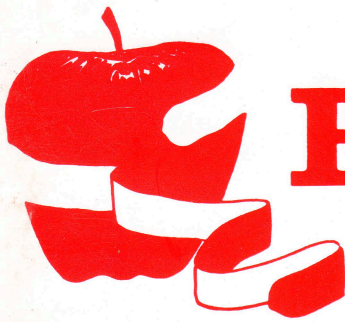


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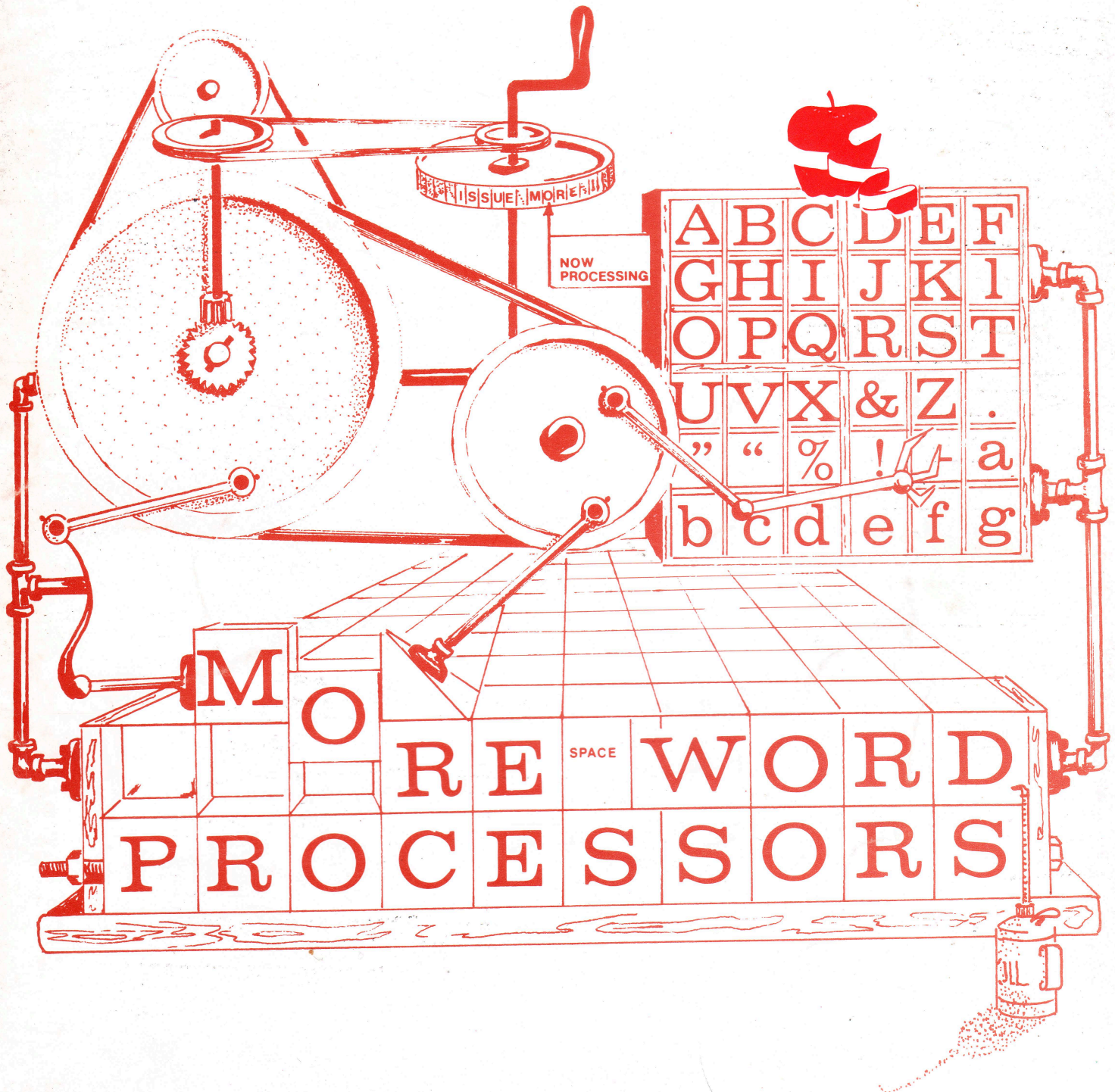


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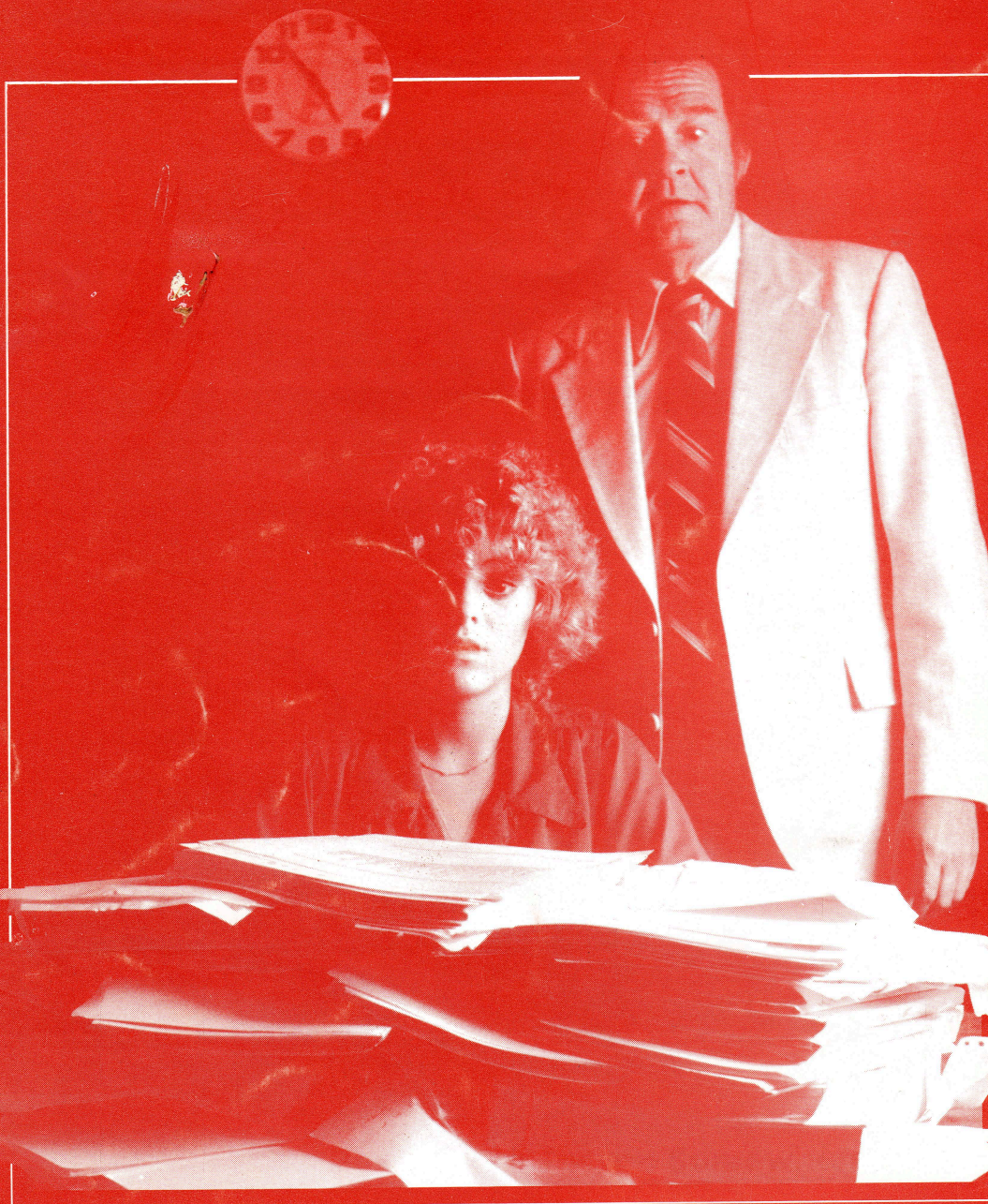
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BY MICHAEL DHUEY

The ON-LINE DATABASE is designed for high-speed retrieval of a large number of records. Retrieves records in 3 seconds with 1000 records on a disk. Maximum use is made of machine language routines and binary search keys. Data is compacted to a maximum and any deleted records are re-used for new entries. The ON-LINE DATABASE has been used for 1½ years at Blue Lakes keeping track of repairs, back orders, mailing lists, sales and other data.

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- SCREEN PRINT
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ON-LINE UTILITIES DISK TWO

FEATURES:

- IS FULLY MENU DRIVEN
- FEATURES LIVE ARITHMETIC
- CAN MERGE FILES

Applications:

Math

This feature of the Utilities allows you to create Custom Reports with full math and auto-paging. You can write your own print routines in BASIC including titles, headers, subtotals, midtotals, and of course, grand totals. Breakouts of sub and midtotals are done automatically by the computer when the subsearch and major search change. It is currently being used to breakout a check book, handle purchase orders, and do job costing. The feature essentially gives you the ability to perform arithmetic operations utilizing differing fields within the DATABASE to produce a continuously changing file.

MERGE FILES

This feature allows you to use selected records from one DATABASE to create another.

\$75.00

SURVEYOR

The Surveyor performs many of the complex, repetitious and tedious computations encountered by surveyors, include:

- COMPUTATION OF POINT LOCATIONS
- AREA WITHIN A TRACE
- TRAPEZOIDS OF GIVEN AREA
- RADIUS FOR A GIVEN CIRCULAR AREA
- CURVE INVERSE



ON-LINE UTILITIES DISK ONE

Features:

- IS FULLY MENU DRIVEN
- LETS YOU ADD AND/OR DELETE SORT KEYS IN A PREVIOUSLY DEFINED DATABASE
- GIVES YOU GREATLY EXPANDED CAPABILITIES IN MAIL LABEL FORMATTING
- PROVIDES NINE VERSATILE MAIL LABEL FORMATS
- ALLOWS USE OF ALL SHAPES AND VARIETIES OF LABELS

MODIFY SORT KEY

Applications:

This feature of the utilities allows you to change your mind about what is important in a database you had created before. In most database, the sort keys you define when you create the original file are the ones you have to live with forever (or you can start over). Now you can sort and search on any part of any record in any established database without having to retype any information. Or you can delete any unneeded sort keys for faster operation. (Since a database must have at least one sort key in order to work, you can design your original file with only a single simple key, enter the records quickly, and later sort and search for any information as the need arises.) Everything changes these days: why not your DATABASE?

FLEXIBLE LABEL FORMAT

The built-in Mail Label Format of the ON-LINE DATABASE is very useful, but for voluminous output for a wide variety of users we recognized the need to provide additional capability. This Utility gives it! You can now combine as many as eight fields on one label. And you can accommodate any available sticky labels, any size and up to nine across.

CHANGE REPORT FORMATS

Allows changing reports already created by ON-LINE DATABASE.

RENTAL MANAGER

MONEY TREE SYSTEMS, INC.

The Rental Manager incorporates all of the features needed for rental management. The system is fully menu driven and can be operated easily by businessmen, or their office personnel, without a computer background. This system, designed and developed by a Madison property manager, has been profitably used by Realtors for two years. The Rental Manager Package includes user training software and an accompanying training manual. As with all Blue Lakes products, the system is fully supported by Blue Lakes Software.

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- CHART OF ACCOUNTS AND BUILDINGS
- ACCOUNTS PAYABLE
- LISTING OF TENANTS AND FUTURE TENANTS
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Features:

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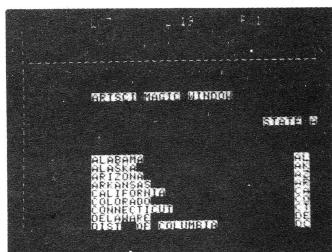
DEALER INQUIRIES INVITED.



MAGIC WINDOW

word processing system

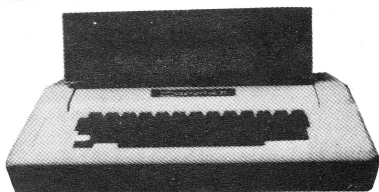
The MAGIC WINDOW transforms your Apple Computer into a sophisticated Word Processor/Text Editor. All types of documents can quickly be written, revised, edited, and printed. MAGIC WINDOW typing is so simple you can perform any editing task with a simple key stroke, from correcting typographical errors to moving paragraphs.



MAGIC WINDOW uses a new and creative software function to allow you to see 80 column paper on your video screen. Four way scrolling gives you the ability to view your full sized letter from any position.

A Closer Look

The most impressive feature of the WINDOW is the way it emulates a standard typewriter. You actually can see the edges of the paper you are typing on. This feature lets you position your text on the paper when you type it. You don't need to review your text and insert formatting commands.



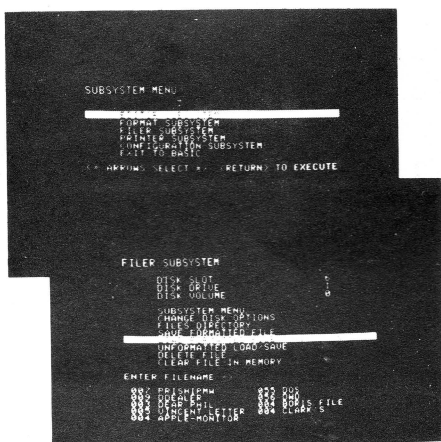
You have probably purchased one or more of the peripheral products available for you Apple (language system, lower case adapter, printer, etc.) The MAGIC WINDOW will automatically use these new products if you have them. MAGIC WINDOW will boot on 3.2 or 3.3 DOS systems. And if you have a language system it will use the extra memory.

Expandability



MAGIC WINDOW uses two types of disk storage, binary files and text files. The text file gives you the ability to load and save files that can be used by other programs. Binary files are used to store your documents, page size and tab stops quickly and completely.

Storage



With the MAGIC WINDOW you may never need to hit return. When your text touches the right margin the last word will automatically be picked up and placed on the next line allowing you to continue typing. When you reach the bottom of the page the WINDOW will jump to the top of the next page without causing any interruptions. The search function will help you find any occurrence of a word for correction or deletion.

Efficiency

Text storage, printing, and system configuration are controlled by a unique menu structure. This avoids complicated command sequences. Function selection is simple and syntax free.

Centering and justification is simplified by your being able to see text on the screen. There is no need to print out a work copy of your text.

Unlike other systems that separate the tasks of editing text and formatting for printing, MAGIC WINDOW shows you the exact placement of your text as you type it.



Along with the MAGIC WINDOW you receive:

- Full color keyboard poster showing all the keystroke commands.
- 33,000 word Webster Speller/Divider to help you spell correctly.
- 50 page easy to read manual and padded binder.
- Text file of post office approved state abbreviations for quick reference.
- Personal phone service for any problems or questions you may have.
- Lifetime media warranty.

Extras

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SPECIAL - THE APPLESOFT COMPILERS

INTRODUCTION.....	12
EXPEDITER][.....ON-LINE SYSTEMS.....	12
APPLESOFT COMPILER.....HAYDEN BOOK COMPANY.....	13
ASCOMP.....PHASE ZERO/SW DATA SYSTEMS.....	14
COMPILATION.....	16
COMPILER COMPARISON CHART.....	16

WORD PROCESSORS

INTRODUCTION.....	18
EASY WRITER PRO.....INFORMATION UNLIMITED.....	20
EXECUTIVE SECRETARY.....AURORA SYSTEMS.....	23
LETTER PERFECT.....LJK ENTERPRISES.....	24
P.I.E. (80 COL).....PROGRAMMA INT'L.....	28
SELECT.....INFORMATION SYSTEMS.....	32
SPELLBINDER.....LEXISOFT, INC.....	32
SUPERSCRIBE.....ON-LINE SYSTEMS.....	34
SUPERTEXT II.....MUSE SOFTWARE.....	36
WORD POWER.....SYSTEM DESIGN LAB.....	37
WORD STAR.....MICROPRO, INT'L.....	39
WRITE ON! II.....RAINBOW COMPUTING.....	41
WORD PROCESSOR SUMMARY.....	42
WORD PROCESSOR COMPARISON CHART.....	44

DATA BASE SERIES

DATA FACTORY 4.0.....MICROLAB.....	45
INFORMATION MASTER.....HIGH TECHNOLOGY.....	48

PERSONAL/ENTERTAINMENT

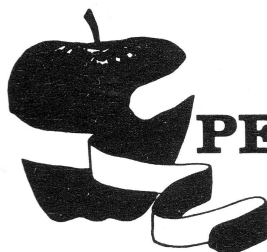
SEX-O-SCOPE.....AGS SOFTWARE.....	50
-----------------------------------	----

UTILITIES

MULTIDISK CATALOG.....SENSIBLE SOFTWARE.....	50
--	----

DEPARTMENTS

LETTERS.....	4
READER REQUEST DEPT.....	6
REVIEW REFERENCES.....	6
BUDS.....	6
HARDWARE BRIEFS.....	9
SPECIAL ANNOUNCEMENT.....	9
PEELINGS RATINGS.....	51
PEELINGS POLICIES.....	51
ADVERTISERS INDEX.....	52
SOFTWARE INDEX.....	52



PEELINGS II

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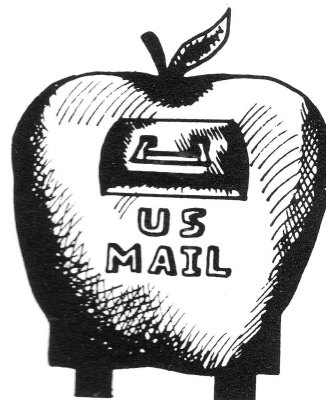
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LETTERS



Dear Sir,

I have a reader's request. I would appreciate an evaluation of Apple Graphics Utilities. I would like a comparison/rating on such programs as "The Complete Graphics System" by Co-op Software, "Magic Paintbrush 4.0" by Co-op, "E-Z Draw 3.0" by Sirius etc. Also, it would help if you would update the "P" rating on Paddle Graphics.

You have an excellent magazine. I only wish (with all the software out) that it was monthly.

Thanks,

Montgomery Lee
APO Miami

MONTGOMERY,

WE HAVE NOT UPDATED THE RATING ON PADDLE GRAPHICS BECAUSE WE HAVE NOT RECEIVED THE IMPROVED VERSION THAT CORRECTS THE PROBLEMS MENTIONED.

AS FOR MONTHLY, WE'LL DO ALMOST AS WELL WHEN WE GO TO 9 ISSUES IN 1982.

EAB

Gentlemen:

...I have just received V2 N3, the first issue delivered in my new subscription, and it looks excellent. I like your methodology, and the indexing is good -- something badly lacking in many micro magazines which are otherwise useful but not indexed at all.

I would be interested in reviews of the Apple DOS toolkit and the Lisa Interactive Assembler by Programma.

Jackie Porter
San Francisco CA

JACKIE,

April 26, 1981

I HAVE BEEN WANTING TO REVIEW LISA FOR SOME TIME; I HOPE TO GET TO IT NEXT ISSUE. INCIDENTALLY, LISA IS NO LONGER AVAILABLE THROUGH PROGRAMMA BUT IS NOW SOLD THROUGH ON-LINE SYSTEMS.

AJM

Dear Peelings People,

More space than was strictly necessary was probably devoted to Don Williams' letter complaining about Muse and SuperText (V2N3P6). I have been using SuperText for over a year. I have written a book and several articles with it, as well as a lot of letters and miscellanea, sometimes in foreign languages with accent marks, and occasionally dumping it out thru a mainframe that required additional codes.... It took several calls to Muse to get it up and running well at the beginning, but in the end it was a really splendid program. I have never been sorry I bought it, in spite of a negative Peelings review. Calls to Muse were always patiently and politely received, and queries (including some pretty dumb ones) efficiently handled. Have you (or Williams) been a bit hasty in dumping on Muse, or am I being taken for a ride without noticing anything amiss?

David K Jordan
La Jolla CA

DAVID,

WE STAND BY OUR ORIGINAL REMARKS ABOUT SUPERTEXT VER 2.0. REVIEWED IN THIS ISSUE IS THE NEW SUPERTEXT II. IT IS BETTER, BUT IT ALSO COSTS MORE. THE B RATING SAYS THAT IT IS ABOVE AVERAGE. ALSO, REVIEWS ARE HARD TO TYPIFY AS NEGATIVE. WE ONLY OBSERVE NEGATIVE ASPECTS AND POSITIVE ASPECTS OF A PROGRAM. IF THERE ARE MORE NEGATIVE ASPECTS, THE READER DRAWS HIS OWN CONCLUSIONS.

AS FOR PUBLISHING MR WILLIAMS LETTER, WE DON'T PUBLISH LETTERS IN ORDER TO "DUMP ON" PUBLISHERS. WE PUBLISH THEM AS A FORUM, ON A SPACE AVAILABLE BASIS, FOR READERS TO DRAW THEIR OWN CONCLUSIONS ABOUT OTHER PEOPLE'S EXPERIENCES.

AJM

(EDITOR'S NOTE: The following letter is in response to a review of Arithmetic Skills (Edu-Ware) in the Mar-Apr issue. We couldn't squeeze it in last issue.

I have a lot of respect for Sherwin, having visited him twice in the last 7 months. Nevertheless, I stand by my original statements. Herewith is his letter in its entirety. He has expressed the hope that it will start a forum of discussion on the topic, and any letters in response to it will be forthwith published.)

