either manually or automatically by commands to the formatter.

Block-Mode Operations ● blocks of text may be manipulated by copying or deletion into a one-screen save buffer for small, rapid, text alterations, or through the use of side files for larger, more complex operations.

Complex Document Formatting Capabilities ● a built-in command-driven text formatter provides a powerful and flexible means of specifying document layout and formatting operations; formatter commands are entered into the source text at the desired locations, and are operated on and removed by the formatter before printing the document.

Multiple Window Facilities ● two different files may be edited simultaneously using the window facilities; the screen may be split horizontally in any proportion you desire, including the ability to alternately give each file the entire screen.

☐ Other Facilities

Through the use of side files, PIE Writer supports the ability to communicate via the asynchronous communications port. The manual contains an example of how a file can be transferred from one system to another if both systems are running PIE Writer. The capability is fairly primitive, and the example uses a Hayes Smartmodem to handle some of the complex operations involved.

● END

Hayes Microcomputer Products Smartcom II
Communications Package

■ PROFILE

Function ● general-purpose communications program for managing remote communications in conjunction with the Hayes Smartmodem series.

Computers/Operating Systems Supported ● IBM PC or PC/XT using PC-DOS; separate versions are available for other popular microcomputer systems.

Configuration ● requires a minimum of 96K bytes of memory, one disk drive, an 80-column monochrome or color display device, a Hayes Smartmodem 300 or Smartmodem 1200 (either freestanding or on-board), and an asynchronous communications adapter card and RS-232 cable if a freestanding modem is used; can optionally support a printer over a parallel or serial port, and will use up to 192K bytes of RAM, if available.

Current Version/Version Reviewed ● Versions 1.1H and 1.1E/Version 1.0 for the IBM PC.

First Delivery ● March 1983.

Number of Installations ● information not available.

Comparable Products ● Microstuf CrossTalk XVI, Freeware PC-Talk III, IBM Asynchronous Communications Support.

Optional Associated Software ● none.

Price ● $119 retail price.

Vendor ● Hayes Microcomputer Products, Inc; 5923 Peachtree Industrial Boulevard, Norcross, GA 30092 ● 404-449-8791.

Canada ● Compuserve; 150 Consumers Road, Suite 505, Willowdale, ON M2S 1P9 ● 416-494-1100 ● MICRON Distributing; 409 Queen Street West, Toronto, ON M5V 2A5 ● 416-593-9862.

■ ANALYSIS

Smartcom II is a program for managing remote communications for selected microcomputers using the Hayes Smartmodem series. It is a completely menu-driven system that provides terminal emulation capabilities, data capture and file transfer functions, and the ability to perform unattended remote system operations by taking advantage of the Smartmodem's auto-dial/auto-answer capabilities. It allows the creation and use of pre-defined communication setup files, and provides the ability to define common sequences of keystrokes and commands as macros that can later be invoked by a simple operation.

Smartcom II is an excellent communications program that is extremely easy to operate. Its most powerful features are

PRODUCT QUALITY RATINGS*

	1	2	3	4	5	6	7	8	9	10
ENVIRONMENT						6.0				
DOCUMENTATION									9.0	
FUNCTIONALITY							7.2			
EASE OF USE									9.0	
SUPPORT					5.0					
SYSTEM INTERFACE					5.0					
VENDOR EXPERIENCE						6.0				

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

dedicated to simplifying the user interface as much as possible. Its only drawback is its inability to deal properly with a graphics monitor without producing vast amounts of interference. For monochrome monitor users and graphics users who can tolerate the interference, Smartcom II comes highly recommended for solving your communication needs.

□ Strengths

The strength of Smartcom II is in its ease of use. The program comes with a number of communication setup files already configured for many of the popular information networks. The macro capability that allows common keystroke and command sequences to be saved and recalled is very powerful and flexible. In addition, complete sets of macro definitions are provided for accessing the 4 major networks, CompuServe, Dow Jones News/Retrieval, KNOWLEDGE INDEX, and THE SOURCE.

The menu system used by Smartcom II is very easy to understand and use. It provides complete prompts for option selection, and has a detailed help facility that always provides information specific to your current position in the program.

□ Limitations

The major limitation of Smartcom II does not involve its capabilities per se. It provides a wide range of functionality and a good user interface that is difficult to criticize. But on an IBM PC with a graphics monitor, these capabilities are painful to use due to the "snow" that the program generates on the display. When text is being written to the screen, more distracting interference is produced by this product than any other we have seen. The manual goes so far as to claim that while it can be used, the graphics adapter, "designed for displaying graphics rather than text, is not recommended for use with

PURCHASE PRICE RANGE

Software Price Range ▢

Smartcom II $119

▢ $35 to $300

$100		$200		$300		$400	$500

HAYES MICROCOMPUTER PRODUCTS SMARTCOM II ● open bar shows the typical range of price for COMMUNICATIONS software used in a corporate environment ● the vertical line within the bar graph indicates the price of Smartcom II, the evaluated product, relative to the price range of similar products.

Hayes Microcomputer Products Smartcom II
Communications Package

Smartcom II." This unprofessional passing of the blame lowers our overall perspective about an otherwise very professional product. It is purely the fault of the program and not of the hardware that interference is produced. Snow is produced by the program and the display card both accessing the display memory simultaneously. There are dozens of word processors for the IBM PC that do nothing but text, and produce no snow whatsoever. Even graphics programs must follow the rules. All that is necessary is that the program pay attention to the horizontal and vertical sync signals during the display of text. While this is not necessary on a monochrome display, there is no excuse for failing to take this into account on a graphics system, and even less for blaming it on the hardware.

■ HANDS-ON EVALUATION

Smartcom II is provided on one single-sided floppy disk containing 5 separate files. The documentation states that it is supported under DOS 1.0 or 1.1, but we found that it worked equally well under DOS 2.0. The program disk may be backed up or installed to hard disk using normal copying procedures. The software comes completely installed and ready to go for the IBM PC, but there are installation instructions for the proper switch settings for the Hayes Smartmodem. There is a configuration screen that can be used to change some of the default assumptions concerning your system, such as the use of pulse dialing for originating a call, and whether you have a serial or parallel printer.

We ran the program as a terminal emulator to a couple of local large minicomputer systems first. Users universally complained about the interference the program generates on a graphics screen. With one particular connection, all characters typed at the terminal were doubly echoed on the screen, whereas those typed by the minicomputer were fine. A quick check in the troubleshooting section of the manual told us that the other system was running full-duplex, but that we had specified half-duplex in the communication set. We knew that the latter was true, as this was the information we were given. A quick change as instructed solved the problem and we were able to proceed.

We next prepared to hook into THE SOURCE. The automatic logon macros must be completed with your proper account number, logon ID and password information before you may proceed. In completing this information, we discovered a one-space discrepancy in the logon procedure we were given by THE SOURCE and the portion of the logon macro provided by Hayes. When we encountered a problem logging onto the system, we corrected this and one other mistake of our own, and everything worked fine, but we did not determine if the space alone was indeed significant. Forty-five dollars worth of charges later, our resident SOURCE game player reported all was well.

Finally, we tried a PC-to-PC link with both programs running Smartcom II. Both normal and Remote Access communications functioned as expected. When sending files under Remote Access control, the program knows that both systems are running Smartcom II, and will use the Verification protocol automatically. This slows down the file sending somewhat, but it insures that the data are sent correctly.

☐ User Interface

Smartcom II is a completely menu-driven program. It provides a very clean user interface, with all options clearly marked and defaults highlighted. When a particular field may only contain a limited number of possibilities, the program allows you to use the arrow keys to move through the list of possibilities. You simply leave the one desired showing in the field. Help is available at all times, and the information displayed is always specific to the current situation.

Menus: There are 4 major menus used with Smartcom II. The Main menu provides access to all other functions. The lower half of the Main menu is used as a display area for many of the available operations, allowing the Main menu to be visible the majority of the time. The Parameters screen allows the definition of a particular communication set. The Macros screen allows you to create pre-defined character sequences that can be sent later with a 2-keystroke sequence. The Configuration screen is used to define your particular system equipment.

Control characters: To allow the IBM PC to emulate a standard terminal, several control characters are recognized by Smartcom II as cursor movement functions. Otherwise, control characters are not used by Smartcom II itself, though they may be sent to the host system during online communication.

Function/special keys: The program makes good use of the IBM PC cursor control keypad and function keys. In addition to the normal cursor movement functions during online communication, the left and right arrows are used during parameter selection to move through the list of possible responses. The function keys are used mainly during online communication as special signals to Smartcom II, to allow you to return to the main menu, turn the printer on and off, start or stop the saving of information to disk or to invoke a macro. The F2 key serves as the Help key.

Command language: Smartcom II does not contain a specific command language.

Positive feedback: Currently selected options are always highlighted on the screen, and the program always defaults to the option selected the last time an operation was performed. In the Main menu, all option selections that are not valid in the program's current state have their selection numbers replaced with an asterisk. The program also maintains status information describing the activity in process at all times. During any time-consuming process, such as dialing or file transfer, information is shown indicating the current state of affairs. Block counts and retry information is shown during file transfer operations, for example. Confirmation is always requested for destructive operations, including exit of the program.

Status display: The last 3 lines of the display screen contain status information. The first status line contains the file, printer, and Smartmodem status information. The

Hayes Microcomputer Products Smartcom II
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second status line is used to show error messages and to display important function key assignments during online communication. The last line of the display contains the date and time, and the current shift status of the NUM LOCK and CAPS LOCK keys.

Help facilities: Two types of Help screens are available in Smartcom II. If you are currently operating either on the Macro Definition screen, the Parameters screen or the Configuration screen, where detailed information governing the usage of the program must be entered, a full screen of Help information is available for each blank that must be completed. Each Help screen is a detailed explanation of the purpose of the particular field in question, along with some suggestions as to what the appropriate values may be. If you are currently executing from the Main Menu screen, then a half-screen (usually only one paragraph) Help message is available for each option possibility. The Help key is F2, and is always active.

☐ Environment

Smartcom II is more limiting than most other communications programs only in the sense that it must be used with a Hayes Smartmodem. It will function with all of the Smartmodem products, however, both 300 and 1200 bps systems, freestanding or on internal add-on boards. Its 96K-byte memory requirement is slightly higher than some communication products, but still well within the range of what a typical business system will probably have. It allows control over all of the possible communication parameters, allowing it to communicate with practically any other system.

☐ Documentation

The Smartcom II manual is an excellent piece of documentation, marred only by its lack of an index. It is printed on the traditional PC-sized 8 by 6 inch paper, and consists of 10 sections separated by plastic tabbed dividers. It is functionally organized, containing separate chapters on Installation, A Communications Primer, and Getting Started, all the way through detailed sections on File Transfer, Communications with Other Microcomputers, and Common Problems and Trouble-shooting. The manual is filled with numerous full-screen displays, diagrams, examples, and checklists.

The Getting Started chapter contains detailed information on 4 popular information networks: CompuServe, Dow Jones News/Retrieval Service, KNOWLEDGE INDEX, and THE SOURCE. For each service, the manual describes the services offered, and provides operating hours, user assistance telephone numbers, and procedures for opening an account. Smartcom II also has predefined communication sets for each of these services defined on the program disk, in addition to 26 pre-defined macros for use with each service. All that you must do is acquire an account, determine the appropriate telephone number in your area, and follow the example call procedures given for each service.

☐ Functionality

Smartcomm II uses the particular features of the Hayes Smartmodems to provide auto-answer and auto-dial communication facilities. It may be used to emulate a dumb terminal for communication with other computers running different software. If used to communicate with another computer running Smartcom II, a number of other capabilities are allowed, including file transfer and remote access functions.

The particular communication parameters associated with access to a given computer system may be stored in a communication set, each identified by a letter of the alphabet in the Set Directory. Up to 25 different communication sets may be defined, with the 26th reserved for Standard Values. Each set contains information on the bps rate, line delay, half- or full-duplex mode, start and stop characters, and other characteristics of the particular system being described, in addition to the actual telephone number to be used in originating the call, and the password required, if any, in accessing other Smartcom II systems. The program is provided with a number of the communication sets describing common information networks and bulletin-board services available in the US. These may be used directly by providing the appropriate telephone number for your area, or used as examples for the creation of your own sets.

With each communication set, a set of 26 macros may be defined. A macro is a pre-defined set of commonly-used keystrokes or commands used to perform a frequently needed function. The 26th macro is always used to define the necessary logon sequence required by the host system, and is sent automatically on establishment of a connection. These macros may be used to simplify the user-interface to a given system. For each of the 4 major information network communication sets provided with Smartcom II a complete set of macros has been defined for the most common operations. Again, these may be used as is, or as models for your own needs.

Sometimes operations between 2 communicating systems can be performed more easily if one person can control both ends of the process. Smartcom II provides this capability through its Remote Access facility. Remote access allows a limited set of operations to be performed directly by the originator, and executed on the called system. The operations allowed include viewing the disk directory and sending, receiving, renaming, and erasing disk files. Other operations on the remote system are not authorized. Remote access may be initiated by mutual agreement if both systems are attended and enter remote access mode. Unattended remote access it also possible if the target system is left in auto-answer mode, with the Remote Access parameter of its communication set enabled. Without the Remote Access parameter set, control by another system is denied. If remote access is permitted, further security may be maintained through the use of a password that must be provided by the caller, restricting access to authorized callers only.

Aside from terminal emulation, the other common use of a communications program is the electronic transfer of files from one system to another. Smartcom II allows the transfer of text and object files both to and from your system. Text files may be transferred between any 2 systems using either the common Start/Stop protocol or the Send Lines protocol. The Start/Stop method is usually the quicker means of sending information, but neither

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Hayes Microcomputer Products Smartcom II
Communications Package

method is suitable for the transfer of binary information and neither provides for error detection. With the Verification protocol, any file type may be transferred with the assurance that it will arrive correctly. Unfortunately, this may only occur between systems understanding the Verification protocol used by Hayes. Files may also be created by capturing all incoming text that occurs during a session and saving it into a disk file. This is useful for creating a log of a particular session or for receiving small text files from systems not supporting a general file-transfer facility.

☐ Ease of Use

Smartcom II's menu system is easy to understand and to use. It uses full-word prompts, and Help information is always available. The Help text is always specific to the need at hand and provides sufficient detail. The program makes good use of the function keys and cursor control keypad on the IBM PC. It supports the ability to temporarily escape from online communications and perform local operations, then return online without breaking the connection.

The communication sets and macro capability make Smartcom II simpler still. Even complicated communication needs may be defined once by trained personnel, and a simplified interface provided for all future users. The pre-defined communication sets and macro sets provided with the program eliminate most of work involved in accessing many of the popular information networks.

☐ Support

The Smartcom II manual emphasizes that every attempt has been made to make it the primary source of information for the product. If this proves insufficient, however, registered users may contact the Hayes Customer Service personnel from 8:00 AM to 8:00 PM EST Monday through Friday at 404-441-1617. No toll-free number is available. Free diskette replacement is provided if the first one proves defective within the first 90 days. After 90 days, but within 2 years of the purchase date, replacement disks may be purchased for a $20 fee. The fine print of the contract states that the defect must not be the result of accident or abuse, making it somewhat difficult to determine what circumstances qualify.

☐ System Interface

Smartcom II supports asynchronous communications, allowing it to be used with a wide variety of systems. Since the Hayes Smartmodems that it requires only support up to 1200-bps communications, the modem is the major limiting factor here.