AJM

Dear John,

The time has finally come when we have to take issue with one of your reviews; not for the factual content, or for your PR letter rating, but for a viewpoint which you expressed in the review. I refer specifically to the statement that:

"...AS is also devoid of the fun aspect that makes computerized learning human and inspiring. inspiring some excitement and fun..."

It is those statements which cause us some real difficulty, and the refutation of which, is the basis for this response.

Before proceeding further, it should be made clear that the choice for the reenforcement schedule which has been provided in Arithmetic Skills was deliberate and planned. It flows from our basic philosophy about the most appropriate structuring of CAI materials, and not from any lack of artistic, or programming forethought.

Our rationale proceeds along the following line of reasoning:

Many users will find, in programs developed for the young (primary school) learner, reenforcement which uses devices such as graphic smiling faces, the reward of playing a game, or "cute" sound effects. It has been the contention of Edu-Ware, in all of its instructional programs, that such devices are at best worthless, and at worst counter-productive. Such an assertion needs some explanation to develop an understanding of this position.

Almost all would subscribe to the assertion that for learning to occur, there must be some motivation on the part of the learner. This motivation can come from the actions required to learn, or from the perceived value of the newly learned material to the learner.

An example of the former case might well be illustrated by the actions required in learning how to swim. The setting of the beach, or swimming pool, the presence of the teacher, or the friend teaching the skill are all motivational factors which make the act of learning attractive.

The skill of swimming has itself some intrinsic value. It is an activity from which pleasure can be derived, which is a valuable social tool, and which has usefulness in the maintenance of the participant's physical health and well being.

Conversely, many learners see little or no value in gaining skills in American History, or English Grammar. They are unable to relate these skills as having value to them, other than in the act of demonstrating their learning. For example, if one receives "good grades," then parents are pleased, academic awards may be obtained, and entrance to college is made easier.

Placing the emphasis for reward on the act of learning rather than on the ideas learned would seem to place the emphasis on an aspect of the task with less value than the task itself.

It is well recognized that two kinds of learning may be identified; acquisition learning and maintenance learning. Acquisition learning is the initial learning of some new behavior or skill, while maintenance learning refers to that learning which is continuing and by which skills are demonstrable after long periods of time have elapsed. An example of acquisition learning is "cramming" for an examination and then forgetting all the material once the exam is completed. An example of maintenance learning, on the other hand, is the skill of riding a bicycle which may be learned in childhood and maintained without practice into the adult years.

Since the skills involved in ARITHMETIC SKILLS are skills we wish the learner to maintain and build upon over long periods of time, it seems quite important that it is the maintenance of those skills which is reinforced and not the simple act of acquiring them. Thus, the reinforcement is directed at long-term skill maintenance, rather than acquisition learning.

For these reasons, we have rationalized not putting in the "cute" reinforcement which has been anticipated by many who purchase our programs. This is not to say that our programs please all users; there are many in the teaching profession who evaluate the programs in the same way as you have, seeing this lack as detracting from the overall value of the programs.

I would also hasten to point out that this position is not universally accepted, or endorsed among our own staff. Therefore we would welcome responses from your readers as to their views in regard to this matter.

In the mean time keep those excellent reviews coming.

With warm regards

Sherwin A. Steffin
PRESIDENT
EDU-WARE SERVICES, INC.

READER REQUESTS

We have not had a deluge of requests for specific programs to be reviewed. Evidently, everyone is satisfied with the programs we have been selecting. However! How many magazines ask their readers to vote on which programs are to be reviewed? Pick up that postcard now and let us know what programs you need to see reviewed! Your input is what will make Peelings II useful and responsive to you, the subscriber.

PII

REVIEW REFERENCES

REVIEW REFERENCES

As promised, any reviews of software written by Peelings II authors will be noted here. POOL 1.5, co-authored by Howard de St Germain, was reviewed in Softalk, June 81, page 50.

BUDS



BUDS

Firmly planned for next issue are reviews of BASIC and memory editors: A.C.E., M.P.E., Power Editor II, the Apple Monitor Extender, and others. Also to be reviewed are more Forths: Forth II (Softape), Forth 79 (MicroMotion) and others. Follow-up reviews will be done on Select and Spellbinder, and a new word Processor written in Australia (Pen-Ultimate) which could not make it into this issue.

Programs that we will soon have and may be reviewed are Visicalc 3.3 and Invoice Factory.

HEADER EXPLANATION

At the beginning of every review is a list of data about the program. It is, in order:

Author
Publisher Name
Publisher Address
Publisher Phone
Retail Price
Language Written in
Hardware requirements
DOS used
Copy Protection

Peelings Rating
Reviewer name

The Peelings rating is explained elsewhere in this issue.

Henceforth, the medium will be assumed to be diskette unless otherwise noted.

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Spellbinder's capabilities are proven in the field. The system runs on computers with CP/M® or on computers with OASIS®. For a demonstration, call your local computer dealer. Or call us right away.

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OASIS is a registered trademark of Phase One Systems.

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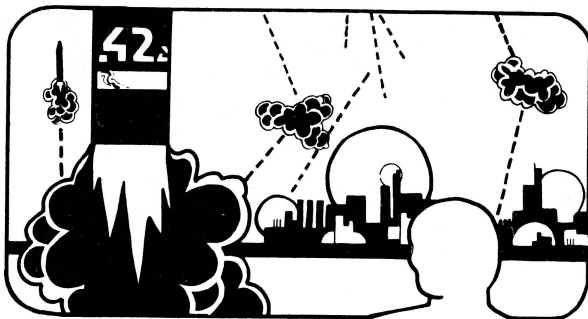


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ON-LINE systems

PRESENTS



Missile Defense

An Apple Arcade

Three Great Products for your Apple II or II Plus



\$29.95

In this arcade-quality action game you command the Nation's missile defense center to defend against a foreign missile attack. As missiles drop from the sky, you must shoot them while trying to protect your six cities and three missile bases. An automatically escalated skill level ensures that the better you get the tougher Missile Defense gets!

- Fast machine language. Hi-Res animation and sound!
- Rapid fire capability - mark and shoot at many targets simultaneously!
- Works great with keyboard only, paddles or joystick!
- Separate controls for all three missile bases!
- Bonus cities awarded for high scoring!

WARNING: This game has been known to cause addiction and should be used with extreme caution!!!

THRILOGY

OF GAMES

\$24.95

The object of BUSTOUT is to bust through the wall of bricks to get behind the wall and eliminate the wall of bricks. Behind the wall, eliminating the bricks is much faster. The ball starts slow but will soon go faster than you may be able to handle also when you get behind the wall, your paddle will get smaller! A beginner's mode is provided for less experienced players.

BUSTOUT loads Integer BASIC and transfers all important subroutines into Assembly Language. Since BUSTOUT utilizes both Hi-Res pages and Assembly Language programming, its graphics are very fast and very smooth.

The object of SMASHUP is to run over all of the dots on the track before the computers car smashes into your car. Beware! He is out to get you!

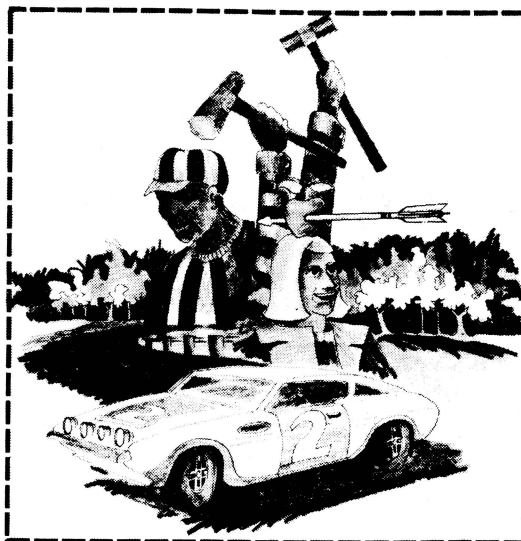
Begin the game by choosing one of the four skill levels and then slip behind the steering wheel of your car. Get the feel of the throttle, and then really start to rack up the points.

SMASHUP loads into Integer BASIC and then transfers all important subroutines into Assembly Language, making it's Hi-Res graphics very fast. SMASHUP has unique sound effects also in Assembly language making it even more lively.

You are WILLIAM TELL. You only have five arrows with you and to get a perfect score you must shoot the two apples off the tree and you must also shoot the apple on the boy's head three times. Don't aim too low! You might kill him and not receive any points!

The flight of the arrow depends on the tension on the bow when the arrow is launched. After each shot, the boy will comment about your shooting. Did you kill the boy? Well push the paddle switch and start over.

WILLIAM TELL is an Integer BASIC game using Hi-Res graphics and is fun for all ages.



Thrilogy

SABOTAGE

\$24.95

In this innovative game, you take command of a powerful gun base to shoot helicopters and aircraft out of the air. Beware! The opposing have plans to Sabotage your base. Can you defend yourself from the rain of bombs and paratroopers and keep your base in action?

- Written in Machine Language - quick animation and sound effects.
- Hi-Res color graphics.
- Works great with paddle or keyboard control.
- Conventional and controlled missiles.
- Rapid fire capability - mark and shoot at many targets simultaneously.
- Automatically escalated skill level - the better you get, the tougher "they" get.



Sabotage

All of these Arcade Games are available now at your local computer store. They will run on any 48K Apple II or II Plus with a disk drive. To order direct, send the purchase price plus one dollar for shipping to: **ON-LINE SYSTEMS • 36575 Mudge Ranch Road • Coarsegold, CA 93614**

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209-683-6858

Dealer Inquiries Invited

Most publishers now work through dealers and many refuse to accept mail order requests. You should contact your dealer if you are interested in looking at a program. The name and address of the publisher is given for reference only. If you call them, most publishers will be glad to give you the name of the nearest dealer to you that carries their product.

PII

HARDWARE BRIEFS

HARDWARE BRIEFS

Peelings II has obtained, for various purposes, some hardware recently that we'd like to comment on.

EPSON MX-80. This is truly and fine printer for the money. All the good things you have heard are true. It produces amazingly good print and works without much fuss. It is highly recommended.

LAZER LOWER CASE PLUS+ and KEYBOARD PLUS. This system works well but has some problems. The installation requires fitting a PC board onto four separate sockets of the Apple II motherboard. Since, there are some deltas in the centering of these motherboard sockets during manufacture, your LAZER systems equipment may require some "stomach turning" pin bending. Further, you are prevented by the design from seeing whether the back row of character generator pins are seated properly. The

system is complex enough to install that only the stout of heart and experienced should attempt installation themselves. We recommend you let your dealer do it.

The TG products Joystick (Richardson TX) is very well done. It is nicely made, is self centering, and has BIG red buttons.

PII

SPECIAL ANNOUNCEMENT

MORE PEELINGS!

Peelings II is pleased to announce that our growth has made it possible to increase our publishing schedule. THERE WILL BE 9 ISSUES of PEELINGS II in 1982!! The publishing schedule is:

Jan	Apr	Sep
Feb	May/June	Oct
Mar	Jul/Aug	Nov/Dec

Now, every six weeks or so, you will get the latest on Apple II software. Subscription rates will have to be changed accordingly. Starting in 1982:

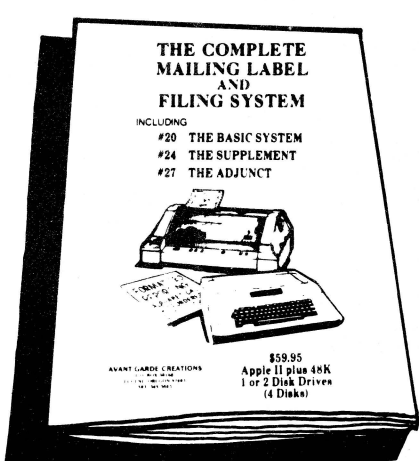
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WRITTEN FOR THE LAY PERSON

(12-6pm / 7 days)



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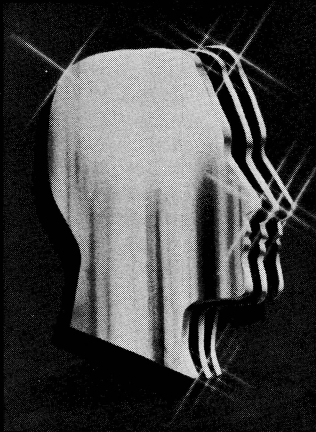
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Notes:

All original subscribers who subscribed before 1 Jan 81 and who have not let their subscription lapse are entitled to renew at the third class rate and have Peelings II mailed 1st class.

All current subscriptions will be pro-rated upon the transition into 1982 and a new expiration date computed. Any renewals between now and 1 Jan 82 will be pro-rated on a per issue basis and a new expiration date computed.

BACK ISSUES, ALL OF PEELINGS

We have decided NOT to publish "All of Peelings, Vol 1". Instead, reprints of individual articles will be made available. This will save you money by allowing you to get just what you need, and it will allow us to get on with other projects. The per review price will be determined later, and a formal announcement will be in the next issue.

IMPORTANT NOTICE

Back issues V1: #1, #2, #3 are no longer available, and will not be reprinted in their entirety because of the decision above. Limited quantities of V1 N4 are on hand. All individual issues of Volume 2 are available.

PII

APPLESOFT COMPILERS

EXPEDITER II

INTRODUCTION

The first thought that may enter your mind "is why a compiler?" After all, you have Applesoft and that does everything you need. If you read the advertisements they all claim that compiling will increase the speed of execution from 2 to 20 times. Now that's impressive and that HIRES game you wrote would be a little better if it ran faster. It's good, but not quite as good as the machine language games that are on the market these days. Really, 20 times faster, WOW! Let's see, where was that address, again?

Now, that you're convinced you need a compiler, let's take a closer look at the three that are presently available. Rumor has it that a fourth one will be marketed by Microsoft in the near future, but it's hard to review a rumor.

All three compilers reviewed do approximately the same thing, perhaps in slightly different ways, and that is convert Applesoft programs into 6502 machine language code with CALLs to ROM Applesoft. Besides the obvious speed advantage of running machine code there seems to be agreement on others; compiled code protects against theft or unauthorized modification of your code, can be made uninterruptable (only by RESET), and may be CALled by Applesoft programs or other machine language modules. The first two, even if there were no increase in speed, may be reason enough for some potential users.

A definite disadvantage which must be considered is that all compiled code will be two, three, or even more than four times longer than the original Applesoft program. If you are using both HIRES pages and want to keep DOS active this could limit the initial Applesoft program size to 4 or 5K. That depends on the compiler, of course, and how it allows you to use memory.

All three compilers place some constraints on the program, aside from those normally required by the Applesoft interpreter. These can be real disadvantages, in some cases, and I will point these out in the individual reviews. Other restrictions are reasonable in that the command would be meaningless in the compiled environment; i. e., LIST, DEL, STOP, CONT, etc.

The protection method depends on the compiler, also. Two use a hardware "key" that plugs into the game paddle port; an important consideration, and one uses a locked disk.

With all these generalities in mind let's go on to the individual reviews.

by S. Einstein & D. Goodrow
On-Line Systems
36575 Mudge Ranch Rd.
Coarsegold, Ca 93614
209 683 6858
\$99.00 diskette
Machine Language
48K RAM, Applesoft ROM, Disk II
DOS 3.2 or 3.3
Locked

PR=P
Edward Burlbaw

USING EXPEDITER] [

To compile a program simply load it into memory and then with the compiler disk in the drive type BRUN EXPEDITER. After some time (10 seconds or so) you will be presented with questions regarding options and the program in memory will be compiled. The compiled version may then be saved as an Applesoft program of one line with the binary appended or a straight binary program.

MAJOR OPTIONS

The following options or parameters are available and must be selected at compile time.

- Program Counter
- Local Variables
- Global Variables
- String Length
- Line Trace
- Reserve Memory
- Display Addresses

The program counter allows you to choose the start address of the compiled code. This is a necessary parameter to allow compiling subroutines that must reside in memory with other programs.

The local and global variables options let you choose the upper limit of the variable space. Local variables are those used only within the routine itself. Most variables fall into this category. Global variables are those shared by several routines very much like COMMON variables in FORTRAN.

Strings are not allocated by the compiled program in quite the same way that Applesoft uses them. It is because of this feature in Applesoft that the notorious "garbage collection" process must take place. Expediter] [allocates all string variable space at compile time and so must designate a maximum length for them. This makes unnecessary the use of X=FRE(0) statements in the code.

Line tracing makes the compiled program easier to debug because of the line oriented error messages that it generates and also permits CTRL-C interrupts. It makes the compiled program longer and slightly slower. It is suggested that this option only be used during debugging and that the program be recompiled without it for the final form.

Reserving memory is an important feature if one is using HIRES graphics in the program. Obviously, one would not want the compiled program to use memory reserved for those pages. Upon using this option the compiler will generate code to jump around the reserved range of memory.

Display of the addresses of each line during compile can be selected. The Applesoft line number is displayed along with the HEX address of the code representing that line.

USE WITH A PRINTER

The compile time statistics will be printed on your printer if it is enabled with the PR# slot command before compile. If your printer requires a driver routine, the \$300 area remains intact.

DOCUMENTATION

Expediter][comes with 16 full sized pages of thorough documentation. There are suggestions for using Applesoft programs as subroutines to other programs which discusses the correct use of global variables and gives examples of same.

LIMITATIONS

There are several Applesoft commands which are unsupported. Such commands as LIST, DEL, and others would have no meaning in the machine language environment. The only real restriction is that every FOR statement must have a unique NEXT associated with it. DIM statements must precede all references to variables and must have integers not variables as their arguments. These restrictions may entail some rewriting of the Applesoft program but that will usually be minimal.

Expediter][uses the area from \$800 to \$1100 for its own routines. This is also a restriction if the user has routines which occupy that area in memory.

PROTECTION

Expediter][is furnished on both a 3.2 and 3.3 diskette (2 disks). If you use one DOS exclusively, the unneeded diskette may be exchanged for another copy of the DOS used. If a disk fails within 90 days of purchase a replacement will be provided free of charge. After 90 days the charge is \$5.00. The locked diskette is the only protection mechanism used.

If you wish to sell software compiled by this compiler you must obtain a licensing agreement from On-Line Systems.

APPLESOFT COMPILER

by Jonathan Eiten
Hayden Book Co
50 Essex Street
Rochelle Park, NJ 07662
201 843 0550
\$200.00 diskette
Machine language
48K RAM, Disk II, Autostart ROM
Applesoft ROM
DOS 3.2 (3.3 version soon)
Locked

PR=P
Edward Burlbaw

USING THE HAYDEN COMPILER

To compile a program the hardware "key" must be installed and the compiler disk booted. The compiler will ask for the name of the program to be compiled and advise when to switch disks if on a one drive system.

COMPILER OPTIONS

This compiler has perhaps the fewest options of the three. All options must be specified in a REM! line in the source code, unless the default options are desired. They are as follows:

STOCK MARKET UTILITIES

4 STOCK MARKET PROGRAMS ON DISK

Four programs provide a complete programming system for entry and storage of stock data, data correction, autoscaling Hi-Res graphical display of performance, and building historical data files electronically (program to download data not included).

STK.1 (39 Sectors) provides complete utilities for manual entry of stock data. **Features:** names stored alphabetically by exchange, easy addition and deletion of names, automatic prompting and extensive error trapping for data entry (date, volume, price), numerous entry points for data correction, all data displayed prior to updating stock files with further option for data correction, input historical data to a single data file, display contents of individual stock files from disk, option to reduce files to last 260 entries for high-res graphics. All data files are fully accessible.

DATA CORRECTOR (31 Sectors) used to correct and rewrite stock data files. **Features:** option for general data correction - correct any entry, option for stock splits - all prices and volumes prior to split scaled by split ratio (transaction dollars constant) to provide continuous momentum and price curves, also correct for incomplete updating due, for example, to a power outage.

EVAL (22 Sectors) provides comparative evaluation of stock performance. **Features:** synchronizes NYSE index ave with first stock entry, option to evaluate all stocks automatically or just one, simultaneous high-res display of momentum, price, and price relative to NYSE index, auto scaling graphics, numerical figure of merit for performance relative to NYSE index ave.

MICROQ (12 Sectors) is used to build historical data files electronically by converting downloaded stock price data obtained from Compuserve's Micro-Quote financial data base to data files compatible with these programs.

Programs written by H. S. PILLOFF.

Requires Apple II,™ ROM Applesoft,™ 48K and Disk

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Base
Ceiling
eXternal
Lomem
Strings
DOS

The start address is specified with the Base option. Lomem and Ceiling are the local LOMEM and HIMEM. S denotes the start of the string pool, D initializes the DOS error vector and X includes the external library furnished on the disk. The ability to turn off the X option enables the compilation of subroutines individually without the library attached. In general, the default options are appropriate for simple applications.

Protection of the HIRES screens is implemented with the base command similar to the address command in ASCOMP. Again, one loses 4K of available memory (as well as the HIRES page) by starting above the HIRES page.

USE WITH A PRINTER

There is no option to allow use of a printer to save the compile time generated data.

DOCUMENTATION

There are 31 pages of documentation included in a loose leaf notebook. All options are explained with ample examples covering the more esoteric uses; i.e., modularization and variable sharing. There was text missing on some of the included figures.

LIMITATIONS

Because of the way that this compiler handles strings it does not automatically do "housecleaning", so the program must include the FRE() function if your string pool is likely to overflow. This is probably a good idea in an Applesoft program, as well.