☐ Vendor Experience

Hayes Microcomputer Products has been a leader in the area of communications hardware with its Smartmodem series for some time now. Its entry into the software marketplace with Smartcom II is a continuation of support for this same area of expertise. Smartcom II was introduced in 1983, and is a very professional-looking

product that complements its hardware line very well. The documentation for Smartcom II is on a par with that of its Smartmodems, an area in which Hayes has never cut corners.

■ DETAILED PRODUCT DESCRIPTION

☐ Terms & Support

Terms ● Smartcom II is available for purchase only from Hayes Microcomputer Products, Inc, through computer dealers, software dealers and mail-order firms throughout the US and internationally; quantity discounts are available to volume corporate purchasers.

Support ● registered users may contact the Hayes Customer Service personnel from 8:00 AM to 8:00 PM EST Monday through Friday at 404-441-1617; defective disks will be replaced free within the first 90 days, and for $20 within the first 2 years.

☐ Component Summary

Smartcom II is provided on one single-sided floppy disk, containing the following files: SCOM.COM—the main executable program file, SCOM.CMD—a secondary executable program file, SCOM.OVR—a secondary executable program file, SCOM.DAT—a data file of saved comm setups and macros, and SCOM.HLP—the Help text file:

$119 lcns

☐ Computers & Operating Systems Supported

Smartcom II runs on an IBM Personal Computer or PC/XT, using PC-DOS. Separate versions are available for other popular microcomputers.

☐ Minimum Operating Requirements

Smartcom II requires a minimum of 96K bytes of memory, one disk drive, an 80-column monochrome or color display device, a Hayes Smartmodem 300 or Smartmodem 1200 (either freestanding or on-board), and an asynchronous communications adapter card and RS-232 cable if a freestanding modem is used. It can optionally support a printer over either a parallel or serial port, and will use up to 192K bytes of RAM if available.

☐ Features

Smartcom II is a general-purpose communications package for managing remote communications for selected microcomputers using the Hayes Smartmodem series.

Call Origination or Answering ● by using the auto-dial/auto-answer capabilities of the Hayes Smartmodems, system may originate or answer remote communication calls.

File Transfer Capabilities ● text and binary files may be transferred between systems using Start/Stop or Verification protocols; files may also be created from the ongoing communications via the data capture facilities.

Remote Access ● the ability to control a remote microcomputer also running Smartcom II can be accomplished either via cooperating attendants or by the granting of permission for unattended remote access by another system; password protection prevents undesired system access.

Communication Setup Files ● all parameters necessary for the specification of a remote system may be stored onto disk and recalled; parameters include telephone number, passwords, and automatic logon specifications.

Macros Facilities ● each setup file may contain up to 25 macro key definitions that allow common sequences of keystrokes or remote system commands to be sent by a simple, 2-keystroke operation; the 26th macro always contains the automatic logon procedure.

Directory Maintenance Capabilities ● file and directory maintenance may be performed without exiting the program; includes a limited set of operations that can be performed on remote systems under remote access control.

LCNS: license fee.

● END

Headlands Press, Inc PC-TALK III
Communications Support Program

■ PROFILE

Function ● provide basic terminal emulation and file transfer capability for the attachment of personal computers to other personal systems, information or timesharing services, or computer data centers.

Computers/Operating Systems Supported ● IBM PC or PC/XT; PC-compatible operation is discussed in the documentation.

Configuration ● IBM PC or PC/XT with 64K bytes of RAM and 1 disk drive; operation with dual drives on a 128K-byte RAM system is recommended.

Current Version/Version Reviewed ● PC-TALK III/not specified.

First Delivery ● January 1981.

Number of Installations ● information not available.

Comparable Products ● Microstuf CROSSTALK.

Optional Associated Software ● none available or required.

Price ● $35 retail price.

Vendor ● The Headlands Press, Inc; P.O. Box 862, Tiburon, CA 94920 ● 415-435-9775.

■ ANALYSIS

PC-TALK III is an interesting product, both in terms of its features and in terms of the unique distribution concept of FREEWARE. Rather than buying a product and evaluating it for eventual application, FREEWARE products may be legitimately copied from other users for trial. The user is ASKED to pay a modest $35 charge if the program is satisfactory.

Most of the features of PC-TALK are those of traditional, basic teletype emulation programs. It will operate with modems or directly connected to another computer system, and will support file transfer in either direction. If the computers connected are both running PC-TALK, an error-correcting protocol may be used to guarantee data integrity. But PC-TALK also supports 2 interesting extensions of basic communication; a directory of called numbers WITH THEIR ASSOCIATED COMMUNICATION PARAMETERS and the ability to program function keys to generate strings of characters at a single keystroke.

Terminal emulation features of PC-TALK are limited to basic teletype devices, so specialized applications which rely on custom CRT features such as cursor positioning will

PURCHASE PRICE RANGE

Software Price Range ▭

PC-TALK III $35

$35 to $300

$100 $200 $300 $400 $500
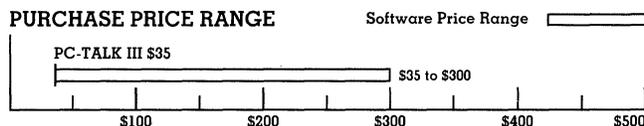
HEADLANDS PRESS, INC PC-TALK III PRICING ● open bar shows the typical range of prices for **COMMUNICATIONS SUPPORT** software used in a corporate environment ● the vertical line within the bar graph indicates the price of **PC-TALK III**, the evaluated product, relative to the price range of similar 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.

not be supported with the program. Most data center systems, however, have utility programs which will operate with PC-TALK to exchange data in text form. Binary data exchange may require special programming support.

If offered at a higher price and bundled with a form of dealer or vendor support, PC-TALK would represent a viable corporate communication package. Without a supporting agent behind it, it must be regarded as useful only to businesses with local technical expertise sufficient to support it locally.

☐ Strengths

The dialing directory of PC-TALK is by far the most impressive concept of the package. By permitting users to define a list of communication partners by phone number and including all communication parameters, PC-TALK takes much of the risk of mismatched communication out of the data exchange process. The use of function keys to represent user-defined and often-repeated sequences of characters allows complex or critical strings of data to be sent with complete accuracy and without special knowledge or skill.

The FREEWARE "try it—you'll like it" philosophy encourages businesses to evaluate the package in-house, where the impact of the program on operation can be readily judged. Payment need not be made if the program proves unsuitable.

Because it is written entirely in BASIC, PC-TALK can be modified as required for a specific environment if the technical expertise can be applied. This makes it possible to integrate communication with other programs or applications more easily.

☐ Limitations

You cannot expect major-corporation levels of support on a software package which you are not obligated to even pay for. PC-TALK is user-supported software, as the doc-

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umentation clearly states. Companies without access to PC programming and communication expertise may find problems with the application of PC-TALK which they cannot correct, and paying for external consultation to solve the problems would greatly offset the low cost of the program.

PC-TALK is designed to operate with the popular Hayes SmartModem, and operation with other modems will alter operating procedures and invalidate certain features, at least in the way in which the documentation describes them. Users with little in-house technical support will probably find it impossible to alter the program or the procedures to work with non-Hayes modems.

The documentation for PC-TALK, supplied on disk as a print file, is not sufficient to support a non-technical user. Since there is no vendor support, many users could find themselves unable to even get the program to run.

Because of the speed limitations of the BASIC language, PC-TALK is designed for use only at speeds to 1200 bps. This is not a significant restriction for modem-supported communication since modems typically operate at that speed, but may impact users who wish to directly connect to their data center hosts.

■ HANDS-ON EVALUATION

Since PC-TALK's manual is supplied on disk in print form, the first task is to get it printed off. Our technical specialist did so, and after a short review advised us NOT to encourage users to read it first. The document, directed more toward the computer hobbyist than the office staff, would unquestionably confuse anyone with low computer/communication literacy.