The documentation claims that ONERR statements are supported. In one use that I have for them, I was not able to get the program to work properly until I removed the statement and found a different method to do the job. Here again, depending on your application, this could be a major disadvantage.

PROTECTION

This compiler is currently available on 3.2 only. There is NIFFUM included on the disk to use for creating 3.2 files from 3.3 files until the 3.3 version is available. There is also included on the disk a Visi-Copy program for making backup copies for your own use. If the original disk is damaged it will be replaced for \$20.

The hardware "key" protection mechanism is a source of some frustration with this compiler, also. It is further aggravated by the fact that the entire compiling process must be gone through before you are told that the key is not inserted properly; that means that you must boot and swap disks twice before you know for sure that it will work. Perhaps my game port is more worn than

others, but I wasted a great deal of time wiggling the "key" and rebooting. May I suggest a test program that could be run to verify that the "key" is properly inserted or maybe just aborting the boot if it were not.

ASCOMP

Dan Davidson
Phase Zero Software
2509 N. Campbell Ave.
Suite 130
Tucson, Az 85719

\$85.00 (\$134.95 in Sept)
Machine Language
48K RAM, Applesoft ROM, Disk II
Locked

PR=P
Edward Burlbaw

ASCOMP 2.5 is perhaps the easiest of the three compilers to execute and has the most options. BRUNning ASCOMP will install it and thereafter it is accessed using the & command. Providing the hardware key is installed, the program in memory will be compiled.

OPTIONS

There are two ways to invoke the options. One is on the command line and the other is by REM \$\$ statements within the program. These options are listed and briefly described below.

Address	Parameter
Origin	Entry
Disk	User
List	Return
CTRL-C	
Numbers	
Trace	
Indices	
LOMEM	
Subroutine	

The Address command causes the object code to be generated at the address specified. Origin specifies the address at which the object code will be run.

Disk specifies that disk-intermediate compilation should be done to allow longer programs to be compiled.

List causes a listing of the program to be output. In addition to the normal Applesoft listing, each line is preceeded by a HEX number specifying the location in memory of the start of the compiled code which represents that line. CTRL-C causes extra code to be generated for each statement to enable CTRL-C interrupts. Numbers

adds the code so that correct Applesoft line numbers will appear if the compiled program halts for any reason. Trace allows the use of the TRACE command to work properly with the compiled code.

Indices creates code that checks that each index is within the specified range for that array.

Lomem operates exactly like the Applesoft command by the same name.

Subroutine specifies that the compiled program will be used as a subroutine with an Applesoft program.

Some of the previously described commands may be used with the REM \$\$ statement within the program. The remaining commands from the right column must be used with the REM \$\$ option.

Parameter allows parameters to be passed from the Applesoft program (compiled or not) to a machine language subroutine. This is similar to FORTRAN subroutine calls and would be used instead of GLOBAL variables in other schemes.

Entry causes a compile time message which prints the HEX address to CALL to enter the program at this point.

User is similar to CALL except that it returns a value to the CALLing routine.

Return is used within the subroutine to specify the value to be returned to the user command.

USE WITH A PRINTER

Printer use is supported by activating it before using the & to begin compiling. There are no specific instructions for use of a non-standard driver but that could probably be implemented because of the greater control of memory usage one has with this compiler.

DOCUMENTATION

ASCOMP 2.5 comes with 18 pages of documentation. Every option is clearly explained and examples of the more complex ones are given. While the print quality is not as fancy as the other two manuals, I understand that we received a preliminary copy. I do not consider this a problem or handicap.

LIMITATIONS

ONERR GOTO is not supported. If you have a program which relies heavily on the use of this statement this could require major rewriting before compilation. The reservation of the HIRES graphics memory can only be done by starting the program above the pages in use. This reduces the memory available by 4K in addition to HIRES page 1. This could be important if your program already requires a shoehorn to get it into memory.



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LAS CRUCES, NM 88003
(505) 522-1482

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COMMLOGG™ IS THE ONLY...

... program that will display time and charges while you talk on your long distance calls. Think of it. If you have a Hayes Micromodem and a 48K Apple II, you can let COMMLOGG dial all your calls and tell you how much you are paying minute by minute. When you hang up, you get total charges for the month, date, time, duration, who called, the charge, and a billing code.

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This is great for businesses, small and large, that need to know how much each employee is spending on his calls. Know ahead of time when you've spent your budget for the month.

COMMLOGG handles most telephone exchanges, holiday rates, and has an auto-dial directory. It is modifiable for your particular need.

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See your dealer or call us. Diskette only (Applesoft ROM or Language System): \$39.95 ppd.

PROTECTION

ASCOMP may be BLOADED and BSAVED as any other binary program. Its protection comes from the use of a hardware "key" which plugs into the game port. While this method simplifies the use of the compiler it also requires that any other use of the port is restricted during compilation. It also seemed that the "key" was very particular about how it was inserted and often required several attempts at installation before the compiler would run. This was not so bad as it was easy to restart the compiler (&) but I disliked all the wear and tear on the game port socket and it was not clear if it would ever work with any socket extender.

No mention is made in the documentation about "key" replacement if it fails. Neither was any mention made about commercial use of the compiled code.

Southwestern Data Systems is now handling ASCOMP and will honor Phase Zero's \$85 introductory offer through August.

TEST PROGRAMEXEC TIME IN SECONDS (# BYTES DECIMAL)

	<u>APPLESOFT</u>	<u>HAYDEN</u>	<u>EXPEDITER</u>	<u>ASCOMP</u>
FOR-NEXT (100,000)	108(25)	81(646)	115/106(3030)	94(2134)
PRINT	28(30)	27(659)	27 (2437)	27(2147)
ARRAY (REAL VARS)	21(63)	6(945)	6 (2488)	11(2275)
ARRAY (INTEGERS)	26(70)	8(1069)	8 (2491)	15(2270)
SIN(I)	26(34)	25(663)	25 (2441)	25(2159)
SQR(I)	49(43)	48(695)	48 (2466)	48(2170)
HPLLOT (10000)	34(78)	15(969)	18 (2520)	20(2241)
PLOT (10000)	33(79)	12(842)	17 (2575)	20(2240)
IF-THEN	92(64)	9(561)	8 (2439)	19(2189)
TEXT SORT	8-9(1817)	1-2(5168)	10/8(5151)	*
HIRES PROGRAM	131(801)	58(3318)	55 (4707)	65(5180)

COMPILATION

Now that you have heard a little about each of the three compilers, here are some statistics pertaining to increase in run speed. The included chart contains abbreviations to identify the test programs more fully described in the text. In general, a test program consisted of a loop, usually FOR-NEXT, with the expression included within it. Loops were chosen to be of sufficient length to make timing accurate, but not too long.

From the table you can get an idea of the increase in execution speed of each of the compilers with different Applesoft expressions. None of the compilers claim to increase the efficiency of the math functions and it can be seen that none do. The comparable PRINT times can also be understood in that the machine code CALLs the ROM or monitor routines for outputting. Where two times appear for Expediter, the longer one is with line trace enabled.

The TEXT SORT program was an optimized Applesoft program sorting a 2K TEXT file. The performance of the Hayden compiler is phenomenal. I was unable to get the ASCOMP compiled program to run without a SYNTAX ERROR.

The HIRES program was fairly simple and moved some HPLotted lines about the screen. The increase in speed is seen to be comparable to the HPLLOT increase.

While some of the increases do not appear that great, it must be remembered that these programs were quite short and the claims are that the advantage increases with the complexity of the program.

CONCLUSION

From my testing and use of the three compilers I cannot say that I found a clear cut favorite. The Hayden compiler has a slight time edge over Expediter][. Both seem to be consistently faster than ASCOMP. I dislike the necessity of the hardware "key" but ASCOMP makes it easier to test for correct installation than does the Hayden. Expediter][takes a long time before it starts compiling and ASCOMP is accessed with a simple "&" command.

From looking at the lengths of the compiled programs, it can be seen that one would easily run out of memory with the ASCOMP or Expediter compilers and long programs. One really needs to write programs with the intention of exploiting a compiler.

The financial approach may settle it for most, though. The Hayden and Expediter compilers are so close in performance that I doubt one could justify the \$101 difference in price. This is not to say that ASCOMP, at \$85, with its few more options might not be satisfactory to others.

If you have been using one of the compiled languages such as FORTRAN, you will find that this generation of Applesoft compilers will require much more "babying" than you are used to. It's not so much that they are fragile, but that you really need to write programs with the intention of exploiting the compiler that you have. Again, rumor has it that the Microsoft compiler will be an optimizing compiler and should produce much cleaner and shorter code.

CRAE 2.0

A FAST CO-RESIDENT APPLESOFT EDITOR FOR APPLESOFT PROGRAMERS, NOW PERFORM GLOBAL **CHANGES/FINDS** TO ANYTHING IN YOUR PROGRAM. OTHER COMMANDS INCLUDE: RENUMBER, APPEND, QUOTE (COPY), LIST (OPTIMIZED), MODIFY (SINGLE LINE), AUTO LINE NUMBERING, FORMATTED MEMORY DUMP, HEX/DEC CONVERSION, FREE SPACE, AND ABILITY TO ENTER MONITOR COMMANDS. CRAE 2.0 IS COMPATIBLE WITH NEIL KONZEN'S PROGRAM LINE EDITOR, REQUIRES 48K RAM APPLESOFT ROM AND DISK.

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CRAE on disk with 20 page manual
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CRAE's powerful renumber and quote function now on two 2716 EPROMS.

EROM #3 w/manual
\$34.95

EROM 1, 2, 3
\$99.95

ALL EROMS REQUIRE APPLESOFT ROM AND ROMPLUS+ AND ARE COMPATIBLE WITH NEIL KONZEN'S PROGRAM LINE EDITOR.

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WORD PROCESSORS

FOREWARD

Some of the following is repeated from the Nov-Dec 1980 issue which featured word processors. Since that issue, word processors for the Apple II have come a long way. Some people have scoffed at the primitive word processing capability of those word processors, but remember that this is a young industry and programmers did the best they could within the limitations of the Apple II, known programming "technology" and available development tools.

The word processors that were previously reviewed are listed in the software index found in the back of this issue. In the eight months since that issue, some of the word processors have held their own and others have become technologically obsolete. Most notable of the latter is Apple Writer. Apple Writer does not formally support a lower case adapter, shift key modification, word wrap around, tabbing, 80 column version, standard text files, printing of any single page, or a preview mode. Easy Writer Standard is better, but it uses files peculiar to it and also does not support lower case adapters or global search and replace. Scribe, P.I.E. 40 col, and Magic Window can hold their own with all but the most expensive and sophisticated programs like Word Star.

INTRODUCTION

Text editors/word processors (TE/WP) are one of the most sophisticated types of programs available for a microcomputer. If they are to be considered among the best, they must run in machine language. The task of writing a bug free program that handles characters in the desired fashion is major; hence the cost of these programs is high.

Since programs of this type are so complex, the evaluation of them has to be based on other than the effort of writing and complexity of the code. Nowhere is failure of the product more apparent than in a text editor. Few are released that do not work as specified. So what are we to base our evaluation on?

Fortunately (or unfortunately depending on your view point) the reason for the number of different brands of TE/WP's for the Apple II is a different attitude or philosophy about how such a program ought to work. (Evidently a dozen or so major and minor WPs in the Fall of 1980 did not saturate the market. Now there are probably more than two dozen.) Some authors like a "live screen" or hate imbedded format characters and so on. Nevertheless, there are legitimate standards on which to base the examination of TE/WP's.

This objective standard will be divided into three parts:

1. Execution
2. Documentation
3. Usage standards

"Execution" has to do with the manner in which the program carries out its goals as stated in the manual, and overall user interface. Speed is important. The "speed" of a TE/WP determines its ability to stay ahead of the writer no matter how fast he types. "Facility" is related to the human factors in operating the program. For example, the user may be forced to go through a confusing and tedious process to perform a task. As a result, he/she tends to avoid that operation and self imposes a limit to the power of the program. Too much of this causes the user to consider the use difficult despite the power claimed by the author. Another consideration is "Thinkability." How easy is it to compose at the keyboard without having to jump in and out of various modes? Finally, the ease and power of the printer/formatter section is important. Format characters should not interfere with proofreading, be readily changable, and be immediately understandable as to their impact on the text.

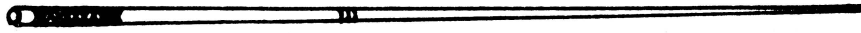
Documentation is a major part of a TE/WP. Because of the design of the Apple II keyboard and the fundamental fact that the screen area usually dedicated to prompting the user is now reserved for text, a menu driven TE/WP is generally impractical without devoting large areas of the screen to key legends. Command driven is the opposite and usually preferable choice. Therefore, the link between this abstract command structure and ease of use must be a very clearly written instruction manual. Few WPs in 1980 had clear and helpful documentation written by a professional writer. This is changing.

The best set of usage standards this reviewer has yet seen are by David Lingwood in the September 1980 Call A.P.P.L.E. This is the magazine of the Apple Puget Sound Program Library Exchange (for which there is an advertisement in this issue). It is a rather complete set of specifications setting objective standards for the features of word processors. These standards are too long to reprint here, but they serve as a basis for evaluating the software in this section.

Since the last evaluation of word processors, it has become clear that many of the new generation of WPs are aimed at secretaries and non-technically minded people. These programs are characterized by a simpler command structure and high production values in the documentation. It seems that some people who think nothing of using a shift key on a typewriter balk at the CTRL key on a computer keyboard. The price paid for avoiding the CTRL key is a certain clumsiness and lack of thinkability in the program. Such features determine whether a word processor will suit your needs or not. Finding a good word processor is more a matter of finding one that suits your personality, has all the important features, and has good documentation than anything else. At the end of this section, in the wrapup, I will recommend three.

As for "important features," there are several items that a good word processor should have that you should pay particular attention to.

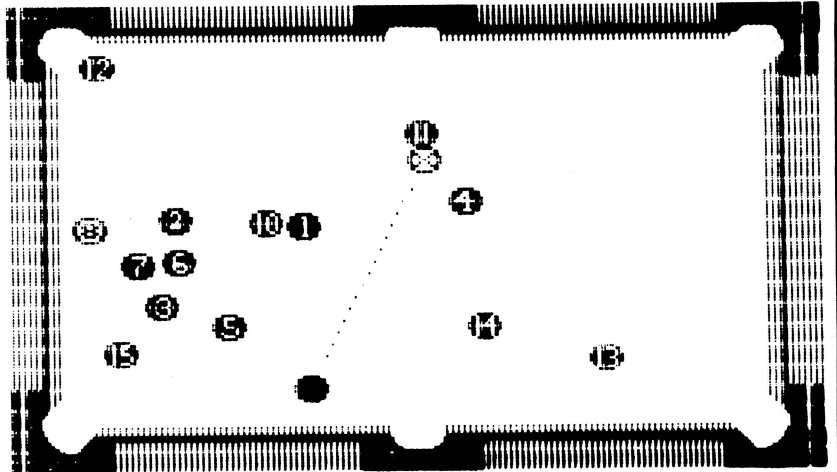
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We close this section with some vocabulary.

Installation. The process of configuring the program to your system. See Sysgen below.

Imbedded Format Characters. Specially formatted symbols that the printer section recognizes and which control the appearance of the output.

Imbedded Control Characters. The standard set of ASCII characters generated with the CTRL key. Some programs indicate these in the text as inverse for either printer control or for source code entries that need them.

Line oriented. Text is entered into a buffer which is given a line number. The data is not entered into memory until a line has been modified and a carriage return hit. An example of this is the editing of BASIC programs on the Apple.

Live screen. A character is always entered at the cursor position when a character is struck. Editing and cursor moves are done with CTRL commands preceeding the character. The alternative to this is the necessity to enter a new mode which allows, for example, cursor moves with the I,J,K,M keys.

Screen oriented. Characters on the screen are direct representations of the data in memory. Changing a character on the screen changes the text in memory.

Sysgen. Short for "System Generation." A program that, under user prompting, initializes and saves system variables (like printer slot number, lower case availability etc.).

Text Editor. A computer program for the editing and entry of text with a computer.

Turnstile displace. The process of moving characters all at once by a process similar to people in the winding lines of turnstiles at amusement parks.

Word Processor. Generally considered a text editor plus the ability to output and format text. There is some disagreement on the distinction between a word processor and text editor.

PII

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INTRODUCTION

Easy Writer Pro(fessional) is an enhanced, 80 column version of the original Easy Writer. (See PII, NOV-DEC 1980) As the name implies it is a "grown up" word processor. It has some nice features, but it also has some flaws.

SPEED BY ANY OTHER NAME

EWP has the "hurry up to wait" syndrome. It has a fantastically fast disk access, then you wait long seconds for the command processor to react. You must be patient, for impatience will cause you to strike another key trying to make something happen. It does: disaster. Files were accidentally lost.

Let's talk about the editor. It is one of the slowest in reacting to character input and editing commands of any of the word processors -- in the class of WRITE-ON! and Word Power. This is due to the fact that EWP runs under Forth instead of machine language. However, there is a type-ahead buffer and no characters are dropped at any typing speed.

The input style is free form with no carriage return until the end of a paragraph which is then marked with an <-. The screen is always live which is essential for keyboard composition. You can gobble characters at the cursor with a CTRL-D and pop them back out again if you make a mistake with CTRL-I. (A feature not seen since AppleWriter.) In insert mode, CTRL-F, the cursor stops blinking to tell you are in insert mode and there is full word wrap and turnstile displace of the text. The cursor backs up nicely from the start of a line to the end of one above. This is clean and nice. The problems are: it is difficult to undo an inadvertent CR. If you have two partial lines adjacent vertically to each other and you want to glue them together (P.I.E. uses ESC CTRL K), you have to go through an elaborate block move for a few words, or retype the text. Further, a blockmove leaves markers in the text which prevents one from easily going to the end of the text with the kluged CTRL-C.

Text can be scrolled up and down and even right and left if you chose to have the column width wider than the 80 col display. A down

scroll command moves the cursor down one line temporarily making the user think he hit the wrong key, then waits a long time convincing him that he did, and then just when he tries again, the scroll starts. A word processor should display its intentions clearly.

Tabs can be set easily and quickly, but the tabbing process is painfully slow. You sit and watch the cursor lazily slide over.

We found a bug in the Search and Replace function. If you ask for just some words to be altered, and there is just one of that word, the keyboard will hang after the replace. Hitting RESET recovers and the file is intact, but other flaky things crop up. It's best to save the file under a new name and reboot. The search can be linked to files not in memory in the event you have a long document that must be broken up into pieces. (You can also link the printing of same.) The maximum file size in memory at once is about 10K in a 48K machine. This is small compared to other WP's.

There is a file manager menu/prompt display that uses up just part of the screen. This can be turned on or off at will, which is very nice. However, despite the fact that you see a COMMAND? prompt, the key you actually hit is not displayed. If you wish to delete a file, the program will double check you.

In conclusion, while the user has a live screen with full cursor control, search and replace, insert and delete, the editor is an average implementation. It does not have the power of P.I.E.

FORMATTING

For the most part, what you type on the screen will be sent to the printer as is. There are default values for page length and margins which can be changed with commands, there are also imbedded format commands for local or more precise control over ejecting a page, page numbering and so on.

When you type in your text, it is constrained to finish inside the right margin with word wrap. When you are done, the text is ragged, of course. You may now turn on justify mode and "align" the text. Before your very eyes, the program will scan through the text re-writing the text right justified. Sometimes it takes two iterations of a paragraph. It is a fun process to watch. If you later changed the column width and re-align, the text will be perfectly justified inside the new boundary. (The action starts on the currently displayed page, so you must have the start of the text showing.) Also, when you specify an indent location, the beginning line of every paragraph will be aligned. This is a kind of pseudo-auto-indent obviously more geared to the writer than the program composer. EWP is designed to do only one thing: help create written documents.

EWP is also designed to exploit the more advanced printers. It supports incremental spacing, bold face, super/sub scripts, and bi-directional printing. (In fact, we had never

seen our Qume Sprint go both ways, although we knew it would.) If you have a need to send special characters to the printer, they may be entered in the text after a CTRL-O. This is a very nice feature and makes the EWP a powerful tool for creating almost any type of written document.

The printing can be done immediately from the editor (or file manager) without waiting for a formatter to load. In fact, it is almost too fast. Usually one expects a prompt to turn on and set up the printer. Not here. You better be ready when you type the CTRL-P. Printing can be started and stopped by striking any key. The manual claims that a left arrow will go to a slower print speed, but it only stopped the printer for us.

Unlike so many of the other Apple II word processors that expect you to print the entire document again when you make one correction, EWP allows you to start printing at any point and quit by striking a key twice. This is not as nice as P.I.E's and Word Star's automatic paging, but it works.

FILE SYSTEM

EWP keeps its own kind of files on disks that it formats. While you can make back up copies of your files, the diskettes produced are not readable by standard Apple DOS. This prevents you

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from salvaging and/or reading those diskettes with anything but EWP. And as mentioned above, EWP is not going to be useful at all for editing BASIC programs, assembler source code, or what have you. Its operation and file format prevent it.

The files on the current diskette are labeled by number and size in the file manager menu and the free space left on the diskette is always displayed. This is very useful.

A word count is available, but amazingly, it comes up on the screen for but 2 seconds and then disappears. If you did a word count, then leaned over to grab a cookie, it would be gone when you looked back at the screen. A gross oversight.

A 3700 character file loads in a little over 4 sec which is a little faster than the already astounding SuperScribe.

DOCUMENTATION

The documentation of EWP is excellent. It is clearly and nicely printed in a small three ring binder. The installation instructions are very clear, and the installation itself was easy and flawless.

Commands are discussed in an orderly and psychologically pleasing manner with clear step-by-step directions. Occasional pictures of how the screen should look are included, there is a glossary and an index, and a quick reference card. The company phone number is printed (unlike some manuals) in case you need help, and the attitude of the text is that IUS wants to help.

The only flaw is the instructions for the shift key mod. Nobody, and I mean nobody except SUPER TEXT has acceptable instructions on how to do this. EWP has some of the best documentation of any of the word processors seen to date.

CONCLUSION

Easy Writer Pro is strong on its ability to format print, exploit a printer to create any kind of written document, and has great documentation. The bad news is a rather slow and unrefined editor. If you are in an office environment where most of the typing is done by secretaries who take long sips of coffee between key strokes, EWP is a good choice. If you are a professional writer and do a lot of composing at the keyboard, or need a powerful standard textfile editor, the EWP is not the one.

Finally, EWP is overpriced for what it will do. (Even though it does a lot.) Evidently, it is assumed by IUS that businesses have more cash to part with than individuals or perhaps they are under the mistaken assumption that an expensive word processor is a great word processor.

EXECUTION: good (editor)
very good (formatter)

DOCUMENTATION: excellent

USAGE STANDARDS: very good

GOOD

- / On screen formatting
- / Powerful text formatting
- / On screen prompts (toggle on/off)
- / Word count
- / Fast file access
- / Terrific documentation
- / Long lines >80 col
- / No need to load formatter (but file space reduced.)

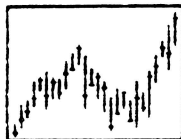
BAD

- / Slow screen response
- / Average editor
- / Word count not left on screen
- / A bug in Search/Replace function
- / Slow tabbing
- / Incompatible files

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INTRODUCTION

The Executive Secretary (ES) is a recent addition to the many Apple II word processors. It has, in this reviewer's opinion, a poor editor, a wordy manual, and is overpriced. However, it has a versatile and powerful formatter and form letter module, has complete and detailed documentation, and has some special features not found elsewhere.

THE EDITOR

ES is not for people who like to get on with things. It is extensively menu driven, written mostly in Applesoft, and is slow in most things except character entry. It has menus for everything and some don't offer all the options you'd like; it is a restrictive environment specially designed to pamper the user.

Major editing is done via an edit marker which is essentially a cursor (asterisk) that must be moved around with the left/right arrow and the "/" and Return key. This is reminiscent of SuperText, but SuperText is better. Insertions of text cause the rest of the text below to become invisible as your new block is inserted. If what you intend to insert depends on what is written later, you are out of luck. Because the screen is dead, it is possible to have short lines during deletions, and these have to be fixed-up or reformatted with the X command. Direct, live screen editing is not this program's forte.

Because of this structure, a kluge must be performed to delete the first character of a line. Scrolling is not standard. When you are adding new text and get to the bottom, a whole new screen page is brought up and you can no longer see what you just typed without getting out of add mode and scrolling back. This is very bad.

There are tabs, but the tabs do not bring the cursor in x spaces; instead, a [is entered to show how many spaces will be tabbed. This is unusual and possibly annoying.

The search/replace function is unconventional (as it must be with a dead screen) in that the found string is brought to the top of the screen for editing. This doesn't help the user see the context of his changes.

There are a few nice things to say about the editor. The prompts are good and accidental deletions of files are next to impossible. The program is usable in either 40 col mode or 80 and the currently supported cards are the Full View 80 (Bit '3 Corp) and the Videoterm (Videx). Character entry is fast and could not be out-typed. A special utility allows the backing up of your data diskettes, and the files are standard text files.

I found ES to be one of the more tedious to use editors, in the class of WRITE-ON!. Is is definitely not for serious, high speed writers. It does not compare to the facility of other editors reviewed in this issue.

FORMATTER

The formatter is the best thing about ES. It has all kinds of nice and special features. Firstly, to get to it, you must wait about 25 sec for a long (80 sector) Applesoft program to load. (The price paid for a powerful program....)

When the file is printed, after you wade thru menus and sub-menus, a sysgen page comes up. (I was really annoyed at this until I discovered that it can be defeated with a code in the text.) Files are printed by reading from disk even if they are small instead directly from memory. While this is slow, it allows the program to print files larger than could be fit into working memory (22K) via imbedded commands that merge text.

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During all the prompting that goes on in this program (including the editor and many menus) sometimes an ESC is used, and sometimes a Return is used as the default to continue. This inconsistency should be avoided.

ES has imbedded format commands very similar to P.I.E and SuperScribe that start with a > instead of a dot. You have control over: margins, paging, indenting, justification, centering, forcing a new page, print following as is, adding spaces, setting the column width, keyboard prompts, customized forms, sheet feed/form feed and more. The ability to insert a control character in the text was not mentioned. These commands can selectively override the defaults. There are 41 of them and they are quite powerful.

More good news is that ES has a form letter/card file capability. You can maintain card file images and then insert these images into form letters. Inserts to the text can be under keyboard control or be in files. Further, the data files are compatible with Micro Lab's Data Factory (reviewed elsewhere in this issue). ES makes some hoopla about being able to read VisiCalc file, but then any program that can read a standard Apple DOS text file can do that.

Another unique feature is the counters. You can use counters to refer to numbered items in the text as dummy variables. If the numbers change, you can easily change the counters with arithmetic commands to renumber the items. This is perfect for research papers in which tables and figures are constantly being revised and added. Also, you can specify an abbreviation: A code to be placed in the text that represents a string. When the code is encountered, a specified string will be sent to the printer.

Mention is made of using the Hayes modem to dump card files over the phone, but not much else is mentioned about it. Also, if you have a California Computer Systems clock, ES will access it to date your files.

DOCUMENTATION

The red binder has the rings at the top and a velcro padded strap to allow the manual to stand up vertically. This is very classy and very useful. While the documentation gets wordy and pompous (using RULE #X for simple editing commands), it is in general very well written and professionally executed. As with many word processors, the installation instructions are hidden away in the back instead of in the front. A beginner to word processing should have no trouble handling the lesson oriented instructions.

There is a reasonably good index and a quick reference sheet of paper.

FILES

Standard Apple DOS text files.

WARRANTY

There is no warranty. Services available are: a second copy of the diskette as back up sent with registration form. Damaged diskettes are replaced for \$7.50. Upgrade for one year for \$7.50. Telephone support and hand holding.

CONCLUSION

Executive Secretary is the strangest of all the word processors. The editor is weak all out of proportion to the additional features and the strong formatter. The price is extraordinarily high, also out of line. The price to performance ratio is below average compared to what I have seen. If I had to recommend an easy to use, basic word processor that is user oriented for the office environment, I would prefer Letter Perfect.

EXECUTION: poor (editor)
 very good (formatter)

DOCUMENTATION: very good

USAGE STANDARDS: fair

GOOD

/ Built in form letters/card file
/ Powerful formatter
/ Good user error trapping when used
 nominally

BAD

/ Weak editor
/ Slow
/ Too many menus
/ Bad code error trapping
/ Text goes away on insert, new page
/ Search/Replace inconvenient
/ Artificial tabs

PII

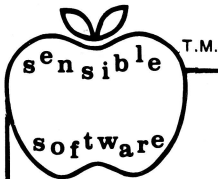
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INTRODUCTION

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32K +, Disk II, ROM/RAM Applesoft, Apple II/Apple II +

APLUS is a 4K machine language utility that adds the following structured programming commands to Applesoft basic: 1) WHEN...ELSE...FIN, 2) UNTIL, 3) WHILE, 4) UNLESS, 5) CASE, 6) SELECT (variable), and 7) (OTHERWISE). Multi-line IF...THEN statements are also supported. APLUS allows the use of "named" subroutines or "procedures". The programmer can now instruct a program to "DO CURVE-FIT" without worrying about the location of the subroutine. APLUS automatically indents "&LIST"ed programs to clarify the logic flow. The APLUS "&CONVERT" command replaces the above structured programming commands with "GOTO"s and "GOSUB"s to provide a standard Applesoft program as output. New programs can now be written using "GOTO"-less logic.

APPLESOFT PROGRAM OPTIMIZER [AOPT]

\$20.00

32K +, Disk II, ROM/RAM APPLESOFT, Apple II/Apple II +

AOPT is a 2.2K machine language utility that will substantially reduce the size of an Applesoft program without affecting the operation of the program. AOPT automatically: 1) Shortens variable names, 2) Removes remarks, 3) Removes unreferenced lines, 4) Appends short lines together, 5) Removes extra colons, and 6) Renumbers line numbers. AOPT will convert a verbose, well documented, development version of a program into a memory-efficient, more secure, production version of the same program. This is the ORIGINAL and the BEST optimizer on the software market today!

DOS PLUS

\$25.00

32K +, Disk II, DOS 3.3, Apple II/Apple II +

DOS PLUS is the software solution for living with both 13-sector (DOS 3.1, 3.2, and 3.2.1) and 16 sector (DOS 3.3) Apple diskettes. DOS PLUS adds 8 new commands to Apple DOS. Three of these are built-in and five are user definable. The built in commands include: 1) ".F" to "flip" between DOS 3.2 and 3.3 (The user need not re-boot and any program that resides in memory will not be affected by the flip. The DOS version can even be changed within a program!), 2) ".S" status command informs you what DOS version is currently active, and 3) ".B" BLOAD- analysis is also provided to inform the user of the starting address and length of the last accessed binary file. DOS PLUS also includes a DOS COMMAND CHANGER program to allow easy customization of Apple DOS commands to suit individual tastes.

DISK ORGANIZER II

—NEW—

\$30.00

48K, Disk II, Apple II/Apple II +

DO II is the fastest and friendliest utility available today for organizing files on an Apple II diskette. DO II provides the following functions: 1) TITLING in Normal, Inverse, Flashing, Lower case, and other characters normally not available, 2) CUSTOM REORDERING of the directory, 3) ALPHABETIZING, 4) DYNAMIC DISPLAY of ALL filenames on a diskette (including deleted files), 5) RENAMING files with the same character options as TITLING, 6) UNDELETING, 7) DELETING, 8) PURGING deleted files, 9) LOCKING (all or some), 10) UNLOCKING (all or some), 11) USE of DOS sectors for increased data storage, and 12) a SIMULATED CATALOG to show the modified directory **before** it is written to the diskette. DO II is completely MENU DRIVEN and attains it's speed by altering a RAM version of the catalog. DO II uses a very powerful SMART KEY to automatically locate the next valid filename for any specified disk operation. Compatible with DOS 3.1, 3.2, 3.2.1, and 3.3 as well as MUSE DOS to allow manipulation of SUPER TEXT files! (Note: Updates available for \$5.00 and original diskette.)

PASCAL LOWER CASE

—NEW—

\$25.00

48K +, Disk II, Apple II/Apple II +, Language System

This is the most recent commercially available LOWER CASE MOD for the Apple II. It is the only currently available modification that is compatible with both versions of Pascal (1.0 and 1.1). The Pascal version is automatically checked prior to updating system Apple. If you have any of the hardware lower case adapters you can now input the following characters directly from the keyboard: | ~ \ ' & _ and \. This modification does NOT interfere with any of the 'Control' character functions implemented by the Pascal environment and will 'undo' any alterations made by other commercially released modifications.

QUICKLOADER

\$25.00

48K +, Disk II, Apple II/Apple II + ... (2 Disks)

If you find yourself doing the same things over and over -- QL will help you do it faster! QL is a unique disk that lets you load DOS, a language card (optionally), and an application program of your choice extremely rapidly. QL boots as a 13 or 16 sector diskette and is easy to set up and use. To change the setup, you merely load your Apple RAM with the new data and use the "RECONFIGURE" option of QL. The next time you boot your QL disk, it will quickly load your new setup (Language Card, DOS, Application program) into your Apple! QL can reduce the time to perform these functions by up to 80%! Now that you've read this, you say "But I can already do all of that!" QL doesn't do anything new -- it just does it MORE CONVENIENTLY and FASTER! Try it, you'll like it!

DISK RECOVERY ("THE SCANNER")

\$30.00

48K +, Disk II, Apple II/Apple II +

This program is long overdue. You need no longer be concerned with the problem of physically damaged disks. Just as "Apple Pascal" provides a "BAD BLOCK SCAN", DISK RECOVERY will do a complete scan of your Apple diskettes' recording surface. Damaged areas will be "marked" as used in the disk directory so that no attempts will be made to "WRITE" to a bad sector. The VTOC will be completely redone to reflect both the bad sectors and actual disk usage. A complete report is generated advising the user of all corrections. A resulting "DISK MAP" is presented for your review. The greatest advantage of this program over the other versions is that it can be used on either NEWLY INITIALIZED DISKS or disks that ALREADY CONTAIN PROGRAMS as well as the SPEED of analysis. THE SCANNER is fully compatible with both 13 and 16 sector diskettes. This is a must for all Disk II owners!

ALSO AVAILABLE:

SUPER DISK COPY III \$30.00
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THE NEW PROTECTOR \$250.00
(Call or Write for Information)
LUNAR LANDER II \$15.00
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done. It is one program, has excellent documentation, is specially designed to work with a modem, is well designed, and doesn't cost you your first born child.

THE EDITOR - FEW COMPLAINTS

As I put these various word processors through their paces, I make notes of good and bad features to be pointed out in the review. I notice that most of my notes on Letter Perfect (LP) are good features.

First, LP one of the few word processors of the group that can be sysgened for standard Apple 40 col or one of the following 80 col boards: M & R SUPER 'R' TERM, ALS SMARTTERM, VIDEEX, or BIT 3 FULL VIEW 80. (Executive Secretary will do it.) This is terrific because it allows the program to grow with you.

Secondly, LP has in the Apple II 40 col mode, a non blinking cursor which I have come to like a lot lately.

Next, LP is FAST. The program is in machine language and is as fast as P.I.E. on character input and faster in screen scrolling. You will not be bothered by sluggish response in the 40 col version (or 80 col checked out on an ALS Smarterm). The screen is live and the editing functions are control characters that are easy to use. Cursor control for left, right up, down are <-, ->, CTRL V and CTRL Y. Standard editing functions are direct CTRL codes, and some lesser used functions are of the form CTRL A [character].

While there is word wrap on normal input, it doesn't happen in insert mode. If your correction bumps a word to the right, it may be split. Even so, there is full turnstile displace. The sequence CTRL A,J "fixes" up the entire text (quickly I might add) by eliminating broken words. This is a strange non-feature.

A problem that I didn't expect occurs with the tabs. While editing a line, I tried to use the tab function to skip over to the middle of the line. Instead of merely jumping the cursor, text is erased as the cursor moves. Hence, the tab is useless unless you are on a blank line.

One more minor complaint is that shift lock is through CTRL A instead of two ESC's. This might be for 80 col board compatibility.

LP never lets you hurt yourself. Deletions require a "tell me twice" operation and with shifted characters to prevent accidental loss of text.

Another feature not found on other WP's is a slow screen scroll like the one available in Applesoft. This is in case you prefer to proofread by having the text scan by instead of reading a page at a time.

There is search and replace, and it starts from the cursor forward. Unlike P.I.E. which can do a forward or backward search, you must position the cursor at the beginning of the text to catch all your searches. I found it easy to use.

The editing commands are mnemonic as they can be considering the difficulty of matching the letters of the alphabet with the desired editing features. You have block move commands and a 2048 byte buffer. Items are put into the buffer in sequence so that you can fill the buffer with notes and then pop it out somewhere. (You cannot leave the editor without clearing the buffer; I don't believe this is absolutely necessary, but it is in keeping with LP's intentions to never let the user screw up too badly.) Missing, as it is with most of the WP's except P.I.E. is the ability to cut and paste individual lines. Also, if you sever a line with CTRL P and do not add enough text, it is difficult to close up the gap.

Other than the above mentioned complaints, LP's editor is very, very good, perhaps second only to P.I.E., and one of the best, cleanest, and fastest editors.

FORMATTER

LP is one, self contained program and printing can be done immediately after leaving the editor. When you come back to the editor, your text is still there.

In the style of some of the recent business oriented word processors, a great deal of emphasis is placed on printer control, sub/super scripts, paging, titles, and special characters. Anything after a CTRL SHIFT M (just as P.I.E.) is sent to the printer as is. It can be used to control your printer.

Direct formatting of the text is done via format strings following a CTRL F. The strings are similar to those used in Super-Text. Defaults are set up so that you only need to change things that you wish to. One command allows you to reset the defaults. For example, F m10w100j0 where the underlined F is a CTRL F indicates the left margin should be 10, the page width 100, and justification (a default) is turned off. Whether you put your format commands on a single line after a CTRL F or set them up vertically after a "." like SuperScribe and P.I.E. is a matter of taste.

A printer driver is supported at location \$300 and detailed instructions are given on the use and restrictions of this location.

So far as printer control is concerned, you can start and stop the printing and generate as many copies as you wish, but there is no print any single page function.

DOCUMENTATION

Letter Perfect has superb documentation. It gets wordy at times, and the author doesn't seem to worry about the punctuation of dependent clauses. At least it is very clear. The text is nicely printed in a full size binder, is laid out well, and easy to follow. Summary tables are given, and there is a reasonably thorough index.

The theme of the documentation seems to be "explain it all to the beginner." So often, word processor documentation is an after thought and the author(s) can't bear to sit down and explain everything in minute detail. The documentation here seems to be a work of monumental patience and care. It is clear, easy to read even if you are a beginner to the Apple II, and thorough.

A quick reference card is supplied, and it is folded so that it can sit up on the desk like this

The instructions on how to do the shift key modification are the worst yet. It amounts to one sentence and no diagram. Unpardonable.

FILES

Letter perfect is copy protected. Data diskettes are formatted by LP and are cataloged differently than Apple DOS. Nevertheless, the disk format is compatible with DOS 3.3 and you can back up your data diskettes by using FID or the Apple Copy program.

The files are binary and packed to save room on the diskette. This is of questionable advantage since diskettes are cheap. It would be far better to write standard text files so that if, heaven forbid, LJK Enterprises goes out of business and the user's diskette crashes, he can still read the files.

WARRANTY

There is no warranty at all on this product. You can get a back up copy by sending in your license agreement and a whopping \$30. No second diskette is supplied as with Super-Text.

CONCLUSION

Letter perfect scored very well indeed in the usage standards. It is amazingly refined both in operation and documentation. It is not too expensive and easy to use. I would recommend it highly for professional writers and for office use alike.

EXECUTION: excellent (editor)
 very good (formatter)

DOCUMENTATION: excellent

USAGE STANDARDS: excellent

GOOD

/excellent editor
/fast
/40 or 80 col
/error prevention
/printer driver possible
/modem compatible

BAD

/non-standard, but copyable data files
/no word wrap on insert
/cannot print page x,y

Powerful & Efficient Apple Software SDS Guarantees It.

You depend on good software to save you time and to have your computer help you do a job more efficiently. Our software is designed to do just that. We are one of the oldest companies supplying software for the Apple II*, and one of the very few that offers an unconditional guarantee of satisfaction or your money back! Here are a few that you'll want to add to your library:

THE CORRESPONDENT

The Correspondent is an extremely versatile program designed primarily for writing letters and other documents but comes with so many supporting utilities and features that it will be one of your most frequently used diskettes. The screen becomes a window onto a 40 to 80 column page with 4 directional scrolling to see any part of the page just as it will be printed. A special "reading mode" compresses text into a 40 column format for easy proof-reading. Editor functions include full upper/lower case & control character support, character or line insert/delete, paragraph move/copy/delete, forward and reverse tabbing, text centering, file linking and even math functions! Also featured are split screen capabilities, access/edit text files, single disk copy program, and a global find routine for use as a free form database. You can use it for letters, forms, memos, phone lists, etc. **The Correspondent** is easily the best value of performance and price of any similar program.

Price: \$44.95 on disk

APPLE-DOC

Apple-Doc is one of the most powerful programming utilities you can own. From the novice to the professional, **Apple-Doc** more than pays for itself in time savings alone! You can change any element throughout the listing almost as easily as changing a single line. **Apple-Doc** includes **Variable Xref** which creates a table of every variable used in a program, every line occurrence of the variable, and lets you create your own variable descriptors which can be stored in a separate disk file. **Line Number Xref** creates a table of every line in the program called by a GOTO, GOSUB, etc., and all lines each is called from. Any reference to a line not present is specifically flagged for your attention. **Constant Xref** is similar but documents all numeric constants — great for scientific and business uses. With **Replace** you can easily rename any or all occurrences of any variable making it indispensable for custom programming. Finally, **Listref** creates a professional program listing with top, bottom, & left margins quickly defined. Our all-time best seller!

Price: \$34.95 on disk

LIST MASTER

List Master, an excellent companion to **Apple-Doc**, provides a number of utilities for performing large scale changes to your program listing in a high-speed and automatic way. **List Master** includes **Applespeed** which can remove REMarks, shorten variable names, combine lines, and renumbers by 1's in any Applesoft* program. **Smart Renumber** not only renumbers but also gives you the option of preserving logical blocks of line numbers you have established for various routines thereby retaining the original logic and workability in the renumbered program. Also contains merge routines that allow you to quote blocks of lines from one part of the program to another and automatically renumber appropriate line references. **Comp-List** compares any two Applesoft or integer programs and lists any lines added, deleted or changed.