Setting up the PC-TALK environment is a job for someone with communication and PC experience, and we set up a joint venture between our technician and a data center representative to support the venture. After getting the phone numbers and communication parameters of each of the four dial-in communication ports on the mainframe systems, our technician was able to set up the program so that it could be used by the office staff. It was a task which took longer than expected, however. Operating PC-TALK was easier than reading about it. The screens have a generally acceptable menu form, with prompting for entries and an explanation of options. There is even a Help function which provides a list of the commands. Users of the package found no fault with the operation or the functionality.

☐ User Interface

PC-TALK III uses a command-key structure where key meaning is provided either in the manual or in a help list which is available by pressing HOME. The commands are implemented by combinations of the ALT key and an alphabetic key. There is a general mnemonic relationship between the key and the command in some cases (Alt-T is the transmit from disk command), but many commands have no relationship to the command letter. The interface

is not as easily used or learned by non-communication experts as most other programs.

Menus: None. The program displays a list of valid commands when the user presses the HOME key.

Control characters: Ctrl-end sends a break to the opposite system, and Ctrl-PrtScr toggles the printer log. All other control characters are transmitted to the other system as keyed.

Function/special keys: The function keys in all their variations may be defined by the user to represent up to 126 characters of text. Alt-0 through Alt-9 may also represent text strings, but the settings will not be saved to disk. Alt-alphabetic combinations are used to invoke system commands. User defined strings may be edited only by replacement.

Command language: None. Function keys can generate text to be transmitted but cannot be implemented as commands.

Positive feedback: There is no feedback on proper command execution in most cases. Menu or prompt changes will signal data acceptance in commands with multiple input levels. Command editing is minimal.

Status display: Status information is displayed periodically in response to commands, but there is no formal status line.

Help facilities: Pressing the HOME key causes a list of commands to be displayed.

☐ Environment

PC-TALK will run on nearly any IBM PC likely to be found in a corporate environment. A 64K-byte system with a single disk drive can be made to work, but the ideal system should have at least 128K bytes of RAM and dual floppy disks, or a hard disk. File storage on the program disk, while possible, can limit the usefulness of the program.

An IBM Asynchronous Communication Adapter or equivalent, or a Hayes SmartModem integral modem are required for operation. The program is generally adaptable to the use of other modems, but the adaptations should be considered only if there is some technical expertise available to support them.

The program will support the dumping of communication data to the printer, and printer options can be selected to preset the printer to, for example, condensed format. You can also select an alternative communciation port address; COM2 instead of COM1 on the IBM PC. This allows the program to be used where the serial port is used at a different address than the standard value, or with systems with dual modems or dual serial ports. One of our computers used a direct cable interface to a DEC computer and a modem to attach to an IBM data center system, and the program could be used with either.

We were able to alter the automatic dialing feature of the program to work with a smart modem other than the Hayes, but some of the program features were not available with

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the other modem, and there was not indication as to how to make them work.

☐ Documentation

PC-TALK tells you nearly everything you want to know in its documentation, but not in the way you want to know it.

The material appears to be directed to the computer hobbyist who has a programming-level understanding of the equipment and a desire to understand the communication interaction as well. Since most of our staff had neither (and we did not particularly want them to acquire it), the manual was not highly useful. Our technician found that the best way to set up and use the product was to load it onto the computer and use the manual as a reference.

The most difficult aspect of the manual is its organization. The material is presented in almost the opposite order in which it is likely to be needed, and there is no good functional overview of the product to help relate the sequence of presentation to that of operation. We found ourselves skipping steps and running with (incorrect) default values because we did not know to set them.

The jargon used by experienced micro/communication users sometimes disguises significant operational issues. In a section on printing the file being received, a note is made that communicating at "1200 baud" while printing is undesirable "as you are likely to overflow the communication buffer. If this happens, the program will attempt to recover by turning off the printout function." Our technician deciphered this to mean that the use of the printer at the NORMAL OPERATING SPEED OF OUR HOST SYSTEM could cause us to lose data, something we would have liked to have seen more clearly presented. In general, we found the examples and explanations in the manual presented at a level inappropriate to corporate office staff and even most management personnel.

☐ Functionality

Using the PC-TALK program is best undertaken in a systematic fashion, something made difficult by the sequence of the documentation. The program contains significant support for making calls, but nearly nothing for receiving them, and the function of receiving a call could not be found in the documentation. We settled temporarily for making a call, which requires setting up an entry in a dialing directory.

Dialing directory functions are the best part of PC-TALK. A user can define up to 60 entries, and each entry contains not only the number to be called (and the symbolic name by which that number is known) but the communication parameters which will be required to support that particular connection. With the table of data center characteristics we were given by operations, we were able to set up the 4 different dial connections and their associated parameters. This enabled us to use the program to dial a host without worrying about the parameter settings, something most of our operators knew nothing about and therefore were likely to get wrong. The directory can also set a "pacing" command, which allows lines of text being sent by PC-TALK to be delayed until a time interval has passed

or until a prompt character is received. This allowed us to enter data into host utility programs called "line editors" without data loss.

Manual dialing is also supported by PC-TALK, either external to the program or via the modem if the modem supports it. To do either manual dialing via modem feature or the directory dialing, the command sequence to cause the modem to dial must be known by the program. The program is pre-set for the Hayes modem, but can be changed to work with other modems as well. We were able to get the dialing feature operational on two different smart modems without any problems. The REDIAL option, however, assumes the Hayes structure and cannot be used with other modems unless a program change is made.

Long distance dialing is supported both in direct mode and via one of the specialized long-distance services. Up to 2 different services can be supported on the product, and either can be selected. Unfortunately, you cannot include the specification of a dialing service in the dialing directory entry; you must specify dialing an entry VIA such a service when the dialing request is made.

Once you get connected to another system, the program will permit either the transmission or reception of files. In our applications, this required the transmission of a set of characters to the data center equipment to log on and to load the proper programs. PC-TALK allows user definition of the 10 function keys on the PC alone, shifted, with CTRL or with ALT pressed. This provides up to 40 strings of defined command which can be invoked by a single keystroke. Each string can be up to 126 characters long. We used a standard for the setup of each key; F1 was the log-on key, F2 the "prepare to send file to host" key, etc. The function keys can also be used to generate file names where PC-TALK asks for the name of a file to be sent or received, but they cannot be used to answer menu prompts.

Using the program once it has been set up with the parameters and standards of the system to be dialed proved very easy. All members of the staff felt comfortable in initiating communication sessions with any of the 4 host systems, and there were few operational problems. We found that defining an entry in the dial table for the direct host connection was operationally more convenient than asking the operators to remember a different connection procedure, and PC-TALK allows dial sequences which contain no digits. Unfortunately, it will send the modem a "dial command" code, something we eliminated by making it a space character for that connection.

In our 4 applications for communications with the data center, the features of PC-TALK proved adequate. Operators found that making calls to other systems was easily done and that the control of the data exchange was facilitated considerably by the function key capabilities. The lack of support for data rates over 1200 bps was disappointing for our direct connect application, however.

We had a single requirement to send data to a PC at another location, and PC-TALK supports file transfer using an "error correcting protocol" for exchange between two

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systems both of which are running PC-TALK. This permitted exchange of spreadsheet files between our headquarters and a branch office without errors. We transferred a total of over a million characters of data over a period of several weeks and had no transmission errors, when normally we experienced at least 2 in that interval. Transmission in error control mode is somewhat slower than in normal mode.

During our PC-to-PC application we were forced to face the problem of RECEIVING calls (both PCs could not assume the role of the dialer). We found that the program would in fact receive a call, but that the modem had to be placed into receive mode by sending it a control command from the keyboard. We set up a function key for that purpose. The next problem was that the operator could tell that an incoming call had been received only if the MODEM generated a signal. One of ours did not, so we were forced to set up a procedure where the dialing PC sent a "hello" message after connecting to alert the answering system to set up the application.