Price: \$34.95 on disk

All programs require 48K and Applesoft in ROM or language card. Specify DOS 3.2 or 3.3. California residents add 6% to all prices.

*Prices effective until 10-1-81.

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PIE 80 COL

by Tom Crosley
 Programma International
 2908 N. Naomi St
 Burbank CA 91504
 213 954 0240
 \$129.95 diskette
 Machine Language
 32K, Disk II, printer, any 80 col
 board
 Unlocked

PR=AA
 John Martellaro

INTRODUCTION

The Programma International Editor (P.I.E), or Apple Pie as it is sometimes called, is one of the best Word Processors available for the money. It has an abundance of user oriented features, maintains either standard Apple DOS text files or binary files, is very fast, and has a powerful editor. Further it can be used effectively in either its 40 or 80 col version.

The EDITOR

PIE has a text window bounded by dashes and exclamation marks creating a very aesthetic working environment. Across the top, plus signs indicate the tab settings and an inverse dash is the bell marker. At the bottom, there is a status line showing the row and column the cursor is presently in, the case mode, insert mode and entry mode. This window plus status line is an intelligent adaption of WP's on larger, more expensive systems.

The PIE window (21 x 80) is always "live" in the normal mode. Wherever the cursor is, text typed is either entered or overwrites previous text. The user can enter/exit insert mode via a CTRL-P toggle which inserts characters at the cursor.

One of the most unusual features is the dual screen feature. In the normal input mode, there are two screens: the left screen in column 1 to 78 and the right screen is automatically brought into view for typing in columns 79 to 128. between screens.

P.I.E. is not without some flaws however:

1. The toggle doesn't work on a line that doesn't extend beyond 80 characters. One must move the cursor to a nearby line that does, then CTRL-B toggles screens.

2. Text is not pushed down turnstile fashion if one types beyond column 128. One must go through a semi-elaborate ESC CTRL-I to shove what is beyond the cursor down to the next line. If there is nothing beyond the cursor, then another technique must be used. However, the user really has no excuse for not hitting Return earlier on a free form entry.

An alternative to all this is to go into a second mode, called PPMODE. Here, the user has full word wrap around. This technique turns out to be very useful and shows how with proper output formatting, a free form entry is a very natural and fast way to enter text. Another feature is yet a third mode (AIMODE) that has automatic paragraph indentation such that the cursor always comes back on the next line at the same indent as the previous line. This has obvious advantages for entering Pascal source code. A carriage return simply moves the cursor down and to the left. New paragraphs are generated by the indenting and not the <CR> as on most other WPs (Letter Perfect, SuperScribe, SuperText) since P.I.E. does all the thinking for you and handles the CR generation without your having to worry about it. The advantage of this is a natural use of the Return key. There is no problem with paragraphs that are not indented; just skip a line and don't indent.

Apple PIE uses a different technique for commands than all the other WP's. It makes use of the ESC key to introduce arguments prior to a normal command. For example, CTRL-V moves the text up one page, but ESC x CTRL-V moves it up x pages.

The shift key used on PIE is the right arrow in the default mode with no mods. However, this is of little consequence since presumably most serious users have all switched over to the "shift key mod" which allows the Apple II keyboard to work "as Nature intended". (A quote from Bob Sander-Cederlof.)

One thing that is hard to get used to, and which is perhaps the only outright flaw, is the inability to backspace from the left edge of a line up to the right edge of the line above. The cursor stops instead, and a cursor move must be used. A major headache.

The cursor movement keys are in an easy to use position. Right, left, up, down, and home are CTRL,F,S,E,C, and D. (Programma supplies keyboard stickers that go onto the front of the keys much facilitating use.)

P.I.E. does something with more facility than most word processors, and that is the splitting and gluing of lines. Of course, the usual block move is available, and while it is limited in size to one screen page, it also remains intact between file changes so that the same text can be inserted in several documents. The editor is so powerful that many things can be done in one of several ways allowing for the personality of the user. While the command structure is complex (not currently facilitated by superb documentation), it is orderly, hierarchical, and aesthetic. The user must accustom himself to the many commands and learn the best techniques. Otherwise, he may miss easy ways to do things.

The screen speed is very fast on text entry and scrolling, the fastest of all the WPs except for Letter Perfect.

String replace allows you to search and replace one at a time or globally and automatically. The cursor is placed at each occurrence for you to see the word in its context. The search is very fast.

In summary, the command structure of PIE appears complicated to the new user (a situation not helped by the documentation: see below), but it is also very powerful and coherent compared to, say, SuperText. Just about everything you could ask for has been included. Little, thoughtful things too detailed to go into here make on screen composing very easy.

PRINTER/FORMATTER

PIE has a convenient and powerful printer routine. The editor must be exited and the formatter brought in; but this is not a bad compromise to give the user maximum memory for text.

Imbedded format characters are easy to insert and there are 41 of them including form letters, file linking, terminal communication, and other exotic functions.

The title page of the formatter asks how many copies, start page/end page to be printed or all, and whether it is to be printed from memory or tape or diskette. Hitting ESC stops the printer and user options are again presented.

One problem is that one can ask for binary files directly from the formatter without going through the editor. However, text files must be memory resident before they can be printed.

P.I.E. has no "on screen" formatting as does Word Star, Easy Writer Pro, and Select. You have 80 col to play with, but you must wait until the formatter justifies the text before you know exactly what the text will look like on paper. But you do have the option to send the output to the screen, and there you can see it just as it will be printed (with page numbers if asked for) under start/stop control.

FILES

P.I.E. keeps a standard Apple DOS text file that can be read by other programs. You can write and edit BASIC programs and exec them into memory or generate LISA source code. This complete compatibility with the Apple DOS is a major plus for someone who wants to use his word processor for other than just written documents. Since P.I.E. is unlocked, you can make backups, miffin it, and be sure of having a usable word processor as long as you keep your Apple II. The user also has the option to save the files as binary files which load and save faster. This binary mode is as fast as any of the dedicated routines on the WPs that have their own disk format.

DOCUMENTATION

There was an incredible amount of work put into the PIE manual. Unfortunately, it was written in somewhat of a hurry and it shows. The text amounts to somewhat over 150 pages of small type in an 8 x 6 in format in a very nice ring binder.

However, there are some problems with the Apple PIE documentation.

1. The user is not prompted through a complete example session from entry to final print out. There is a reasonably good tutorial on the usage, but it stops short of the formatter. It takes an alert reader to discover how to even get into the formatter.

2. The author insists on speaking in a PIE meta-language. Every action has a meta language name that reflects in an Apple keyboard control. For example, searching forward in the meta-language is "+SCH." This is achieved with a CTRL-Z. I don't really care as a user to be told that I should for a string search do a ARG xx +SCH. That means nothing to me. What I want to know is: do an ESC xx CTRL-Z. It is after all, these sequences that are committed to memory, not the meta-language. Everywhere in the manual these two are intertwined resulting in confusion. We have been told by Programma that the reason for this is that the commands are tied to the keys by a user alterable table. The intent was that some users might have wanted to alter the key assignments, but this has not proved popular and the Meta Language will be dropped in the new documentation.

3. The manual is thick and impressive, but there is no index. This is much needed.

4. "Installation" is in chapter 17, the last chapter of the editor section. I don't even want to see the tutorial until I've got the thing installed and running.

5. It is hard to find things in the manual. The appendices are just lists and there is little organization. You must read the manual cover to cover and hope you can remember where you saw the item. Fortunately, the quick reference card has numbers keyed to the chapter headings so that one can relate the two.

6. A very important mode, the PPMODE, is mentioned in a very obscure way. We discovered it only by accident, because the significance of the mode was not clearly discussed in the manual.

7. Page toggling CTRL-B is obscured under the append function and is not adequately discussed.

8. Horizontal and vertical cursor defined functions are not clearly explained.

Writing a manual for a word processor as complex as this one is no easy task. However, other companies seem willing to tackle the task (Letter Perfect, Executive Secretary, Word Star). A rewrite that does as good a job as SuperText's new manual or Letter Perfect will make P.I.E. a formidable contender, and in my opinion second only to Word Star.

WARRANTY

Programma warrants that the product shall be free from defects in materials and workmanship for a period of 90 days and will replace the product provided the license agreement has been returned. The diskette is unlocked; so if you are ever

without a backup copy, you should be sent to the iridium mines of Beta Antares IV.

CONCLUSION

Apple PIE has to be considered a best buy word processor. For the money spent, it cannot be beat. The aesthetics of the input, the power of the editor and formatter, and the flexibility are impressive. However, the program requires constant use for full exploitation and a love of repeatedly perusing manuals.

EXECUTION: excellent (editor)
 excellent (formatter)

DOCUMENTATION: fair (reduced from good 12/80)

USAGE STANDARDS: excellent

GOOD

/ Dual screen out to 132 char
/ Ability to save memory as Text or binary file

/ Powerful text moving features
/ Status line under text window
/ Diskette unlocked
/ Powerful formatter; print page x,y
/ Three character entry modes
/ 40 or 80 col board versions, all 80 col boards supported

BAD

/ Inconvenient back-up of cursor
/ Inconvenient page toggle
/ Weak tutorial in manual
/ Excessive use of unnecessary and mythical meta-language in manual
/ Forgets file name after printing

PII

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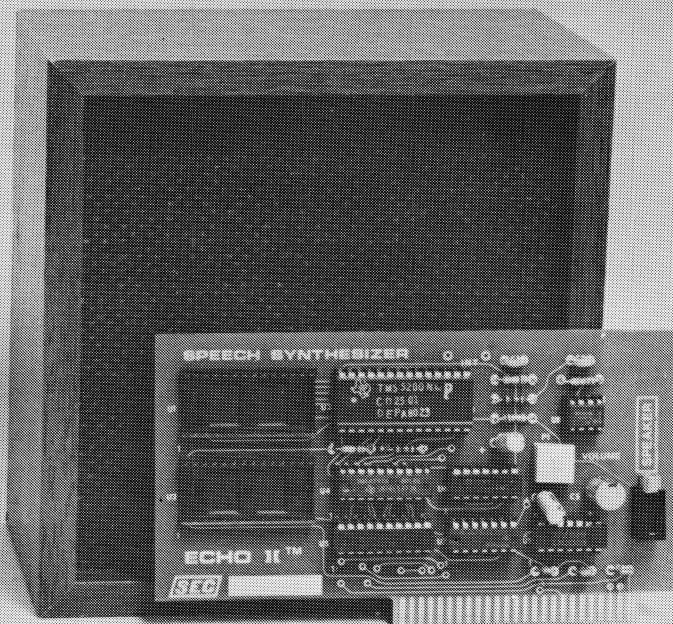
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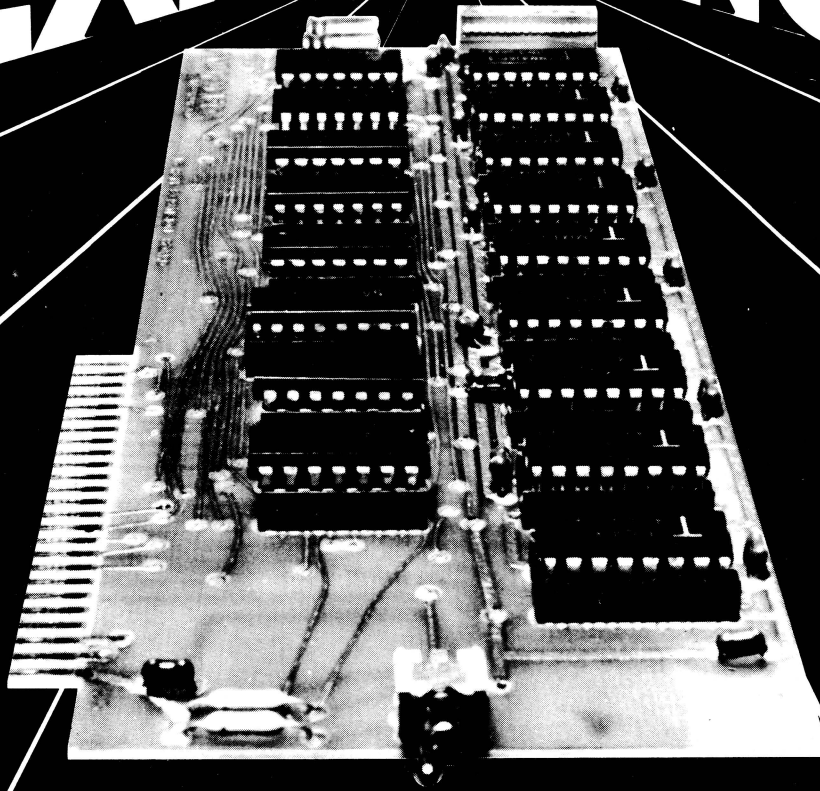
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author unspecified
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\$495.00
48K, disk II, 80 col card, printer
Microsoft Z-80 card
Machine language
Unlocked

PR=P
John Martellaro

INTRODUCTION

The version of Select we received for review had problems. It did not want to install properly, and repeated phone calls to Information Systems finally straightened the problem out. More importantly, the program itself has many problems, both in the editor and documentation. In essence, the capability for the money is very limited. The company has indicated that a revision for the Apple II will be available shortly.

For the time being, Select is not recommended for the Apple II. A copy of our review has been sent to Information Systems for their comments, and it will be published along with their response next issue.

PII

SPELLBINDER

author unspecified
Lexisoft Inc
Box 267
Davis CA 95616
916 758 3630
\$495.00
48K, Disk II, printer
Microsoft Z-80 card, 80 col card
Machine Language
Unlocked

PR=P
John Martellaro

INTRODUCTION

Spellbinder was sent early enough to be reviewed thoroughly, but due to a misunderstanding on my part, I thought that the version would not work on JLM's Double Vision card. It turns out that telling the configuration program that you have a Videx Videoterm works. So I had a working copy all along and didn't have to wait for the Double Vision version.

Spellbinder is one of the CP/M based programs. As such, it requires an 80 col card and a Z-80 card. It is a big time, formidable product with many pages of detailed instructions.

BAD

The program was briefly used just prior to press time, and I have the following observations:

Deletions are done with a rubout character and then the rubouts are eaten up in a second step with a "clear" function. This is somewhat obtuse. Cursor control is via four keys right in a row on the Apple II keyboard: left, right, up and down are CTRL H,L,K,J. The absence of a quadrant is unusual. There is a CHAR, WORD, SENTENCE, PARAGRAPH toggle that operates on the delete function. If you are in WORD mode, deletes delete the next word after the cursor. Inadvertent toggle to PARAGRAPH mode can delete (not push into a buffer) a whole paragraph, and the user is advised to always return to WORD mode. Free memory is about 30K, and files larger than that can be operated on. The cursor will not back up to the previous line on a left cursor move at the left end of a sentence.

The disk maintenance functions are somewhat un-mnemonic and possibly confusing. "gd" saves a file, but qd "deletes" it. Bad news for a dyslexic.

GOOD

Spellbinder has on screen prompts, a live screen, and a preview mode that allows you to see the text as it will be printed. It can print in two columns (not tested), and unlike, Word Power, you don't have to re-raster the paper. The program logic takes care of the printing. There is a nice feature that allows a menu-ized generation of format commands that can then be placed in the text with one command. There are powerful macros for doing fixed forms, printing a batch of files, sorting defined text files vertically, and there is a mailing list utility. Spellbinder, unlike Executive Secretary, has a lot of "office" oriented features, but it also has a respectable editor.

DOCUMENTATION

It is thorough and has a very good tutorial.

CONCLUSION

Spellbinder is probably the second best CP/M based word processor after Word Star. It is apparently far beyond Select, but Select was designed to be simple minded. Spellbinder is more technically oriented and the configuration is best left to your dealer.

PII

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PR=AA-
 John Martellaro

INTRODUCTION

SuperScribe (SS) is, of all the word processors reviewed here, closest to Programma's P.I.E. in its design and function. It has some features that P.I.E. does not have, but it is also missing some of the features of P.I.E. along with its maturity and elegance.

SPECIAL FEATURES

SS has several features that are inventive departures from the usual. Probably the most interesting to the Apple II owner is the use of the HIRES screen instead of the text screen. This allows upper and lower case without additional hardware, and it allows the use of user defined fonts (although details on how to do this are not supplied).

The second major feature is a virtual memory management system that allows files as large as 60 kbytes to be operated on. This involves some disk I/O, but the disk read-write routine is much faster than a normal text file read. For example, SS can read in a 3700 byte file in under 5 seconds compared to 15 for P.I.E.

SS operates on standard Apple DOS text files, so you can edit such files whether generated by another word processor or by standard techniques of writing/listing BASIC programs into text files. This capability is of major importance to Apple II users because it provides commonality to other types of programs, namely data base programs.

EDITING

SS has two modes, a command mode and an input mode. A nice feature here is that letter commands in the command mode have CTRL equivalents in the input mode. For example, moving the cursor down one line in command mode is "A". In input mode, it is CTRL-A. Some plus and minus here: Most of the commands allow input of the form snA, where s is +/- for the sense of the direction, n is a repeat argument (1-255, default 1) and A is the command. For example, to move the cursor up 10 lines is -10A. The bad news is that the cursor movement is not a clear cut quartic of CTRL keys. Cursor right and left are the normal <- and ->. Down cursor is CTRL-A, and up cursor is SHFT CTRL A. This is very non-standard and obviates the ability to put four grouped stickers on the keyboard.

The block move technique is clean and easy to use. The block is from the cursor to either a CTRL-D or a CTRL-G in the text depending on whether you want to delete or copy the text. A CTRL-W "pops" the text out of the buffer starting at the cursor position. I like this technique almost as much as P.I.E. and more text can be moved. (The documentation does not state how much text can be moved.)

On enter or insert there is full word wrap around (a standard now for Apple word processors) and additions and deletions are full turnstile. This live screen approach is aesthetically preferable, more elegant, and tougher to program than those that open a gap, let you insert text, and then close around the added text. For those who compose at the keyboard, it is a must.

One nice thing that can be done with the HIRES screen is the screen protocol. For example, a small carriage return symbol shows their locations and control characters can be represented without flashing by underlining them. This use of the HIRES screen makes the appearance of the text look like that of more expensive word processors.

The price you pay for this is speed. SS is noticeably slower than the other word processors in character input and screen scrolling because of the logic overhead involved with the HIRES screen mapping. You can get ahead of SS easily, although a type-ahead buffer will usually catch up in a few seconds. The bottom line is that people who tend to fly at the keyboard will find it a nuisance and those who are more sedate at the keyboard will not.

THE FORMATTER

A new program, "RUNOFF," must be loaded before printing starts. When RUNOFF is loaded, the working file in memory is lost (unlike P.I.E.). The structure here is similar again to P.I.E. with a sysgen for major printer and page format parameters. First, up to eight files can be made candidates for printing. Then another menu item allows pretty specific control over the printing process including pausing, goto to top of form, continue, and start at page number n. This last is very important. A split screen shows the text as it is printed and a status page underneath. For example, the copy number and page number are updated dynamically as the document is printed.

The format commands are almost identical to P.I.E. with some additions. (Underlining and bold face are easier.) Files created with one program will be readily and easily changed to print on the other. A comment is made about imbedding words inside a special character for entry into an index, but no directions are given on how to print this index.

Other special features are the ability to do form letters and mailing labels. The form letter file must be entered in the order you want it and cannot be sorted any program utility. (You could write one to do this.)

DOCUMENTATION

The documentation is not bad at all for a first release. It is clear and readable although no effort was made to make it "pretty" like some of the other WPs. There is a command summary and a very short (nearly useless) index. The documentation is 64 pages and the table of contents is detailed enough to make up for the short index.

CONCLUSION

Since SS was evidently modeled after P.I.E. it is fair to point out the relative strengths of the two programs. SS has a more flexible screen format, no need for lower case adapter, faster disk read/write, and a more powerful set of format commands. P.I.E. has a faster display, more flexible dump commands of the text, more editing power, is not copy protected, has several character entry modes, dual screen, and auto indent. Both support "print any page", multiple drives, and file statistics.

SuperScribe has to be a "best buy." It has most of the power of major word processors costing much more. It is easy to use and learn, has a fair price, and has some high "technology" features. If you are a casual writer who doesn't type too fast, and you want a clean, aesthetic,

inexpensive word processor, SS will do nicely.

EXECUTION: very good (editor)
excellent (formatter)

DOCUMENTATION: good (being redone)

USAGE STANDARDS: very good

GOOD

- / Flexible screen format
- / Generates standard text files
- / No need for lower case adapter
- / Competitively priced
- / Virtual memory management
- / Command/Edit mode pairing
- / Built in form letter capability
- / Very fast file read

BAD

- / Slow character entry/scrolling
- / Limited editing repertoire

PII

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PR=B
 John Martellaro

INTRODUCTION

Super-Text II 2.0 is an extremely complicated and powerful word processor. It has a multitude of functions including on screen mathematics and special printer controls for super/subscripts. It is so complex that it is best used by experienced professionals for writing things like manuals and technical documentation. A mildly experienced Apple owner would be unwise to expect to get it on with SuperText right away.

FUNCTIONAL DETAILS

Super-Text uses a three-fold scheme of editing: Cursor move, add, and change mode. It is similar to Apple Writer, except that Apple Writer's cursor movement is simpler and logical. Up and down cursor are the Return and "/" keys. (It might be considered a bit unnatural to hit Return and see the cursor move up a line.) The right and left arrows work as left and right cursor move. CTRL-A enters the add mode where text is entered or inserted. You start in this mode to enter text. If the cursor is positioned interior to the text, text is inserted in this mode pushing all the other words down turnstile fashion. CTRL-C enters the change mode where the screen is live and characters overwrite what is on the screen. There are those who consider this multi-mode entry inconvenient on a word processor, so be forewarned.