☐ Ease of Use

"Use" of the PC-TALK program must be divided into 2 sections, the setup of the communication environment and preparation of operating instructions to the staff, and the actual use in normal production. The latter proved quite satisfactory, but the former was unreasonably difficult.

The biggest problem in the use of PC-TALK is the acquiring of the basic understanding of the function, features, and operation which is required in order to apply it to a business communication problem. The documentation is non-tutorial and organized in a way which almost defies explanation. This caused even our technical specialist to give up on "abstract reading" and sit down with the program and manual in an attempt to puzzle out the product's operation.

The program relies on the modem to keep the operator informed of the status of the connection, and on directly connected data paths it was possible to transmit an entire file over a disconnected cable. We learned to require some form of positive feedback from the host to prevent this; using a prompt to trigger transmission of each line of text was an example. But nearly all our operators occasionally got confused as to whether a connection was actually in effect. No status or option settings are displayed on the screen during normal operation.

Problems during a communication session are inevitable, and the manual is not helpful to an average user. We were forced to operate for about a week before our technician completed the "ERROR RECOVERY" section of our internal operations manual, and a great deal of time was lost to questions and uncertainties.

☐ Support

There isn't any. It's as simple as that. FREEWARE products are distributed at low (or no) cost with the understanding that this is because there will be no user support. We did not try writing to the FREEWARE post office box address to determine whether a written inquiry would be answered, but there are no phone numbers provided with the package.

☐ System Interface

We were able to sign onto IBM CMS systems and DEC PDP-11 or VAX computers using the PC-TALK program, and file exchange for text files was not difficult. Although PC-TALK is capable of binary file transfer, we could not set our data center equipment up to send binary data to terminal ports.

Communication between 2 PCs using PC-TALK can use the XDATA file transfer protocol, which permits error detection and correction. There is a brief summary of XDATA in the documentation, but not enough information is provided to implement the protocol on another computer system and we could not locate a full description for it. A developer is mentioned in the document, but that person is apparently assumed to be a household word in PC communication and no means of getting in touch with him is provided.

The FREEWARE distribution system prevents any single agency from having a list of users for any software, so errors or problems cannot be reported to users or corrected by reissue to each user. The manual asks that no one distribute a modified version, but since any user's copy is likely to have come from another user who COULD have changed something, it probably pays to watch for any signs of modification.

☐ Vendor Experience

The documentation supplied with PC-TALK makes it clear that the programs involved in the FREEWARE program are written by users and owners of personal computers and not by large commercial development ventures. While we did not find any actual program errors in the package, we had no way of determining how many PC-TALK users there were and the level to which the product had been tested.

■ PRODUCT OVERVIEW

☐ Terms & Support

Terms ● PC-TALK is supplied through FREEWARE, The Headlands Press, Inc, or copies may be legally obtained directly from other users of the program ● a contribution of $35 is requested, but not required ● if a copy is requested from Headlands Press directly, a blank diskette and postage-paid mailer must be included.

Support ● none provided by vendor.

☐ Component Summary

PC-TALK is the actual PC-TALK program in compiled form. This form of the program requires 128K bytes of RAM to execute.

PC-TALK.BAS is the BASIC source for PC-TALK, which must be run using the BASIC interpreter. This form of the program will execute on a 64K-byte system. PC-TALK.DOC is the manual, in print image form. Various "batch" files are also provided for running the program, copying it for other users, and printing the documentation.

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PC-TALK III:

$35 lcns

☐ **Computers & Operating Systems Supported**

IBM PC or PC/XT; PC-compatible operation discussed in documentation.

☐ **Minimum Operating Requirements**

IBM PC or PC/XT with minimum of 64K bytes of RAM and 1 disk drive; 128K bytes of RAM and dual disk drives recommended.

☐ **Features**

Type of Product ● teletype/teleprinter emulator product for asynchronous communication and file transfer.

Target Host Computers ● any computer system capable of supporting a device such as a Teletype model 33/35 terminal or a teleprinter, IBM mainframes and minicomputers may be suitable targets if host software is adapted; the package provides similar

LCNS: license fee.

communication options to the IBM Asynchronous Communication Support program, but different operating features.

Protocol ● asynchronous, ASCII code set.

Data Rates Supported ● 75 to 9600 bps, as limited by the connection mode; the version of the program equipped to run on 64K-byte systems may not support operation over 2400 bps because of a slower programming language.

Format Conversion Features ● none available.

Automatic Setup Features ● default settings for communication parameters may be changed, and the dial directory may contain communication parameter settings for each phone number listed; function keys may be associated with strings of up to 126 characters based on user input; these key assignments may be viewed or replaced; associations can be defined for the keys in normal mode, shifted, Ctrl-, and Alt-; the Alt- key may also be used with any single numeric digit to define a temporary string association which will not be preserved at the end of the current program execution.

● **END**

HFK Software, Inc QWERTY
Word Processor

■ PROFILE

Function ● word processor.

Computers/Operating Systems Supported ● IBM Personal Computer, Compaq, Seequa, Chameleon, Bytec, Hyperion/PC-DOS or MS-DOS.

Configuration ● 64K bytes of RAM, one floppy drive containing at least 100K bytes; monochrome display or color/graphics board and the appropriate monitor; printer with appropriate interface is recommended.

Current Version/Version Reviewed ● Version G/Version 2 (Serial number greater than 600).

First Delivery ● February 1983.

Number of Installations ● approximately 800.

Comparable Products ● Softword Systems MultiMate.

Optional Associated Software ● backup diskette purchased when registration form mailed.

Price ● $325 retail price; $15 for backup diskette.

Vendor ● HFK Software, Inc; Old Danbury Road, Danbury, NH 03230 ● 617-259-0059.

■ ANALYSIS

Word processing software has been around a long time, and new products often take a different slant in order to address the marketplace. Sometimes that slant is very effective, but more often it is not. QWERTY, alas, falls into this latter category.

HFK Software did not choose to include the ability to configure printers as part of the product. Since printer technology is changing rapidly, it is unreasonable to assume that the printer configuration will remain static. The advancement of ink-jet printers offering color is here and, when it becomes competitive, the existing printers will be upgraded. Software which cannot keep pace will probably be dismissed as unmaintainable.

Beginners are certain to be confused by the reference manual, which chose to ignore the conventional names of some of the basic features of an electronic word processing system. The manual would benefit greatly by being revised by a competent technical writer who was familiar

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.

with commercial word processing, perhaps eliminating some of the new and possibly trendy, but nevertheless confusing, terms.

HFK Software decided to copy-protect the software without providing a backup diskette either with the product or at a reasonable cost. A $15.00 charge might well have been added directly to the price of the package and an extra diskette included, since no business could risk being unable to use the processor for the several days minimum turnaround which a request for a backup would entail.

Professional/academic users with no particular predispositions toward the more conventional approaches to word processing might find QWERTY a suitable product, but its use in a corporate environment seems certain to cause confusion among users.

☐ Strengths

The ability to link documents together for printing may be a significant advantage. Large works can be entered in chapter mode, and the material produced by multiple users can be consolidated. This feature overcomes document size restrictions with the program arising from the fact that it edits the entire document in memory. The subsequent files continue to print as if they were part of the previous one. In order to print the subsequent files, no resetting of the current document parameters is necessary.

Most online Help functions in other products require several steps to complete successfully. The three provided by this product are quite terse in operation: Help with specifying line format is provided by the shifted F1 function key. The shifted F3 key displays the syntax of commonly used format lines. And, the shifted F5 function key provides instruction for the "Cut and Paste" operation. Each is invoked by holding down the shift key and depressing a function key, and the Help function continues as long as the shift key is depressed.