There are a multitude of functions within each of these modes, all controlled by CTRL or ESC prefixes. Occasionally, when the screen is dead, single letter keys perform a function.

SuperText II is one of the slower word Processors in character entry because it is a BASIC/ machine language hybrid. Worse, it drops characters if you type to fast. While the screen scrolling is slow and ripple-like, it is a least faster than those WP's that re-write the lines one at a time.

Super-Text has many things that none of the other WP's have. One is the split screen that allows you to see the old text while correcting the new text. This is useful for professional writers who want to see how they wrote a section

of text while simultaneously trying out various refinements. Another is a built in math module that allows one to operate on columns of numbers along with an accumulator at the bottom of the screen. Another is a single key for entering the word "the." Yet another is the ability to do a search linking to files not in memory. Also, when searching, one can use the # character to resolve space ambiguities. For example, searching on Computer#World will find both Computer World and ComputerWorld.

Supertext has a non-standard DOS and can only write to diskettes that have been initialized using a Super-Text utility.

There are a myriad of other features that would take up too much space here. One purpose of a review is to assess in addition to describing. Here, the problem is a lot of programming power not put into an orderly schema. Super-Text has a linear instead of a hierarchal command structure, and there is too much of it. The user is faced with an endless combination of functions. It must be said however that the new documentation for SuperText II makes learning this program much, much easier. In addition, prolonged use will bring mastery. But none of the other WP's are as difficult to use and remember. Despite the abundance of power, it must be said that Super-Text is not elegant, and its power is not guided under an aesthetic and coherent command structure.

PRINTER/FORMATTER

If you have a professional quality printer such as one of the Daisy Wheel types with a two colored ribbon and half line feed controls, then Super-Text can exploit these features to generate professional looking text.

The formatter uses imbedded format characters as many of the other WP's. Nominally, there is an unprinted format line that dictates the appearance of following text. In addition, the user can define five control characters which will be sent to the printer when encountered in the text.

As with all the word processors, there is an "options program" that sysgens the diskette for your nominal configuration. In one submodule, there are default parameters for page and margins so that you do not have to enter them in the program if you do the same type of things over and over.

Without using markers, of which there can only be two, there is no way to print out a single page from a document.

DOCUMENTATION

The Super-Text II manual has been completely re-written. Instead of being "unacceptable" as described in Peelings II (V1 N4), it is now very, very good. The page format and layout is more pleasing but more importantly, the sequence of instruction is excellent. The manual starts with the things that are psychologically most necessary for the beginner to a system: how do I set up, how do I save and load my files, and how do I get in and OUT of various modes.

There is still no index or quick reference card.

Muse should also be congratulated for the instructions on how to perform the shift key modification. It is the only documentation I have seen that is usable. All the other WP instruction manuals obliquely mention the modification as if it were some ogre that will go away if they just hide from it.

WARRANTY

There is no warranty on the program, but two diskettes are supplied (the only WP to do this) and a damaged diskette will be replaced up to a year from date of purchase for \$10.00.

CONCLUSION

SuperText II has some exotic editing features. Some are useful like the split screen and some are not, like copy the word above the cursor to the cursor. There are also some flaws: the dropping of characters, the lack of an 80 col version, and an incoherent command structure. Also, while many word procesors have built in form letter modules (P.I.E., SuperScribe, Letter Perfect), Muse charges an extra \$100 for theirs. SuperText II is an above average word processor on the whole, despite its flaws. While it used to be overpriced compared to other similar programs. it is now reasonably priced.

EXECUTION: fair (editor)
excellent (formatter)

DOCUMENTATION: very good

USAGE STANDARDS: fair

GOOD

- / Math mode
- / Remembers the last change made/file loaded
- / Split screen (text/text)
- / Auto-linking feature
- / Can fully exploit a good printer
- / Special # character for finding spaces
- / User catalog
- / Two diskettes supplied

BAD

- / Non-standard DOS and files
- / Slow screen scroll with ripple
- / Tedious command structure
- / Sometimes slow responding to character input and drops characters
- / Form letter module extra

PII

WORD POWER

by Jerry Rivers

System Design Lab
2612 Artesia Blvd #B
Redondo Bch CA 90278
213 374 4471
\$99.95
32K, disk II, printer
Applesoft & machine language
Unlocked

PR=D
John Martellaro

INTRODUCTION

Word Power is similar to WRITE-ON!. It is line oriented and written in Applesoft with machine language assistance. It is not a true word processor in either its editing mode or the printer/formatter mode.

OPERATION

WP's editor can be run just like any Applesoft program. Unlike WRITE-ON! which tries to display a cohesive block of text in the display. WP uses line numbers just as the Apple BASIC editor. In fact, the program really is nothing more than a slightly more sophisticated BASIC line editor. On page 8, the documentation says that line oriented is really an advantage, not a drawback. (More such self-serving comments are found scattered through the manual.)

The command prompt symbol is a " -- " and there are about 35 three letter commands that can be performed. ADD XX starts the adding of text at line number XX, CAT displays a catalog, DEL deletes lines, EDS displays format default status, SAV FILENAME saves your file, OLD FILENAME reads one in, and so on. Non-standard textfiles are used. Since the file read/write is under the control of Applesoft, certain difficult to handle characters are changed before saving to disk. This makes normal text files generated by other word processors unreadable.

There is no separate line for commands and no status line. The prompt symbol can appear anywhere on the screen, and lines can be entered in any line number order, just as in BASIC. This results in a rather cluttered screen and frequent use of DIS to display the file is needed to make sense of the file.

When backspacing with the left arrow key to make a correction, the just typed character under the cursor blinks as a different character than the one typed in. (Other word processors avoid this through added sophistication.) This makes editing a little shaky. Also, under some circumstances, the editor will generate duplicate line numbers and you must use the RES command to resequence the file.

The editor is not error trapped in any way. Trying to write to a locked file produces a drop into the Applesoft prompt. The user must type GOTO 250 to rerun the program.

The syntax for a global change is:

CHG startline endline/str1/str2/ALL V

Some of these parameters are optional. The ALL does it everywhere and the V allows a verify. As with WRITE-ON!, the changed lines are simply displayed with no marker or cursor pointing out the changes.

The documentation claims that it is possible to enter special characters like |, _, and], but no directions are given on how to do this despite the fact the the Dan Paymar chip is supported.

PRINTER/FORMATTER

The editor does the printing as well, so there's no need to call in a new program. Imbedded format characters are not used, instead commands that control the text and defaults are used to determine how the text will look.

Right justification, a simple matter for most word processors, seems to be a big problem for this program. The reason, of course, is trying to handle right justification with a line oriented editor. There is no carry over from one line to the next. A line is a line. If a line of text has more characters than the desired column width, too bad. Text overflows out onto the open area to the right. If there are too few characters on a line, say two words, the program will assume you don't want to justify that line and it will just sit there. The result is that you must pay careful attention to the number of characters you want to enter on a line in the editor and the desired column width. If the line is one character over the column width, it will stick out. Once you have observed this protocol, later switching to a different shorter column width is nearly impossible and a longer column width is difficult. This is not "word processing" by any stretch of the imagination.

There is no way to stop the printing of the file without hitting RESET, and just one of many pages cannot be reprinted.

DOCUMENTATION

The documentation for this word processor was printed on a dot matrix printer, thinly printed, and put into a comb binder 8.5 x 11. While the text is clear and readable and has examples, it is also self serving. For example, the process of being thrown out of the editor when trying to overwrite a locked file is described as a "minor annoyance." The process of not doing stream processing of characters during right justification is described as giving more favorable results. This glowing effusiveness is presumably intended to obscure the limitations of the product.

Limitations of the product are not addressed squarely and honestly.

MAILBAG

One nice feature of the product is the MAILBAG program that allows the maintenance of a database of names, address, phone numbers, and comments. The data base program is menu driven, easy to use, sorts the records on any of the field items, and does substring searches. This database can be directly addressed by Word Power form letters and can also be used to print mailing labels. If you have Programma's Ampersort program, a second version of MAILBAG is designed to use it to sort your files. Otherwise, the sort is in BASIC. Large databases were not checked for sorting speed.

CONCLUSION

Word Power, like WRITE-ON! is vastly over priced compared to products like SuperScribe and Magic Window. It is a middlin' good line oriented editor. What the documentation makes up for in being technically informative, it loses on an inflated an unrealistic attitude towards itself and the user. The MAILBAG feature is nice, but the overall performance to price ratio must be considered very low.

The advertising claim in the ads "This complete Business package features the most comprehensive word processing and mailing management systems available" is by far wholly unsubstantiated.

EXECUTION: poor (editor)
poor (formatter)

DOCUMENTATION: poor

USAGE STANDARDS: poor

GOOD

/ Mailbag: address file manager

BAD

/ Line oriented
/ No error trapping
/ Disorganized screen format
/ Incompatible textfiles
/ Slow
/ Lack of candor in manual
/ Unable to handle right justification well
/ No way to start/stop printing
/ Poorly printed documentation

PII

WORD STAR

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 Unlocked

PR=AA+
 John Martellaro

INTRODUCTION

Word Star is the best word processor of any of the ones reviewed here. Period. It is a clear blow away. Word Star is so good that it outright embarrasses all but a few of the other word processors.

FANTASTIC FEATURES

Normally, when I review a word processor, (and I've seen a lot of them) there are problems that are immediately apparent. I can usually zero in on compromises and problems right away from experience. My list of shortcomings grows rapidly. Not so with Word Star. If there are any significant problems with WS, neither Mitchener nor I have found them. (One limitation is the inability to move columns around, but this is shared by all the WPs I looked at.) The list of outstanding features includes some things that weren't even on my "Lingwood standards" sheet. After looking for the holy grail of word processors and becoming completely discouraged that anything could beat P.I.E., we have found it.

Some of the nice features are, in no particular order:

Hyphenation. "Soft hyphens" will print only if at the end of a line. "Hard hyphens" will print anywhere and become soft hyphens if they occur at the end of a line. On screen formatting prompts you for hyphenation at an amazingly good approximation point.

Dynamic page break display. A line of dashes across the screen dynamically adjusts to show you where the end of the page is. A status line shows cursor row, column and page number.

On screen formatting. Word Star will create an image on the screen of exactly what the printed page will look like. Control characters input to control the printer can either be exposed for viewing or suppressed to preview the printed page.

Spooling. You can have the printer running and do screen editing simultaneously, provided you don't try to do too much too fast. Fantastic.

Long lines: up to 240 columns per line.

Time delay menus (suppressable) to help the beginner. Some commands are two level, e.g., CTRL O,I. If you type CTRL O and wait a few seconds, all the commands in the CTRL O menu are put at the top of the screen. As you get faster, the menu won't even come up. Also, whether or not it ever comes up is controllable.

THE EDITOR

Word Star has a live screen with cursor control being a quadrant of CTRL E,X,S,D. Right and left tabbing by word are CTRL A,F. While scrolling consists of rewriting each line in a not awfully fast manner as is possible with a memory mapped display, it is not too bad. (80 col cards have their own screen memory and text scrolling on the Apple text page, which is fast, is not possible. Any 80 col WP has this problem.)

There are four sub-command menus that control characteristic activities. CTRL J,(key) is a help function, CTRL K(key) controls block markers, quitting, and printing; CTRL O(key) handles page formatting, and CTRL Q(key) handles additional editing commands. As mentioned above, you can elect to have the menu of sub commands come up at the top of the screen if you wait, or execute the function immediately. This is a terrific feature and aids in the operation tremendously.

A status line at the top of the screen shows: the current command, cursor row, col, page number, and insert on/off status. Below that are the available commands (if desired) and below that the text area which is a pleasant black on white.

You can split and glue individual lines very easily, overwrite text, delete characters, words, or lines, or insert blank lines easily. There is a command to move the cursor to the position where it was before the last command and a command to repeat the following command at a variable speed. For example CTRL QQ, CTRL D will begin moving the cursor to the right character by character until the space bar is pressed. Pressing 0-9 will vary the speed as it happens. Not quite keyboard macros, but very nice.

You have two types of tabs, character tabs or decimal tabs. Character tabs work as usual (CTRL I) and decimal tabs allow the entering of numerical data in free form. Word Star keeps the decimal point automatically lined up.

When you type a space (for example the two spaces that are conventional after a sentence), that is a hard space. It is never deleted. Soft spaces inserted during on screen justification can later be deleted by WS if additional editing and justification produces a new look.

Most word processors have block markers that are either minimal and/or a pain to use. WS has numbered markers that can be displayed or suppressed and jumped to by number. Suppose you are writing a report that has some questionable data subject to refinement day by day until publication (Stock prices, gold quotes, etc.). You can put a marker at each point and use CTRL Q (0-9) to jump to any one or more of the markers.

WS has a nifty auto indent mode like P.I.E. that allows easy writing of indented material (quoted passages and so on).

The FIND/REPLACE function is all there. You can search regardless of case (or not), search forward or backward, and do a global with prompting at each occurrence.

Unlike all the Apple DOS WP's that keep your working file in memory, WS moves your file onto and off of diskette very quickly. Hence, in principle, your file is limited only by the diskette capacity, not memory.

Finally, many features can be toggled on/off. You can toggle insert mode, directory display, help menus, hyphen help, justification, and page break display.

In conclusion, Word Star is the most powerful AND easiest to use editor of any WP reviewed to date.

FORMATTER

Word Star allows you to "align" the screen so that what you see is what you get. There are, however, additional "dot" commands like P.I.E. and SuperScribe to more fully control the form of the text. You may wish to format the text so that some is justified and some is not, or leave holes for diagrams. Typically, these functions control such things as line height (in 48ths of an inch), pitch (in char/in), (for precision printers), margins, header names, paging, conditional or unconditional new page, and footers.

You have complete control over the appearance of the text if you have a full feature printer such as a Qume or Diablo. You have boldface, very boldface, subscripts, super scripts, incremental spacing, double strike, underlining, strikeout, alternate ribbon color, and MOST IMPORTANTLY, print any page. You can specify the start page and end page when printing. You can print a line twice with different characters to produce special graphics (not tested).

In short, everything you could possibly need for word processing has been included. A sample file doubles as a demonstration of the capability of WS. This file did things we've never seen our Qume do. (You'll need a 1200 baud high speed serial interface.)

DOCUMENTATION

Word Star documentation is clear and thorough, and there is a lot of it. It consists of about 150 pages 8.5 x 11 and has very thorough explanations written in good English and proof read. Command summaries are given in the chapters, but are not summarized in an easy to find place. The best command chart summary comes with the promotional catalog. There is no index.

One would expect that a \$500 word processor would have a four color quick reference card in plastic on a three hole punched sheet. But the 3 panel card supplied is not bad.

There is an extremely detailed section on configuring WS and abundant information on interfacing with various terminals. User modifiable subroutines are listed in assembly language.

All in all, the documentation is not too bad, but things are tough to find quickly. (Tabs would have been nice.) The text is well written and detailed without being wordy. Be prepared to spend some time reading. The saving grace is the split screen with menus of commands. This helps eliminate references to the manual.

FILES

Data files are standard CP/M text files. A fifteen kilobyte file (7 pages) loads in about 8 seconds which is warp speed fast compared to Apple DOS.

WARRANTY

As is current tradition, there are no warranties whatsoever on the product. Since the diskette is unlocked, there is a required licensing procedure. You can and should make back up copies immediately.

CONCLUSION

I was in no great hurry to get my own Z-80 card and 80 col board before seeing Word Star. Now I am. This is it, folks.

EXECUTION: excellent (editor)
 excellent (formatter)

DOCUMENTATION: excellent

USAGE STANDARDS: excellent

GOOD

- / Fantastic editor
- / Spooling
- / Hyphenation
- / Complete printer control
- / Print any given page(s)
- / Auto indent
- / Decimal tabs
- / Various help levels
- / Split screen (text/help)
- / File size not memory dependent
- / On screen justification
- / Incremental spacing, variable line height and pitch
- / Word tabbing
- / Command repeat

BAD

- / Doesn't handle column oriented material well.
- / No index in manual

WRITE-ON!

by Betsy Speicher
Rainbow Computing
9719 Reseda Blvd
Northridge CA 91324
213 349 5560
\$150.00
48K, Disk II, printer
Applesoft & machine language
Unlocked

PR=D
John Martellaro

INTRODUCTION

WRITE-ON! has been described as a "super" word processor elsewhere. It shall not be here. First of all, WRITE-ON! is a line oriented program; it does not process words. Along with Word Power, it does not stand up to the test as a full fledged Apple II word processor.

DESCRIPTION

This program is written in Applesoft with machine language assistance. The result is slow character input and unacceptably slow disk access. If you combine that with the difficulty of getting to any particular word on the screen, the result is virtual disqualification for consideration as a word processor.

The program boots up with a time consuming logo. It is best to simply run EDITOR. A tedious menu session then asks whether you want input from the keyboard or disk. If from disk, you specify files created by WO or other programs and then the file name. But you cannot specify FILENAME.Dn. You must answer a separate menu item to name the drive number. After this, the working display comes up.

The disk I/O is unbelievably slow. A standard text file generated by P.I.E. of only 7 sectors took three minutes to load. After saving it back to disk under the WO editor and reading it back, it still took 40 seconds. Compare that to Superscribe's 5 sec for 17 sectors.

The editor working page has a command/status line at the top and the text entry area below. Along the left side of the text is what is called the "current line pointer" (CLP). You move this pointer (an asterisk) up and down in order to operate on certain lines. There is no cursor control to take you to a particular word. The command "I" allows you to insert text at the CLP with word wrap around. However, if you realize that you made a mistake on the previous line, there is no way to back up. The left arrow allows you to back up only to the left margin and will not scan back up and to the right. This is a severe drawback.

When commands are processed, such as moving the CLP down n lines, the screen goes blank and then rescrolls. This is distracting. Since there

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is no cursor, when global replaces are made, there is no cursor at the replaced word. If there was an unintended replace, you will have to be extremely alert to see it buried in the text as the pages with the replacements scan by.

The process of inserting words in a line is tedious: characteristic of a line oriented editor.

PRINTER/FORMATTER

Printer format characters are characters enclosed in backslashes (entered via CTRL-X). For example, the right margin is set as \MR50\. Right justification is the default mode and it is as good as any of the non-proportional spacing programs. There are commands for centering, overstrike and underlining as usual. (The last two require a printer than can do a backspace.) The format commands cover most of the standard things you need to do such as indenting, headers, page numbering, and set up for single sheets. Major deficiencies here are: extremely slow printing speed, inability to stop and start the printing, and inability to print page x thru y of z pages.

There is a method supplied that speeds up the printing, but it involves writing the file first to disk. Incidentally, your editor file disappears when you print it. If you discover a mistake during printing, you must reload the editor then reload the file. With the file read speed what is is, be prepared to wait.

One nice feature, not often seen, is the ability to print page numbers on alternating sides of the page -- odd numbers on the right and even numbers on the left.

OTHER COMMENTS

Files are supplied on the back of the diskette, something that isn't done much anymore now that most people know about the perils of putting the (possibly abrasive) disk pressure pad against the good side of the diskette when it is turned over. Since WRITE-ON! is not copy protected, it is assumed the buyer will make immediate back-ups.

WRITE-ON! supports form letter formats and keyboard prompts to fill in standard formats. Special data files hold your address files for this purpose.

Appending of files is supported as is chaining of files when printing.

DOCUMENTATION

The instructions for WO are very well done. The introduction is comforting and informative. A gradual build up of knowledge in a psychologically pleasing manner is presented in clear, readable English. The explanations are clear and nothing (except the shift key mod) is left uncertain.

There is a quick reference sheet, an index, and a list of possible error messages. Lacking are comments about memory usage, a clear explanation of the shift key mod, and a tutorial. However, the manual is so well written that a tutorial isn't really a must. In this reviewer's opinion, however, the documentation gets too effusive. It seems to say "Gee, isn't word processing with this program wonderful!?" The reader will never be allowed to suspect what he/she is missing with regard to more powerful programs.

CONCLUSION

WRITE-ON! is vastly overpriced for what it does. (Rainbow says that the original version without the form letter module and other extra features is still available for \$99.) The thinkability and facility are poor. Menus for non critical items hinder progress while second chancing in the program is non-existent. While it is unlocked and maintains standard text files, it is slow and cumbersome to use.

EXECUTION: poor (editor)
poor (formatter)
disk I/O (unacceptable)

DOCUMENTATION: good

USAGE STANDARDS: poor

GOOD

/ Easy to learn
/ Form Letter Module (version II)

BAD

/ Unacceptable disk I/O
/ Line oriented
/ Slow
/ Laborious menus
/ Inconvenient search
/ Tedious word insert
/ Tedious use of dual drives
/ Cannot print page x,y

PII

WP WRAPUP

The thing most surprising to me is the uniformity of the word processors. It appears that the authors/publishers have not spent a great deal of time with all the other word processors, dissected them, discovered their weaknesses, and proceeded to put together a program that avoids previous pitfalls. The collective value of all the word processors reviewed here is nearly \$3000, so it is perhaps unreasonable to hope that one company would acquire and examine them all before writing a new word processor. But ideally, it should be done one way or the other. The most distressing thing is that of all the word processors that are new on the Apple, only one clearly outclassed the winner (P.I.E.) from the Nov-Dec issue of Peelings II, and that is Word Star. (Word Star has been around for awhile and has had plenty of time for refinement.)