PURCHASE PRICE RANGE

Software Price Range ☐▬▬▬

QWERTY $325

$90 to $550

$200	$400	$600	$800	$1,000
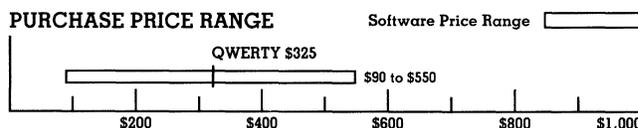
HFK SOFTWARE, INC QWERTY PRICING ● open bar shows the typical range of prices for **WORD PROCESSING** software used in a corporate environment ● the vertical line within the bar graph indicates the price of **QWERTY**, the evaluated product, relative to the price range of similar products.

HFK Software, Inc QWERTY
Word Processor

The display of the date and time on the screen at all times can be helpful to users who want to include the information in letters, etc.

☐ Limitations

QWERTY, in addition to being copy protected, was pre-configured with support for a single printer. Prior to the advent of DOS 2.0, one could specify two printer configurations, but there is now insufficient room for both on a single-sided diskette. Our initial copy arrived with an incorrect printer configuration which severely limited its usefulness. There is a QWERTY Merchant's Kit which will allow the configuration of ten basic printer types including models from IBM, Spinwriter, Diablo, Okidata, and Toshiba; but, it is a dealer program and is not included with the package.

Most users will find the assignment of the keyboard keys difficult to remember because the special function keys are used (in part) to cause the "typehead" (read "cursor") to move while the direction keys (arrow, home, page up/down, etc) are used for special functions. The product manual clearly states the keyboard usage for these and the other peculiar usages of various keys. But we know of no other product which supports this particular configuration. Where does it all end? Must we learn a new meaning for each key with each new application?

Secretaries will be puzzled by the implementation of "typewriter mode." While in typewriter mode, the TAB, SPACE, and RETURN keys cause cursor movement, but do not alter existing text. If "typewriter mode" is supposed to help correct material, it fails here. Without being able to key a space over a character, one must (1) press the space bar to move beyond the character, (2) press the "correct" (read "backspace") key to back up one position and overwrite the character with a space, and (3) space beyond the character again.

The "line" implementation of the product was very restrictive. In order to perform block operations, the text must either be moved line by painful line or through a disk cut-and-paste sequence. Finding the destination of a move may be tricky in a product which shows you what you have done but not what's ahead. This problem is accentuated by the fact that there are no paging commands for viewing the display. It is reminiscent of a line editor . . . but a line editor is free with PC-DOS.

■ **HANDS-ON EVALUATION**

Our technical staff was given the task of installing this product. As is their standard procedure, they read through the doumentation to uncover any obvious problems. They had no difficulty in following the directions provided with the product to install DOS on the diskette, but they noted that the product diskette is copy protected and that a backup copy is not included with the product. In order to get a reserve copy, the QWERTY registration form must be completed and returned. The cost of the backup diskette is $15!

Our secretarial staff and professional users proceeded through the exercises in the manual to learn the product. They found the documentation difficult to comprehend, not because it was poorly organized or written, but because the author chose to use unusual terms to describe standard functions. For example, the author chose to call the backspace key the "CORRECT" key. The use of the key in "insert mode" is consistent with the standard typing function; the preceding character is deleted and the cursor is moved back one space. In "typing mode" use of this key causes the cursor to back up one space and change the character to a space. Incidentally, this seems to be the only way to key a space in "typing mode." Other examples of non-standard terminology include "typehead" for "cursor" and "typing mode" for "replace mode." These users did find that they could create most standard documents with the product, but were unable to verify the printed results until the package was configured for the correct printer.

The use of audio cueing by the package was a real surprise. Unfortunately, the different tones which sound when the operator is required to perform a function are not sufficiently different to be recognizable. In addition, they are generally accompanied by a flashing message, and are reminiscent of a video game. (In fact, a simple game is included with the package—perhaps for use after one has hit the left arrow for the 50th time only to have the boldface attribute toggled and the typehead (read "cursor") still pointing exactly where it was.)

The package was interesting, and even entertaining; certainly inventive and different in style. However, we couldn't adapt to it at all.

☐ User Interface

QWERTY uses a computer display to simulate a typewriter, providing a user with no computer experience what is perhaps a minimum transition to word processing. In doing so, the package limits the application of computer power to the document production task. The terms, concepts, and style of both program and documentation diverge significantly from the standards for computers and those of word processors. While the user interface may be initially less threatening to typewriter users, the overall result limits the product's usefulness.

Menus: A main menu of operation selections will be displayed when the program is loaded and at the completion of any functions. No other menus are used.

Control characters: The Ctrl key is not used. Formatting commands are issued by keying a "PrtSc" character followed by two letters to define the command. These commands display on the text and may alter print appearance, but do not print.

Function/special keys: QWERTY uses the function key pad and the numeric keypad for entry of special commands. The function keys are used for cursor ("typehead") movement rather than the cursor control keys. The numeric keypad where the cursor keys are located is used for special commands such as superscript, subscript, underscore, etc.

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Command language: none.

Positive feedback: Commands generally cause a change in appearance in the text or in the typehead attribute display in the status line. Some formatting commands may be difficult to evaluate in terms of effect until the document is printed.

Status display: Document name, percentage of available memory utilized, column of "typehead", typehead character attributes, and the meaning of the special numeric keypad keys are displayed at the top of the screen.

Help facilities: Function keys F1, F3, and F5 in shifted mode will provide help with formatting, cut and paste operations, or tab/print ruler use. The text of the help is somewhat useful but may not answer all user questions. There is an appendix of commands and functions in the documentation.

☐ Environment

The product will fit on a minimally configured system; only a single disk drive and 64K bytes of RAM are required. Additional memory will be utilized to hold a larger document. The author recommends, however, that large documents be entered in sections, each using a separate file, since the product has the capability of chaining different files together to form a larger document.

The product was originally delivered configured for a Diablo 630 printer which was incompatible with our system. We requested that the product be retrofitted with the Okidata version.

The distribution diskette is copy protected, and no extra copy is provided. Since we could hardly afford to be without a word processor in the middle of a large report, we had to order one. The copy protection aspect of the program also makes the product non-installable on hard disk drives, and we could find no instructions on how that might be accomplished.

☐ Documentation

HFK Software has chosen to break from the tradition of an IBM-style binder in a slipcase and opted instead for a thin 8.5 by 11, semi-rigid, plastic cover. We found that with only light usage, the pages tended to tear out of the binder.

The documentation consists of a single manual organized into four sections: a user-oriented set of procedures and function, a set of notes with additional information, an appendix containing a quick reference list for special usage keys such as the numeric keypad and the function keys, and a glossary of terms. An index is also provided which references operations by name rather than by command.

There is no separate tutorial, but the manual is organized in a tutorial fashion consisting of 16 exercises, each of which is designed to illustrate a specific function. The exercises toward the back of the tutorial generally increase in complexity. Because of the tutorial nature of the manual, its usefulness as a reference manual is limited. We found ourselves asking "how complex was the xyz function?" just so we could locate it. The index is useful in locating lost features only if you know the name of the feature—and some of the names were rather unique.

The manual is full of new terminology and terminology transplanted from typewriter days. The intentions in this are probably good, but the fact is that computer terms have already crept into the office. Inventing new ones only causes a conflict for users who must first understand their computer vendor's terms and conventions, then the "accepted" standard terms, and finally those of QWERTY.

☐ Functionality

One of the first things which our secretarial staff looks for in a word processor is a full screen editor. QWERTY is designed as a line processor with a "text window" to display a portion of the document. Character, word, and line movement are supported, but more than that is only supported through the search function. This approach is apparently based on the desire to retain a high degree of compatibility with typewriters, something which our administrative coordinator felt was "like going back to stone and chisels."

The text displayed is that up to and including the current, or "command," line unless a special "peek" function is keyed. This function, invoked by holding down the shift key, then typing the F7 function key, replaces the "typehead" and scale display lines with the next two lines of the document and remains as long as the shift key is depressed.