I have tried in each review to point out features and/or problems that may concern you. However, it is a superhuman task to mention similar features of each program in every review. As an amelioration to that, there is a comparison chart that points out some of the (I think) more important features. It is a subset of the Lingwood Standards.

While it is true that your individual needs may vary, you are also entitled to know the raw programming power and intelligence of each program. To do this, I assigned points to each entry in the Lingwood table: each feature is given 2, 1.5, 1, 0.5 or 0 for extraordinary excellent, standard, sub-standard, and no implementation.

And now the results:

Place	Prgm	Points
1.	Word Star	63.0
2.	80 col PIE	60.0
3.	Letter Perfect	54.0
4.	SuperScribe	47.5
5.	Easy Writer Pro	45.5
6.	Exec Secretary	41.5
7.	SuperText II	41.0
8.	Select	39.0
9.	Word Power	32.0
10.	WRITE-ON!	29.0

I have slightly revised and expanded the Lingwood Standards to include features that did not exist on the programs reviewed in the Nov-Dec 80 issue. These include things like spellers, the capability of running a printer driver, and on screen formatting. The numbers shown for these programs are nevertheless roughly on equal standing with the numbers given in the Nov-Dec 80 issue. Select will only be included in the above list. See the review for an explanation.

That brings up the issue of how those seven programs (reviewed in V1 N4) have stood the test of time. Excluding P.I.E. and SuperText II which have updated versions reviewed here, there remains The Correspondent, Scribe, Magic Window, Apple Writer, and the original Easy Writer. As mentioned in the introduction, I no longer consider Apple Writer a viable program since it compares so poorly to all the other programs. Easy Writer original cannot use a lower case adapter and should be avoided. Scribe and Magic Window are still viable products that do a good job for the money spent. The Correspondent is a special case. It has limited power, but it is very inexpensive and is well done.

The next category is the execution of the programs. While this ranking is somewhat subjective, it does in fact correlate well to the overall Lingwood standards.

EXECUTION

1. Word Star
2. PIE 80 col
3. Letter Perfect
3. SuperScribe (tie)
5. Easy Writer Pro
6. Executive Secretary
6. SuperText II (tie)
8. WRITE-ON!
9. Word Power

DOCUMENTATION

1. Easy Writer
1. Letter Perfect
1. Word Star (tie)
4. Executive Secretary
4. SuperText II (tie)
6. SuperScribe
6. WRITE-ON! (tie)
8. PIE 80 col
9. Word Power

Giving 5 points for excellent down to 0 points for unacceptable in each of the two categories above, adding to the Lingwood usage standards, multiplying by 10 and dividing by the price, we achieve the performance to price ratio.

PERF/PRICE RATIO		Perf/\$	Tot pts
1.	SuperScribe	6.11	55.0
2.	PIE 80 col	5.15	67.0
3.	Letter Perfect	4.23	48.0
4.	Word Power	3.40	32.0
5.	WRITE-ON!	3.30	33.0
6.	SuperText II	3.16	47.5
7.	Easy Writer Pro	2.16	54.0
8.	Word Star	1.95	73.0
9.	Executive Sec	1.92	48.0

As you can see, to gain a small amount of power, you have to spend a great deal more money. So much for the math and objective evaluations.

OPINIONS

In this section I will give my blatant and personal evaluation based on quite a lot of experience with Apple word processors. You will have to make the final decision by going to your dealer and getting a demonstration. However, many dealers do not have the time and/or expertise to show you, in detail, a half dozen word processors. Hence, I will give you some opinions that are based on a lot of experience.

Any one in the top three of the Perf/Price list will probably make you happy.

SuperScribe (70 col) is a best buy. It has the most capability for the bucks and is a



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SUPER DISK COPY III

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MULTI-DISK CATALOG III

\$25.00

48K and DISK II drive required, APPLE II or APPLE II PLUS

MDC III is a very fast, machine-language database program designed specifically for keeping track of the contents of your APPLE diskette library. MDC III requires only seconds to read FILENAMES, FILETYPES, FILESIZES, number of free sectors remaining on diskette, and actual volume number from each of your diskettes. Both sides of a diskette can be loaded and assigned to the same DISK ID#. MDC III supports use of a two-character CLASSIFICATION field that can be used to group games, utilities, and other types of related files together. MDC III supports a fast Shell-Metzner sort on any of the five database fields. A unique "LIST MASK" provides a powerful search capability for interrogating the database for specific information. A "FLIP DOS" command allows MDC III to read directories from DOS 3.1, 3.2, and 3.3 disks and to store the resulting database on either a 13 or 16 sector disk.

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WP COMPARISON CHART

	EWP	EXSEC	LTRPER	PIE80	SUPRSCRI	SUPTXT	WORDPWR	WORDSTAR	WRITEON
<u>INPUT:</u>									
SHIFT KEY MOD SUPP	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
80 COL VERSION	Only	or 40	or 40	or 40	70 col	No	Yes	Only	No
DISP LINE FINAL FORM (1)	Yes	No	Yes	Yes	Yes	No	No	Yes	No
ONSCREEN JUSTIFICATION	Yes	No	No	No	No	No	No	Yes	No
WORD WRAP (INPUT)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
WORD WRAP (INSERT)	Yes	No	No	No	Yes	Yes	No	Yes	Yes
AUTO INDENT	semi	No	No	Yes	No	No	No	Yes	No
HYPHENATION	No	No	No	No	Yes	No	No	Yes	No
MATH MODE	No	No	No	No	No	Yes	No	No	No
INPUT CHAR SPEED	Slow	Fast	Fast	Fast	Slow	Med	Slow	Fast	Slow
CURSOR INDENTED TABS	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ROW, COL INDICATOR	No	No	No	Yes	No	No	No	Yes	No
<u>EDITING:</u>									
SCREEN ORIENTED	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LIVE SCREEN	Yes	No	Yes	Yes	Yes	No	No	Yes	No
EDITING MACROS	No	No	No	Yes	Yes	No	No	Yes	No
COMMAND LINE	Yes	Yes	Yes	Yes	Yes	Yes	Quasi	Yes	Yes
SCREEN SPEED	Slow	Fast	Fast	Fast	Slow	Med	Slow	Med	Slow
GLOBAL SEARCH/REPLACE	Yes	Poor	Yes	Yes	Yes	Yes	Poor	Yes	Poor
MULTIFILES (2)	No	Yes	Yes	Yes	Yes	Extra	Yes	No	\$150 ver
KEY DEF MNEMONIC	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes
<u>FILES:</u>									
READ STD APPLE DOS TXT	No	Yes	Yes	Yes	Yes	No	Yes	CP/M	Slowly
DISK READ SPEED	Fast	Normal	Normal	Normal	Fast	Normal	Slow	Fast	Unaccept
PROGRAM LOCKED	Yes	Yes	Yes	No	Yes	Yes	No	No	No
FORM LETTER MODULE	No	Yes	Yes	Yes	Yes	Xtra	Yes	No	Yes
USABLE W/ 2 DRIVES	Yes	Yes	Yes	Yes	Yes	No	Quasi	Yes	Quasi
USABLE < 48K	No	No	Yes	Yes	No	Yes	Yes	No	No
USABLE FREE MEM(48K)	10K	22K	34K	22K	60K	22K	?	100K+	20K
<u>FORMATTER/OUTPUT:</u>									
IMBEDDED FMT CHAR	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
PRINT PAGE X,Y	No	No	No	Yes	No	No	No	Yes	No
PROPORTIONAL SPCING	Yes	No	Yes	No	Yes	No	No	Yes	No
SPELLER	No	No	No	No	No	No	No	No	No
WORD COUNT	Yes	No	No	Yes	Char	No	No	Yes	No
<u>DOCUMENTATION:</u>									
QUICK REF CARD	Yes	Sheet	Yes	Yes	No	No	No	Yes	sheet
INDEX	Yes	Yes	Yes	No	Poor	No	No	No	Yes
TUTORIAL	No	No	No	Yes	No	No	No	No	No
DOC QUALITY	Excel	V. Good	Excel	Fair	Good	V. Good	Poor	Excel	Good
<u>PRICE:</u>	<u>\$250.00</u>	<u>\$250.00</u>	<u>\$149.95</u>	<u>\$129.95</u>	<u>\$89.95</u>	<u>\$150.00</u>	<u>\$99.95</u>	<u>\$375.00</u>	<u>\$150.00</u>

formidable contender for the average buyer. The screen speed is a little slow, but otherwise it is excellent.

P.I.E. 80 col is fast, powerful, and unlocked. It has considerable capability and is marred only by its documentation. If you have the technical bent, P.I.E. is terrific.

Letter Perfect is more straight forward and easier to learn. It has an excellent editor marred by only a few flaws, and would be well received in either an office or technical environment. It is fast but lacks a few of the features of P.I.E.

Word Star is the blow away program. It is the best. If you can afford both it and the hardware to support it, and if you need every possible feature for complex work, Word Star is fantastic.

EasyWriter Pro is very good, a miniature Word Star in its design, but it is too slow and lacks some editing power. The documentation and formatter are excellent. Take a look at this if you need on screen formatting and on screen prompting/menus and don't get in too much of a hurry.

SuperText II has some features that few or no other word processors have like split screen, auto-linking searches, and wild card searches. However, some features are of limited use and the command structure is a nightmare. Also, the screen is not live. Take a close look at the features to see if this is for you.

Executive Secretary, Word Power, Select, and WRITE-ON! are not recommended.

PEELINGS RATINGS

The following lists the order in which I would prefer to use the programs, if the higher ones on the list were non-existent.

	Order in which I prefer to use.	Overall impression
1.	PIE 80 col	AA
2.	Word Star	AA+
3.	SuperScribe	AA-
4.	Letter Perfect	A
5.	Easy Writer Pro	B
6.	SuperText II	B
7.	Executive Secretary	C
8.	WRITE-ON!	D
9.	Word Power	D

PII

DATA FACTORY 4.0

by William Passauer

Micro Lab

3218 Skokie Valley Road

Highland Park, IL 60035

312 433 7550

\$150.00

Applesoft

48K, Disk II, optional printer

DOS 3.3

Locked

PR=P

John Mitchener

INTRODUCTION

The Data Factory (DF) is a general purpose, menu driven data management system (DMS) for the Apple II which may be used to keep track of a wide variety of information. It offers several unique features over other data management systems that I have reviewed so far. Specifically, DF is the first of the DMS's that includes, as a part of the basic package, the ability to reconstruct and modify a loaded data base without having to rekey all of the data. This feature is apparently available with some other systems such as the High Technology Information Master in the form of Data Master and with the Utility Pack for DB Master from Stoneware. In both of the latter cases it is an extra cost optional program. Like many of the others that we have reviewed, DF is disk based and as such, offers the ability to store more records than can be held in memory at any one time. Other features that make DF unique are the global search and replace function, the ability to use a modem with the system, and individual field updates.

SYSTEM REQUIREMENTS

A word or two may be helpful about system requirements. It seems that more and more of the programs that we are seeing now almost mandate the use of two drives. DF is another of these. The system will operate with one drive but I think that using it for a short time in that configuration, with all of the disk swapping, would lead one to decide that life in an asylum would not be so bad.

A modem may be used to access DF from a remote location. If the remote terminal is an Apple, the display will appear as it does on the screen at home. If your remote terminal is something else, your display may not be nearly as clean as you might like, but at least the program is available for use.

DF may be used with an 80 column card with limitations. The card must have firmware that performs a "clear screen" when a Control-L is issued and it must be firmware switchable from 40 to 80 columns.

DF does not support user supplied printer driver routines. Printer calls are made by the standard PR#.

RECORDS AND FILES

Of critical importance in determining the usefulness of any DMS is the number of characters allowed per field, the number of fields per record, and the number of records which can be placed in a file. DF allows up to 239 characters per field and a maximum of 88 fields per record. Obviously, these constraints are not particularly tight for most applications. The actual number of records that may be maintained in a file is dependent not only on the previously mentioned parameters, but also on the longest field that you will want to search. This must be specified at the time the data base is established, but may be changed later on. For relatively short records of less than ten fields and only one field of 239 characters, about 800 can be in the same file. There is no capability of extending the file beyond the capacity of one disk.

DB SETUP

Set up of a new data base is quite easy. If you are using a two drive system, the system disk, goes in drive 1 and the data disk in drive 2. Should the disk not be initialized you will be given the opportunity to initialize it. This is a feature that should be a part of all programs that require new disks. I don't keep a supply of initialized disks lying around so it is frustrating to have to exit a program just to initialize. Establishing the file consists of specifying the length and name of each field. There is an opportunity to correct individual fields or to start the whole process over again if you make a mistake.

The field types are not specified except for a justified field. To create a justified field you need only put a space after the last character of the field name. This field type is used for math to obtain totals.

DATA ENTRY

Entering data with DF is simple and fairly fast. The information is typed in next to the field name and if you try to enter more characters than are specified for that field, an error message appears and you must enter the information again. To correct data in a previous field, type a control-B to back up. If things are really bad, type a control-R to restart entering the entire record. To repeat information from the same field in a previous record to the new record, hit the escape key. This is particularly useful if you have a field for STATE and are doing a mailing list for 800 people in Mississippi.

After all of the information for a record has been entered, you must decide to either put the information in memory or write it directly to disk. Of course, the direct writing to disk takes longer, but there is less danger of losing data due to hardware or power failure. Selecting the memory option saves a lot of time and, if there isn't a thunderstorm in the area, is probably worth using. All data is saved to disk every 50 records or whenever you exit from the entry mode.

SORTING

The sorting routine is used to arrange the records in the file in an order other than that in which they were entered. This is often necessary to accommodate certain types of reports. Since DF does not automatically delete records from the file with the Delete a Record function, the deletion is done during the sort. The sort is fairly fast but still not as fast as a machine language sort routine of records in memory. You may sort on alphabetic, numeric, or date fields. There is nothing magic about dates except that they must be entered in the form MM/DD/YY. Sorting may be done back to the original file or you may specify that the sorted file will go to a new disk in Drive 1. You may choose to sort in ascending or descending order. A special 20 level sort is possible which appears to be a more complicated way to achieve multi-level sorting. To use this feature a sort on the major field must be done, then one must go back and specify the record numbers that are to be included in the secondary, and deeper, sorts. I found this to be cumbersome to use.

UPDATE FEATURES

DF has three different ways to update the data fields. One of these is the Update Option. With this routine you may update all of the fields or select only certain ones to update. If, for example, you have a file containing a parts inventory and you receive a shipment, the quantity on hand field could be selected and the new data entered without having to page through each record within a certain category. An option is available to view the entire record at the time of the update. Each update is immediately saved to disk upon entry.

A second method of updating is the Inspect/Change Option. Records to be viewed or changed are selected by either knowing the record number or by specifying data in a particular field. In addition to being able to change the data in the record, it is also possible in this routine to change field names.

The third way to change the data in a file is by using the Replace Option. This is the powerful global search and replace feature mentioned in the introduction. With this module it is possible to change a number of fields in either all records, records that are selected by record number, or records selected based on the data contained in the fields. Besides the replace portion of this module, there is a mathematics option which will allow the four basic arithmetic functions to be performed on the data and the result stored in the field of choice. This is not the simplest of modules to use and can be dangerous if you don't know what you're doing. The updates are made without prompting.

SEARCHING

DF includes a variety of search methods to take care of almost any kind of inquiry. Searches may be done using record numbers, matching or not matching fields or portions of fields, and characters to be found may either be at the beginning of the field or embedded in the field. There is a provision for range searches and there is a 20 level search capability which again is fairly complicated, but powerful, once you have used it for some time.

MATH AND INDEX FUNCTIONS

Many of the DMS's that I have reviewed have incorporated math functions. DF is no exception and although the documentation says that math is not the primary purpose, the functions are useful. The math functions include total, average, and count. The count function is one that I consider to be among the more useful features of a DMS.

The index module is a very powerful tool in monitoring the data in the file. Using the index features it is possible to get counts on each unique value within a particular field. For example, if you have a mailing list with a separate state field, indexing with one of the options will yield a count of the number in each state. Other options include listing only the record number of the first occurrence or listing the record number of each occurrence. This is the only DMS that I have found in this price range that has the index features.

FILE MAINTENANCE

The files created by DF may be manipulated in a number of ways by using either the Transfer or the Construct/Append Modules. With Transfer, records or fields may be moved to an entirely new data base or may be appended to the end of an existing data base. The Construct/Append routine allows for the complete reformation of the data base when you change your mind. Of course, there may be a price to pay. For example, if you have a file with city and state in the same field, but decide that they should be separate, the C/A routine will allow you to add the needed fields and delete the old one. After the fields are added you will have to use the update routine to enter the data as the old city and state field data will not be retained. Still, it is better than retyping the whole file.

Up to 10 new data fields may be added each time C/A is run. Field lengths may be changed and the order that the fields appear in the record may be changed. This feature worked very nicely. When fields are added, they are added to the end so if the order doesn't suit you, just run the program again and rearrange them.

In addition to adding, deleting, or changing fields, C/A may be used to append fields/records to unlike data bases. In this case the format of the file to which you are appending controls the names of the fields and the lengths. This is a feature not found on other DMS's that I have reviewed.

PRINTER ROUTINES

With all of the power of DF it is unfortunate that more effort did not go into the printer routines. The output from a number of the routines such as List, Search, and Inspect/Change may be directed to a printer but the capability to format an output is not as flexible as one would expect in a full function DMS. Fields may be printed in any order; they may be printed in either horizontal or vertical orientation. Multiple fields per line may be printed but if you specify two fields per line, it will either print two fields per line for the entire record or only on the first line of the record, depending on the option selected. This is a problem if you are trying to do mailing labels such as we use for your subscription label. The first line consists of the expiration date and the subscription number. The next two lines are for names or name and the first part of an address. Then comes the street address and the city, state, and zip code. The problem is immediately apparent because the first line contains two fields, the next three contain one field, and the last line contains three fields. The problem may be solved by setting up the file with city, state, and zip in one field and if you need them separately, just add the extra fields.

There is a routine to set up all of the printer parameters such as page length, printer slot, whether you're using a modem or not, and line feeds on carriage return and form feed. The documentation states that when using vertically formatted lists the program will not reliably count lines per page. I found this to be true and annoying.

DOCUMENTATION

The documentation consists of plastic binder with approximately a hundred 5.5 X 8.5 loose-leaf pages separated into sections by plastic dividers with the topics printed on them. There is a fairly detailed table of contents that makes finding something very easy. The descriptions of the operation of the programs are short but detailed enough that reading the documentation while working with the program produces good understanding.

DATA FILE COMPATIBILITY

The data files generated by DF are available for use with other application programs. There is a short section (two pages) in the documentation

explaining the file format and how it is used. The user is warned that the section is for experienced programmers only. The explanations are relatively obtuse and would require some trial and error on a backup disk.

WARRANTY

DF is furnished with backups of both of the system disks so there is no worry about getting that backup copy. Under the regular warranty a defective disk must be returned with a \$10 fee and Micro Lab will send out a replacement within 30 days. This seems like a long time to be without a backup. Returning the warranty form from the documentation book will result in your being notified of updates. This form must be on file with Micro Lab before they will answer any questions about the program either on the phone or through the mail.

Micro Lab also offers an extended warranty program that costs \$30 per year. With this warranty, replacement of defective disks is free during the warranty period and shipments are on a priority basis. By sending in the older versions of their disks, holders of the extended warranty will also receive updates of the programs as they occur.

EVALUATION

The Data Factory Version 4.0 has many features to recommend it. For use primarily as a retrieval system, it is fast and has the options to make it flexible enough to handle most of the problems that would be encountered in a retrieval situation. I found the printer routines to be lacking if you need a report in a particular format. The printer routines are not consistent in keeping track of the number of lines printed on a page. It matters not that this problem is mentioned in the documentation because it is still a bit of unpleasantness that I don't like. The capability to use DF with a modem is one which I find very useful.

Error trapping is adequate but not as well executed as I had expected. I did manage to cause an exit to Applesoft occasionally by entering a wrong command. There was no loss of data, however.

I would be most interested in hearing from readers who have been using the various data management systems. To provide a little incentive, we will give a free 6 issue subscription/renewal to the person who has the most unusual application for a data management system, not necessarily this system. Please tell us which system you are using and what you like most about it and also what you like the least. The decision of the judges (PII Staff) will be final.

PII

SEE IMPORTANT NOTICE ON PAGE 9!

INFORMATION MASTER

by James A. Cox & Stephen M. Williams
 High Technology, Inc
 P. O. Box 14665
 Oklahoma City, OK 73113
 405 840 9900
 \$100.00
 Applesoft
 48K, Disk II, optional printer
 DOS 3.3
 Locked

PR=P
 John Mitchener

INTRODUCTION

Information Master (IM) is a data management system that has been on the market in one version or another since 1979. Because of this, the authors have had the opportunity to make changes in the package and from all indications, the changes have been for the better. A lot of work has been put into the output routines for printing reports and into the routines for selecting the data to be displayed.

SYSTEM REQUIREMENTS

This is another of the programs that will operate with one disk drive but is much smoother with two. The disk swapping problem is going to be with those who have one drive.

IM does not support a user supplied printer driver routine. The printer interface must be accessible by a PR# statement. It does support several of the printer interface cards such as the Apple High Speed Serial and the SSM AIO. The Communications Card doesn't work satisfactorily according to the documentation.

RECORDS AND FILES

IM is a system which is designed to handle a fairly high volume of relatively small records. The maximum number of records is 1000 and the maximum number of fields per record is 20. Twenty may be too restrictive for many applications. The system is disk based and so is not constrained solely by the available memory.

FIELD TYPES

Three types of fields are used by IM to store the data. The alphanumeric field can be used to save up to 99 characters per field. The numeric and the dollar fields will hold numbers up to 19 numerals with the primary difference being that the dollar field is limited to two places to the right of the decimal point.

DB SETUP

The initial setup of the data base is much like most of the other programs of this type. The program disk is placed in Drive 1 and the data disk goes in Drive 2. If you have one disk drive, prompts are given to tell you when to change disks. IM will take care of initializing a blank disk for you. This is not only convenient, but more information may be stored on a disk initialized by IM than on one which is initialized by

DOS. You must specify the name of the field, the field type and the length of the field. With IM the field names may be changed at any time by running the modify system layout program.

A second part of the design is the definition of what the sorts will be for the data base. These are changeable but do have an effect on the total number of records that can be maintained in the file. Subsorts after a major sort may be entered and a total of five different sorts may be specified if needed. The sorts may be changed in the same manner as the field names by running the modify system layout program. The time required for saving the modifications may be up to a half hour if you have a very large file with several sorts.

DATA ENTRY

IM has some features that make data entry convenient and easy. The left arrow key backs up either within the current field or to the previous field when you reach the beginning of the field. Additionally, there are two ways to duplicate the corresponding field from the previous record. The escape key duplicates the entire field or control-A adds one character at a time from the previous field. This is a time-saver if only a couple of characters are changed, such as when the last number of a zip code is different.

A calculator function is also available if you are entering several values and then need to add a total field. The problem is that the values must be entered into their respective fields and then reentered in the calculator mode to obtain the sum for the total field. I found this repetition annoying since I had already entered the data once. The four basic math functions are supported so it is useful if you don't happen to have a calculator handy or even paper and pencil.

Newly entered records may be saved to disk by hitting the ESC key. I like the option of being able to specify when the records will be saved rather than having each record saved as it is entered. Of course, you are subject to a power or hardware failure causing the loss of a few records but the time saved is worth the risk. All records are saved when you exit.

SEARCHING & SELECTION

A variety of search and selection methods are available with IM. These include "and/or" searches plus all of the relational searches such as greater than, less than, equal, and not equal. Up to seven selection criteria may be entered at once. The criteria are entered either in the Enter/Modify data routine or in the Print Formatted report routine. The flexibility of the selection criteria permit quite sophisticated retrievals from the data base.

When you want to change one field of each record in the data base, it is quite an easy matter with the global replace option. One field at a time can be changed based on the selection criteria that are established. You may specify that the records to be changed will be viewed as the change occurs. You actually see the change

take place on the screen, or the changes may be accomplished without any visual cues.

Unfortunately, IM does not support an index or count function such as that contained in Data Factory. As I mentioned before, this function is one which I find most useful in a data management system. Quite often I have no need to view all of the records that meet a specific set of criteria, but I would like to know how many there are.

Generating reports from the data stored by IM is easy after you've done it a few times. There is flexibility inherent in the system not found in many of the data management systems that I have reviewed. Reports may contain up to fifteen columns and as many as ten lines per record. Data fields may be printed in any order. Columns are positioned on the report by the user and the headings are also user specified. With this capability, you are not tied to the field names that were set up when the data base was designed. To aid in laying out your report formats, a report format worksheet is included in the documentation. The full range of math functions are available for use in performing calculations in the reports. Page breaks and subtotals may be requested whenever a field value changes.

DELETED RECORDS

Some of the data management systems that we have looked at included the ability to keep deleted records for a time after they were deleted. Deleted records were only marked for deletion. This is true for IM as well, but there is an additional feature or problem depending on what you're trying to do. Modification of records in IM results in the creation of a new record for the modification and the marking for deletion of the old record. This only becomes a problem if you have a large number of records and do a number of modifications such that the total number of records approaches the magic number of 1000, the total that can be in the system. When you get to that point, you must run the compact/sort data file routine to clear out the deleted records to make room for more modifications.

I feel that this is a convenient way of doing things because there is a way to get back to the original record without having to rekey or go to a backup disk.

BACKUPS

Speaking of backups, a Transfer Files routine is included which will move either the system format files or the system format and the data files to a new disk. If an error is encountered during the transfer, the program will mark the offending record and after the transfer is complete you can search for the bad records and attempt to fix them.

COMPATIBILITY

Data files generated by IM are available for use with other programs. The format of the files is given in the documentation. I am still waiting for the software package that incorporates a high quality data management system, report writer, and word processor. Of course, translator programs may be written to convert one format to another but that is time consuming and many people are not willing to do that unless they have to.

DOCUMENTATION

Documentation on IM consists of 130 pages plus an index. The instructions are presented as a tutorial and begin with using a sample file to make some simple retrievals and print a simple report. After this phase is completed, a second tutorial begins in which you will be instructed to create a new file which is used throughout the rest of the documentation and teaches the remainder of the commands and functions. I was impressed with this method of instruction in the use of IM. It made learning to use the programs simple and yet logical. High Technology is to be congratulated on providing an easy to use manual.

WARRANTY

High Technology will provide a free backup copy of the Information Master disk after they have "accepted" your licensing agreement. In addition, for a period of ninety days, they will endeavor to correct any reproducible program errors that you may discover.

EVALUATION

Information Master is one of the better data management systems currently available. It offers a great deal of flexibility and fewer limitations than many. The formatted reports capability is powerful and seems nearly comparable to DB Master. The selection criteria for records includes Boolean searches and all of the relational searches. These searches may also include positional searches where you are interested in a particular character within a field. An example of this is if you have several different items of information coded into one field such as age in the first two positions, sex in the third position, and life insurance coverage code in the fourth position, it is possible to pick out only the males with a particular life insurance coverage. The use of code fields can help to overcome the limitation of a maximum of 20 data fields.

On the negative side, IM is somewhat slow in moving between routines. This is objectionable only if you need very fast response from a data management system. A major drawback for some individuals will be the 20 data fields limitation. I have one small application that I am running which takes 30 data fields and that is not really enough to store all of the data that I would like to maintain.

I had a good feeling in working with Information Master. The instructions are straightforward and the manual is well written. The Data Master option package for modifying a loaded data base would probably be a good investment, if it performs as advertised. I find that I always forget to add the one field I need until all of the data has been entered or I have more fields than what I need. Either way, it would be convenient to have the ability to change the data base without having to rekey all of the information.

PII

SEX-O-SCOPE

Text by John Townley
 AGS Software
 Box 28
 Orleans, MA 02653
 617 255-0510
 \$30.00 diskette
 Applesoft
 ROM Applesoft, 32K RAM, Disk II
 Unlocked

PR=C
 Edward Burlbaw

INTRODUCTION

Sex-O-Scope is in many respects exactly the same as Astroscope (reviewed in the previous issue). The major difference is that all the interpretation is oriented toward ones sex life or sexual preferences. The documentation is the same except for the cover containing Preface, list of famous people and brief description of the program.

OVERALL IMPRESSION

The shortcomings of computer interpretation are more apparent in this program than in Astroscope. When dealing with such a specific part of ones personality it is easier to have contradictions between the interpretations of the aspects. Even though the documentation gives some advice about resolving these, I think the casual user will instead be turned off by them.

PII

MULTI-DISK CATALOG III

by Charles Hartley
 Sensible Software, Inc
 6619 Perham Drive
 West Bloomfield, MI 48033
 313 399 8877
 \$25.00
 6502 Machine Language
 48K, Disk II, optional printer
 Any DOS
 Locked

PR=AA
 John Mitchener

INTRODUCTION

If you are like I am, you probably have several binders or boxes of disks with a lot of good programs, but it is nearly impossible to find the one that you want in a hurry. There is a simple solution if you're willing to take just a little time.

Multi-Disk Catalog III (MDC) is a utility similar to M-CAT2 reviewed in V2N2. The program maintains a master file of the programs on your disks. Fields included in the master file are Disk ID, classification, file type, size, and filename. The master file may then be searched, sorted, or listed to either the screen or printer.

DISK ID

MDC doesn't use the volume numbers to keep track of the disks; rather, you assign a separate three digit number to each disk you load into the system. This makes a lot of sense because there are numerous volume 254's out there. A sticker with the Disk ID# on each of your disks makes it very simple to find any program quickly.

PROGRAM CLASSIFICATION

Another feature which sets this program apart is the option to include in the master file a two character program classification code. A menu of suggested codes is given, but any two characters will work. Examples include DU for disk utility, HG for hi-res game, or PC for personal correspondence. I would suggest that the codes should be added when a new disk is put into the master file and not wait until you have 500 filenames to classify. Some of those names certainly don't make much sense in the cold light of day.

SEARCHING AND SORTING

The program includes a fast Shell-Metzner sort which may be used on up to 3 of the five fields at once. Fast is a relative term but this program consistently sorted 500 filenames in under ten seconds. The sorted master file may be listed to either the screen or the printer, either in its entirety or partially, using the search method. A user printer driver may be used with MDC provided that it will fit in 50 hex bytes. A sample driver is included in the documentation for the Electronic Systems serial I/O board.

MDC allows for a search of the fields using a "mask" technique rather than the more common substring search. The List option presents a format line which shows the column by column representation of the master file. Only records which have character matches in the same columns as the format line will be selected. For example,

Format Line: ID# CL T SIZ FILENAME

DU

By entering a "DU" under the classification column you would retrieve all of the disk utility programs that you had entered in the master file, regardless of what disk they are on.

DOS COMPATIBILITY AND CAPACITY

MDC includes a "Flip DOS" capability so that 3.3 and 3.2 disks may be included in the same master file. Your data disk may be in either 3.3 or 3.2 format. This feature makes it possible to have all of your programs (except those locked disks that won't catalog) in one or more master files with the ability to order and search for filenames, types, sizes, classes, or disk ID#. Free disk space is also shown for each disk.

The capacity of a single master file with MDC is 950 files. There can be up to nine master files on a single disk and then a new disk with nine more master files may be used.

EVALUATION

The programs from Sensible Software that we have received have been very high quality. This utility is so "user friendly" that a manual is hardly necessary; however, a nine page booklet is included which describes all of the commands and includes examples and a sample session. If you have aspirations of becoming organized, this program can be of great assistance.

I think as soon as I quit procrastinating I'll use it to get my life organized.

PII

PEELINGS RATINGS

The philosophy of rating software is somewhat akin to rating movies. The usefulness or entertainment value of a particular program may vary widely between users. The staff of Peelings II makes their best judgment about software based on the documentation and demonstrated performance of the program. They explain the features and weaknesses of the program in sufficient depth that you, the reader, can decide if a particular program meets your requirements.

In addition to a detailed description of the program, we feel that there is room for an overall, subjective judgment of the quality of a program. There will always be some degree of subjectivity in any review, and we have elected to express this as the PEELINGS RATING (PR). It is indicative of the reviewer's overall perception of the program.

Included in the Peelings Rating is the concept of price to performance ratio. Obviously, a program does not have to do as much for \$14.95 as it would for \$99.95.

We stress that you should not skip a review or disparage a program because it receives a low PR. There may be some features that you want or will need for your application. For this reason, the rating should never be quoted alone with out reference to the text of the review.

The principal reviewer assigned to a program has the final say on its rating; that is the rating that goes "into the books." In the event that there is a controversial program or a dissenting vote, other reviewers will add their opinion in an addendum. This again simply reflects differing attitudes towards programs. After the dust settles, you decide for yourself.

The Peelings II rating categories follow. Some example criteria are given for the categories, but they are not meant to be all inclusive.

AAA - Absolutely astounding software. We have yet to see a software package that fits this category.

AA - Top notch, superb. Programs in this class generally have excellent documentation and use the most sophisticated programming techniques.

A - Very good. Software in this class is characterized by clear and informative documentation, and the program incorporates good programming techniques.

B - Good. Software in this class may have minor errors or be slightly flawed, it may be lacking in thorough documentation, or it may just be unexciting.

C - Average. Software of a mediocre nature. There may be lack of good programming concepts, lack of good error trapping, it may be a repeat of other work, or have a low performance/price ratio.

D - Below Average. Software with a blatant disregard for the user in terms of programming design, unacceptable documentation, or unacceptable price to performance ratio are example criteria.

F - Unacceptable. Software of such poor value that it should not be marketed.

P - Pending. The rating is on hold for comparison to other similar types or it is not yet appropriate to give a rating (e.g., mini-review).

N - No Rating. The reviewer abstains, or a rating is inappropriate.

PII

PEELINGS POLICIES

READER SERVICES

If you feel you have been ripped-off by a bad product and have been unable to achieve satisfaction from the vendor, send Peelings II a letter describing in detail your problem. Be sure to give full information about the program: publisher, address, program name etc. If we decide there is a case, we will pursue the matter ourselves.

Peelings maintains a list of most requested software for review. Send us your requests. Part of every issue from now on will be devoted to the readers' choice for software to be reviewed.

HARDWARE REVIEWS

Due to reader demand, Peelings II now actively seeks to review Apple II peripherals and hardware. Call us regarding policies if you have hardware you'd like to have reviewed.

OUTSIDE REVIEWS

We do not solicit reviews or articles from outside sources.

PII

SOFTWARE REV. BY ISSUE

RATINISSUE	PRGM NAME	PUBLISHER
A	V1N1 ACTS MODERN PRGM	N.E. OHIO BULTN BOARD SYS.
A	V1N1 ALIEN INVASION	PROGRAMMA
A	V1N1 APPLE 21	SOFTAPE
A	V1N1 APPLE BOWL	APPLE COMPUTER, INC
AA	V1N1 APPLE INVADER	PROGRAMMA
A	V1N1 AVS COM-PAK	APPLE VALLEY SOFTWARE
B	V1N1 B.I.T.S.	PERIPHERALS UNLTD
AA	V1N1 BASEBALL	PROGRAMMA
AA	V1N1 BILL BUDGE'S TRILOGY	CALIFORNIA PACIFIC
A	V1N1 DATA CAPTURE 3.0	SOUTHEASTERN SOFTWARE
C-	V1N1 FLIGHT SIMULATOR	DYNACOMP, INC
AA	V1N1 FORTE	SOFTAPE
AA	V1N1 HIRES TEXT GENERATOR	A.P.P.L.E.
A	V1N1 KEYBOARD EXPANDOR	C&H MICRO
D	V1N1 KORSMEYER ELEC DESIGN	KORSMEYER ELECTRONICS
C	V1N1 MATHEMATICIAN, THE	SPECTRUM SOFTWARE
A	V1N1 RACER	SOFTAPE
C	V1N1 SONGS IN THE KEY OF APPLE	HAYDEN BOOK CO
AA	V1N1 SUPER INVADER	ASTAR INTERNATIONAL
B	V1N1 TUESDAY NIGHT FOOTBALL	SHOESTRING SOFTWARE
AA	V1N2 A2-FSI FLIGHT SIM/TAPE	SUBLOGIC
B+	V1N2 BAZOOKA	PROGRAMMA
AA	V1N2 BUDGE'S SPACE ALBUM	CALIFORNIA PACIFIC
C	V1N2 C&H TEXTPAGE	C&H MICRO
A	V1N2 CHESS CONNECTION	TELEPHONE SOFTWARE CONN.
AA	V1N2 CO-RESIDENT APPLESOFT EDITOR	HIGHLANDS COMP SERVICES
A	V1N2 CREATIVITY LIFE DYNAMIC	AVANT-GARDE CREATIONS
A	V1N2 DARTROOM	PROGRAMMA
C	V1N2 ENGINEERING MATHEMATICS I	HAYDEN BOOK CO
C+	V1N2 GENERAL MATHEMATICS	HAYDEN BOOK CO
A	V1N2 HIRES MYSTERY HOUSE	ON-LINE SYSTEMS
B	V1N2 INTERLUDE	SYNTOIC SOFTWARE CORP
A+	V1N2 LEM LANDER	HARRISONBURG COMP SVCS
B+	V1N2 MACRO ASSEMBLER	EASTERN HOUSE SOFTWARE
AA	V1N2 S-C ASSEMBLER II VER 3.2	S-C SOFTWARE
A	V1N2 TELE-CHESS	APPLE VALLEY SOFTWARE
A	V1N2 TERRORIST	EDU-WARE, INC
A	V1N2 TRACK & SECTOR LIST	SOFTAGON
A-	V1N2 TYPING	COOK'S COMPUTER CO
A	V1N2 WHAT'S THAT SONG	JDEL LECTRICWARE, INC
A	V1N2 WINDFALL	EDU-WARE, INC
AA	V1N3 A2-FSI FLIGHT SIM/DISK	SUBLOGIC
B+	V1N3 ACTIVE FILTER DESIGN	HAYDEN BOOK CO
A-	V1N3 BOXING	PROGRAMMA
A	V1N3 COMPUTER BISMARCK	STRATEGIC SIMULATIONS
A	V1N3 CONDITIONING LIFE DYNAMIC	AVANT-GARDE CREATIONS
P	V1N3 DATA BASE II	PROGRAMMA
P	V1N3 DATA MANAGER	HAYDEN BOOK CO
C	V1N3 DISK UTILITIES 2.1	ON-GOING IDEAS
A	V1N3 DOUBLE PRECISION FP PACKAGE	S-C SOFTWARE
B+	V1N3 DUNGEON CAMPAIGN	SYNERGISTIC SOFTWARE
P	V1N3 MODIFIABLE DATA BASE	SYNERGISTIC SOFTWARE
A+	V1N3 ODYSSEY	SYNERGISTIC SOFTWARE
P	V1N3 ON-LINE DATA BASE	BLUE LAKES SOFTWARE
P	V1N3 PADDLE GRAPHICS	ON-LINE SYSTEMS
P	V1N3 PILOT	COOK'S COMPUTER CO
AA	V1N3 S-C ASSEMBLER II VER 4.0	S-C SOFTWARE
A+	V1N3 SINGLE DISK SORT	DATACOPE
A-	V1N3 SPACE	EDU-WARE, INC
A-	V1N3 SPACE II	EDU-WARE, INC
A+	V1N3 TEXTFILE COPY	DATACOPE
A-	V1N3 TINY PASCAL	PROGRAMMA
A-	V1N3 WILDERNESS CAMPAIGN	SYNERGISTIC SOFTWARE
AA	V1N4 APPLE PIE-40 COL	PROGRAMMA
B	V1N4 APPLE WRITER	APPLE COMPUTER, INC
A-	V1N4 CORRESPONDENT	S.W. DATA SYSTEMS
A	V1N4 CRYSTAL CAT	JDEL LECTRICWARE, INC
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INDEX OF ADVERTISERS

ADVANCED BUSINESS TECH.....	41
ARTSCI INC.....	1
AVANT-GARDE CREATIONS.....	9
BLUE LAKES SOFTWARE.....	C1
CALL A.P.P.L.E.....	2
COMPUTER DATA SERVICES.....	31
EDU-WARE SERVICES INC.....	11
H&H SCIENTIFIC.....	13
HARVEY'S SPACE SHIP REPAIR.....	15
HIGHLANDS COMPUTER SERVICES....	17
HUNTINGTON COMPUTING.....	33
IDS.....	19
INFORMATION UNLIMITED SOFTWARE..	BC
INTERACTIVE MICROWARE.....	21, 23
ON-LINE SYSTEMS.....	8, 10
PIPES COMPUTER SOFTWARE.....	35
RTR SOFTWARE.....	23
SENSIBLE SOFTWARE.....	25, 43
SOUTHWESTERN DATA SYSTEMS.....	27
SPELLBINDER.....	7
STREET ELECTRONICS CORP.....	30
SYNERGISTIC SOFTWARE.....	C2

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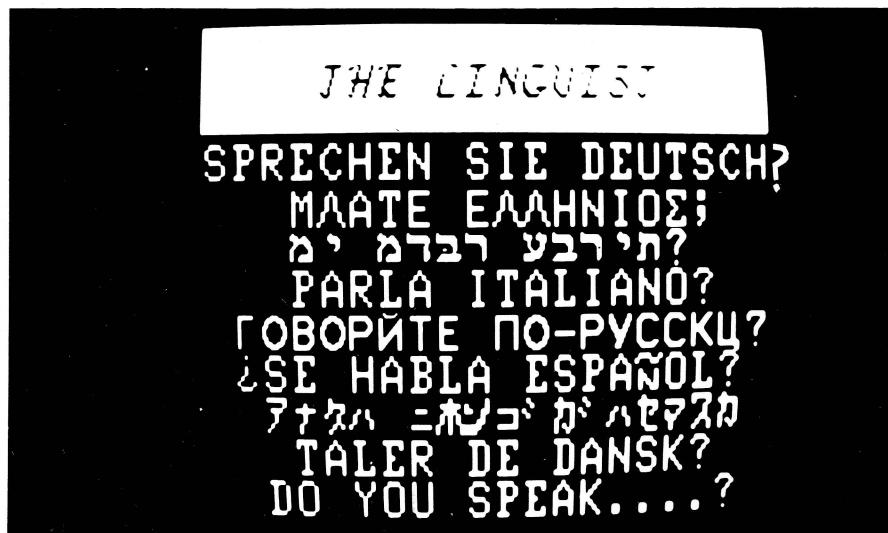
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