The format of the text window is close to what the printed output will look like. Spaces are shown as dots and the right margin is ragged, but the document does not need to be reformatted once it is keyed. Our secretarial staff found that the representation of spaces as dots was very helpful in aligning items for business letters.

Block text operations are available, but some restrictions apply. Only one block may be stored at one time, thus "a boiler plate" must be stored on separate diskettes, or at least in different directories. This feature proved to be an unfriendly vehicle for the preparation of our budgetary report which had several standard paragraphs, each of which appeared in a separate part of the document with different variable data. He ended up rekeying the data.

The product does not include either a spelling checker or a dictionary function; but, fortunately, it does contain a glossary which will decipher some of the more obscure terminology which appears liberally throughout the manual.

The product can be used as a program editor. The default file extension created is a text-oriented ".DOC" file, but it can easily be overridden. Our technical staff used it to store the source code for a Pascal program and experienced no difficulty in either naming or retrieving the file with the ".PAS" extension.

Control of the formatting of the document is accomplished through the use of the format lines. These lines are not printed, but rather they contain control instructions for the printer. Our staff found it helpful to be able to view the commands rather than have them be hidden in some word-

HFK Software, Inc QWERTY
Word Processor

processor-private-place as they are in some other word processing programs. They found it reassuring to be able to alter a format without having to enter a special mode to view the commands. The format lines basically control paging and spacing. Our secretaries found this aspect useful in the preparation of included document segments which were to be formatted differently than the rest of the material.

☐ Ease of Use

The Help structure of this product is one of its strong points. A display of Help with each function may be requested by pressing SHIFT and the function key for the particular function you need help with. Nine functions are explained, including: single and double underscore, boldface, super- and subscripts, struck through, and syllable beginning. Other Help functions are available. The display remains until the shift key is released. The "Cut and Paste" and "Peek" (a two-line look ahead) features are both invoked and sustained in this manner.

The product also has a simple but effective menu structure which supports its operation. It makes using the product without reference to the manual practical even for relative novices.

It took a lot of time in order to become comfortable with the keyboard usage of the product. Every time we changed to a different product, we found that our rate of keystroke error was significant for a few minutes, depending on how long we keyed without observing the screen. We feel the product would be much easier to use in the integrated world of corporate data processing if it conformed more closely to the commonly accepted naming and usage conventions.

☐ Support

HFK Software has provided several free updates to its customers. These include "COLOR QWERTY" which provides an interface to the color/graphics card and monitors, and "HEADERS and FOOTERS for the QWERTY WORD PROCESSOR" which provides additional formatting features and options for page numbering. In order to receive these upgrades, the user must return the product diskette to HFK Software, Inc.

We requested an update to the software which supported our printer, and the new version was delivered in about 10 days.

Phone support from HFK Software was helpful and enthusiastic, an indication that the people believe in the concept of the product. The attitude was instrumental in keeping our staff trying in the use of the product even when frustration was at its maximum.

☐ System Interface

QWERTY can be used as a program editor for languages such as Pascal or Assembler. We were able to assign any valid DOS file extension, but the default extension is .DOC.

The QWERTY Merchant's Kit (Version Two) released in September 1983 provides a means of interfacing QWERTY

with ten printers. They are: Epson, 3530 Spinwriter, Centronics 353, Smith Corona TP1, Teletype (universal TTY), IBM matrix printer (default), 3550 Spinwriter, Diablo 630, Okidata Microline 92, and Toshiba P1350.

☐ Vendor Experience

HFK Software is not listed in any of our directories of software vendors. QWERTY is apparently its first commercially-distributed product.

■ PRODUCT OVERVIEW

☐ Terms & Support

Terms ● QWERTY is available on a license for purchase only from HFK Software, Inc, through computer dealers, software dealers, or mail order houses throughout the United States ● HFK Software, Inc provides a trial policy whereby they will refund all of the purchase price except $20 (handling charge) provided that their trial policy form is returned with all manuals and diskettes.

Support ● telephone support provided by vendor ● vendor also provides free update enhancements which include: COLOR QWERTY to interface to a color/graphics card and monitor, and HEADERS and FOOTERS to provide additional formatting options.

☐ Component Summary

Software elements include 2 program diskettes entitled "Word Processor" and "Text Merge". The program diskette entitled "Word Processor" includes files QWERTY.EXE, the word processor program; GAME.EXE, amusement; INSDOS.BAT, a batch file to install DOS; and CUTPASTE.TMP, a work file. Sample files include XD1.DOC, XD2.DOC, XD3.DOC, and XD4.DOC.

The program diskette entitled "Text Merge" includes files MERGE.EXE, the word processor program; INSDOS.BAT, a batch file to install DOS; and CUTPASTE.TMP, a work file. Sample files on this diskette include: NAMES.DOC, LETTER.DOC, and MERGE.DOC.

QWERTY Diskettes:

$325 lcns

☐ Computers & Operating Systems Supported

QWERTY runs on the IBM Personal Computer, the Compaq, Seequa Chameleon, and the Bytec Hyperion running PC-DOS or MS-DOS.

☐ Minimum Operating Requirements

The QWERTY word processing package requires 64K-byte minimum memory, one floppy disk drive containing at least 100K bytes, and a monochrome display or color/graphics board and monitor. A printer with appropriate interface is recommended. A dealer-provided QWERTY Merchant Kit provides a means of interfacing QWERTY with 10 printers. (See the Interface section for a list of the printers.)

☐ Features

Display Type ● modified typewriter image; characters are keyed into the bottom of the display; spaces are replaced by dots in the display; format commands are visible.

Display Feature Utilization ● audible feedback on alert conditions; special attributes are generally not used.

Command Structure ● easy-to-use menu structure with function keys used for command entry during text mode; help available for all function key commands; display does not destroy text context.

Error Recovery ● no special commands for intermediate saves of documents are provided, so the user must exit and restart; cut-

LCNS: license fee.

HFK Software, Inc QWERTY
Word Processor

and-paste concept used for block operations makes it possible to undo a deletion of a block of text by pasting back to the original spot.

Block Operations ● all mechanized through cut-and-paste concepts using disk as an intermediate storage medium.

Merge/Print Functions ● documents may be combined at print time, but no form letter/list merge facilities are supplied.

Spelling Check/Aid ● not available.

Multiple Window/Multiple Document Support ● no simultaneous updating or viewing of documents or of multiple points in the same document is supported.

☐ Other Facilities

A backup diskette can be purchased when the registration form is completed. Since the package is copy protected, a backup copy will probably be considered necessary.

Backup Diskette:

$15 lcns

● **END**

Howard W. Sams & Co. Instant Recall
Data Management Package

■ PROFILE

Function ● free-form, database management program for collection, storage, and retrieval of small to moderate amounts of information.

Computers/Operating Systems Supported ● Apple IIe, Apple II+, or Franklin Ace with 48K bytes of memory, using DOS 3.3 and Applesoft in ROM.

Configuration ● Apple IIe-compatible computer, display device, one disk drive ● optional printer with printer interface card and second disk drive.

Current Version/Version Reviewed ● 2.6097/no version number given on diskette.

First Delivery ● February 1983.

Number of Installations ● information not available.

Comparable Products ● Data Manager; Datafax; Software Publishing pfs:File.

Optional Associated Software ● none.

Price ● $60 retail price.

Vendor ● Howard W. Sams & Co, Inc; 4300 West 62nd Street, Indianapolis, IN 46268 ● 800-428-3696.

Canada ● Distributors: Lenbrook Electronics; 111 Esna Park Drive, Unit #1, Markham, ON L3R 1H2; 416-477-7722 ● Copp, Clark & Pittman; 495 Wellington Street West, Toronto, ON; 416-593-9911.

■ ANALYSIS

Instant Recall is a simple to learn and easy to use program for the collection, storage, and retrieval of information. The user types on the screen whatever he pleases, and then saves it as a record. The records are recalled individually. Optionally, all the records that contain a user-specified word can be recalled. The records may be recalled to the screen or to a printer. Collections of these records are stored as files on diskettes, providing long term archival storage. As an example, a file can be an address book. Each record could contain a family's name, address, telephone number, the names of their children, etc. The records can be recalled by specifying a word to search for, such as a surname, a street name, a telephone number, etc. The matching records are then recalled.

Instant Recall does not require knowledge of the Apple's DOS 3.3 commands, and only a minimal amount of Apple II knowledge.

PURCHASE PRICE RANGE

Software Price Range ▢

Instant Recall $60

▢━━━━━━━▢ $50 to $300

| $200 | $400 | $600 | $800 | $1,000 |
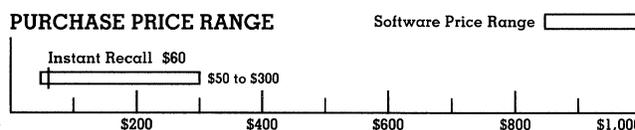
HOWARD W. SAMS INSTANT RECALL PRICING ● open bar shows the typical range of prices for **DATA MANAGEMENT** software used in a corporate environment ● the vertical line within the bar graph indicates the price of **INSTANT RECALL**, the evaluated product, relative to the price range of similar products.

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.

☐ Strengths

Whereas most database programs have pre-defined, rigid fields to fill in, Instant Recall uses a flexible, form-free screen. Thus, the user can enter information in most any way he pleases. The number of screens available for use is limited only by the amount of text entered onto each. Up to 21 lines (or 840 characters) are available per screen (or record). A diskette may contain four files, each with a maximum length of 28,672 characters. As information is entered into a file, the amount of room left in memory is displayed at the top of the screen.

Instant Recall is extremely easy to learn. The manual is a brief 61 pages, nicely put together in a binder, which folds to make a stand. The instructions are written in simple terms and in an amusing manner, making it fairly enjoyable to read. The Tutorial section gets the user off to a good start, leading him step by step in assembling a short file. An Instant Recall demonstration is also included on the Instant Recall Master diskette.

☐ Limitations

In exchange for its ease of use, most of the complex functions found on more sophisticated systems have been sacrificed. For example, Instant Recall is most deficient in report generating capabilities. It does not support arithmetic and alpha sorted fields or field arithmetic. You may print one record, dump several associated records, or the entire contents of a file, but they will come out in the order in which they were entered. A printed record appears simply as a dump of the video screen. While running Instant Recall, an online help menu is not available.

■ HANDS-ON EVALUATION

Users with little or no computer experience will most likely be the biggest fans of Instant Recall. The simplicity of the manual makes it quite unthreatening. By first viewing the demonstration on the program disk and then working

Howard W. Sams & Co. Instant Recall
Data Management Package

through the tutorial at the beginning of the manual, one can begin to use Instant Recall virtually within minutes. By using the command reference card, the user will only occasionally need to consult the manual.

A few frustrations may be encountered when using Instant Recall. What is described in the manual rather proudly as a "slight beep" which reminds the user "gently" when he errs is actually a normal, annoying beep. At times, it occurs appropriately (ie, when the wrong command key is hit), but at other times it seems unnecessary. The most irritating use of the beep is when it occurs at the end of each full line of text when using the text wraparound function. Also, at least one error was found in the index when attempting to look up a command function.

☐ User Interface

Instant Recall is easy to learn and efficient to use. The Apple IIe's cursor keys allow for direct movement within the document. Commands are single keystroke operations, sometimes combined with the conveniently located "control" key. These single key operations are based upon easy-to-remember abbreviations, such as "cntrl-B" for before, "cntrl-N" for next, etc.

Menus: Menus are provided for file descriptions, selection, and storage.

Status Line: Indicates how many characters of memory are free for more text and what "operational mode" the user is in.

☐ Environment

Instant Recall supports the Apple IIe, Apple II+, Franklin Ace, and other Apple or Apple compatible computers with at least 48K bytes of RAM, and Applesoft in ROM. The screen is displayed in 40-column mode. It may be used with one or more disk drives and supports a printer.

Instant Recall is copy protected. No backup diskette is given. The manual gives no mention of the backup policy. The copy protection also prevents the present Instant Recall from being copied to a hard disk.

☐ Documentation

The documentation provided includes a handsomely bound manual that doubles as the manual's stand. The Instant Recall manual contains a quick demonstration, a tutorial, and more detailed information on the program.

The manual is comprehensive, relatively clear, and moderately well organized. It was felt that more screen images would have facilitated our learning process. Only a few of these screen images are provided in the 61 page manual. Each of the three operational modes is illustrated with a keyboard layout chart labeled by function. At the back of the manual there is a command reference summary and a short index. The command.summary is also given as a separate reference card.

☐ Functionality

Instant Recall provides rapid access to small (28K-byte), free-form databases and is functionally complete. This simple database program has no software options available.

☐ Ease of Use

The ease of use and simplicity of Instant Recall make it best suited for home and, possibly, simple business usage. Its primary appeal is as a "first-time user's" database, performing simple retrieval of information.

The work area in Instant Recall is the computer memory, RAM; disk storage is used for archival storage. This means that a given database is restricted in size to available memory. For an Apple IIe with 64K bytes of RAM, available memory is 28K bytes (or somewhere between 40 and 1000 records) per file. Four files are stored on a diskette.

☐ Support

The owner of Instant Recall may receive customer support if his warranty card is on file with Howard W. Sams & Co., Inc. There is a 90-day warranty on the software and it will be replaced if found to be defective within this period of time.

☐ System Interface

Compatible printer interface cards are supported in slots 1 through 7.

An unfortunate interfacing limitation is the inability to read from, or to "print" into, standard DOS 3.3 text files. This prevents the user from integrating work done on Instant Recall with that of word processors, spread sheets, etc. Furthermore, Instant Recall's data files are not stored in a DOS 3.3 format. A cataloged data disk may appear to be unused, even though data files are stored on the diskette. Hence, all Instant Recall diskettes should be clearly labeled.

☐ Vendor Experience

Howard W. Sams & Co., Inc is an established vendor of microcomputer software and books for the Apple II, IBM PC, and Radio Shack TRS-80.

■ PRODUCT OVERVIEW

☐ Terms & Support

Terms ● Instant Recall is available for purchase from Howard W. Sams & Co., Inc, through computer dealers, software dealers, and mail-order firms.

Support ● customer support may be received if a warranty card is on file with Howard W. Sams & Co., Inc.

☐ Component Summary

Instant Recall is packaged complete on one diskette containing the Instant Recall Program, an explanation of commands, a printer slot configuration program, and an Instant Recall demonstration. It also includes a user manual with a command reference card. A data diskette is also included as a demonstration and a bit of advertising containing information about other Howard W. Sams & Co., Inc software and books.

Instant Recall:

$60 lcns

LCNS: license fee.

Howard W. Sams & Co. Instant Recall
Data Management Package

☐ Computers & Operating Systems Supported

Apple IIe, Apple II+, or Franklin Ace with 48K bytes of memory, using DOS 3.3 and Applesoft in ROM.

☐ Minimum Operating Requirements

Instant Recall requires an Apple IIe or Apple-compatible system with 48K bytes of memory. A display device and one diskette drive are also necessary.

☐ Features

Display Type ● 40-column display ● free-form text entry anywhere on display ● searching locates a form with the keyword embedded anywhere on the page.

Display Feature Utilization ● audible feedback ● status line at top of screen ● menu selection of files.

Command Structure ● commands performed by single keystrokes ● menu selection of files.

Error Recovery ● Instant Recall handles DOS and command errors ● major commands are confirmed before taking effect.

Merge/Print Functions ● can append disk files to file in memory.

● **END**